

January 14, 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 – December 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 **December 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
Chris Swain – Maine DEP
Orrington Town Library
Paul White – Town of Orrington
David Wright – Maine DEP

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

Report Date: January 14, 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 conference call with DEP on Dec 18, 2017 to discuss site remediation activities.
- Based on discussions with DEP, the Sitewide Winter 2017-18 Plan was submitted to DEP on Dec 19, 2017 and approved by DEP on Dec 21, 2017.
- 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 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)
 - Discussions continued regarding waste characterization, fill material and approval of the final Landfill 1 CMIP.
- Landfill 2 (CMI Closure Report Dec 21, 2017)
 - Submitted the Landfill 2 CMI Closure Report to DEP on Dec 21, 2017.
 - Continued to maintain erosion and sediment control measures.
- Landfills 3, 4 and 5 (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Continued to maintain erosion and sediment control measures and cap inspections.
- Plant Area (Draft CMI Plan Feb 13, 2017)
 - Continued fabrication of Chloropicrin Treatment System Enclosure including electrical and heating components.
 - Submitted the Plant Area Phase 1 Excavation Memo to DEP on Dec 8, 2017. Comments were received from DEP on Dec 19, 2017. A response to DEP's comments and revised submittal will be submitted to DEP in early January.
- Scrap Metal Yard (CMI Closure Report Jul 25, 2017; DEP Acceptance Oct 3, 2017)
 - Continued to maintain erosion and sediment control measures.
- Southerly Stream (CMI Closure Report Nov 15, 2017)
 - Continued to maintain erosion and sediment control measures.
- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017)
 - Continued to maintain erosion and sediment control measures.

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- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231)
 - Contractor demobbed from the Site.
 - Began preparation of the Southern Cove Closure Report.
- 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 for the Scrap Metal Yard, Southerly Stream, and Landfill 2 in accordance with the Short-Term CMP the week of Dec 11, 2017.
- Groundwater
 - Final Extraction System at Landfill 1 (Final Design GEWS Oct 16, 2017):
 - Continued operation of extractions wells and quarterly monitoring and reporting.
 - Conducted 72-hour performance test of EW-3 and EW-5 between Dec 5 and 8, 2017.
 - Initiated planning to abandon certain monitoring wells and piezometers in the Landfill 1 Area prior to excavation.
 - 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) per the MEPDES Discharge permit. Expanded monitoring is required for 10 months or until wastestream ends. All previous construction activities were completed prior in December and no new activities were started therefore expanded monitoring was not required in December.
 - The average daily flow through the GWTP was 37,922 gallons with 58,909 gallons of construction-related water.
 - Submitted the November 2017 NetDMR to DEP on Dec 8 and the Toxsheet and Effluent Mercury Test Report form to DEP on Dec 8, 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.

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- 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.
- Completed validation of October remediation and Site Perimeter monitoring data according to the Short-Term Comprehensive Monitoring Plan (CMP). Submitted final laboratory analytical reports and validated data in EGAD EDDs to MEDEP on December 14.

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.
- Submit a response to the TechLaw Data Validation review to DEP.
- 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)
 - Continue discussions with DEP to obtain approval of the Landfill 1 CMIP.
- Landfill 2 (CMI Closure Report Dec 21, 2017)
 - 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)
 - Complete the piping to the Chloropicrin Phase 1 SVE wells (4) and complete all electrical connections. Install CP system components and complete final tie ins.
 - Receive DEP approval of the RTC and Revised Plant Area Phase 1 Excavation Memo and begin implementation of the Phase 1 work.
 - Continue discussions with DEP regarding the Phase 2 approach in the Plant Area.
- 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 Closure Report Nov 15, 2017)
 - Continue to maintain erosion and sediment control measures.
- Northern Drainage Ditch (CMI Closure Report Nov 27, 2017)
 - Continue to maintain erosion and sediment control measures.
- Southern Cove (Final CMI Plan May 15, 2017; USACE Permit NAE-1999-02231 Apr 17, 2017; USACE Permit Modification May 3, 2017)
 - Submit the Southern Cove CMI Closure Report.
- Short-Term Comprehensive Monitoring Plan (Revised ST CMP Feb 24, 2017)
 - Conduct Short-Term CMP remediation monitoring in accordance with the approved plan.
 - Prepare 4th quarter 2017 Short-Term CMP monitoring data transmittal report.

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- Groundwater
 - Final Extraction System at Landfill 1 (Final Design GWES Oct 16, 2017):
 - Continue operation of extraction wells and reporting per the Revised Short-Term CMP
 - Receive DEP approval of the Final Design of the GW Extraction System.
 - Begin preparation of the Landfill 5 2017 annual report.
 - 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 December 2017 NetDMR and Toxsheet and Effluent Mercury Test Report to DEP.
 - Order and install five new flow meters for the groundwater extraction system. The new meters will be paddle wheel in design which will allow small particulate to pass and be trapped inside the plant bag filters. The previous flow meters frequently required removal and cleaning.
 - Install an on-site generator capability which will allow for immediate power during a grid outage.
 - 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

- The overall remediation schedule assumed the Landfill 1 Area would be completed by the summer 2018. If the current issues are not resolved in the near future this schedule will be delayed.
- The Plant Area Phase 1 work will begin in January however if a path forward for the Plant Area Phase 2 work (the remaining areas) cannot be reached by Spring 2018, remediation of the remaining areas at the Site will likely be delayed beyond 2018.

The quantity of waste shipped to the various disposal locations

- As of the end of **December 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.

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- **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 and off-site disposal is complete.**
 - A total of 307 railcars, containing 29,444 tons (TSDf weight) of non-hazardous Northern Drainage Ditch soils, have been shipped offsite.
 - 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 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 and off-site disposal is complete.**
 - A total of 441 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 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 listed waste soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **Southern Cove: Sediment removal is complete.**
 - In December 2017, 52 railcars of Southern Cove non-hazardous sediments were shipped off site.
 - A total of 120 railcars containing 11,733 tons (Site weight) of non-hazardous sediments to the Republic disposal facility in Niagara Falls, New York
- **General Debris**
 - No roll-offs of debris were shipped in December 2017.

Maine Hazardous Waste Tax

- The total Maine Hazardous Waste Tax **paid as of November 30, 2017 is \$789,039.**
 - The 2nd Quarter 2017 report shows 13,150.65 tons of hazardous soil disposed for a total fee of \$789,039 which was paid 9/28/17.
 - The 3rd Quarter 2017 report shows 14,125.95 tons of hazardous soil disposed for a total fee of \$847,557 which was paid 12/1/17.
 - The 4th Quarter 2017 report will be submitted by 1/31/17.

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 activities.