

July 11, 2019

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

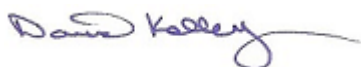
**Subject: Monthly Progress Report –June 2019  
Orrington Remediation Site  
Orrington, Maine**

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 June **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  
June 2019**

**Report Date July 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 was cancelled and instead a meeting was held with the DEP on June 5<sup>th</sup> in Augusta. Plant Area work plans were discussed along with GW monitoring in LF1. Additional other discussions took place during the month 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 completed final grading and Hydroseeding of LF1 on June 11, 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.)
  - Continued backfilling of Plant Area Phase I excavations
  - Performed waste characterization borings and samples for Plant Area Phase 2 soils
  - Submitted to Maine DEP information on preliminary waste characterization on
  - Submitted Plant Area CMIP Phase 2 – Preliminary Construction Memo to Maine DEP on June 18, 2019
  - Received DEP comments on Plant Area CMIP Phase 2- Preliminary Construction Memo June 28,2019
  - Received disapproval letter on 6/26/19 from DEP on Plant Area Phase 2 Rev 1 document dated March 29, 2019
  - Held a technical meeting at the site June 24, 2019 with DEP technical staff and consultant to discuss Plant Area sheet pile design and dewatering plans.
  - Held a conference call with Maine DEP on June 26,2019 to discuss Plant Area work plans
  - Continued chloropicrin groundwater performance monitoring
  - Continued operation of the SVE system

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- FRX mobilized on June 17, 2019 for The CP Phase II soil injections and SVE well installations
- Submitted May monthly SVE data to Maine DEP on June 17,2019
  
- 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 June 10. June monitoring included monthly and quarterly sampling of surface water, sediment, and groundwater in the vicinity of the Plant Area and Landfill 1 remediation areas, and quarterly monitoring according to the Interim Extraction System, Landfill 5, and Site Perimeter monitoring programs.
  
- 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, conduit and electrical installations and backfilling.
  - Continued coordination with Woodard & Curran treatment plant personnel for temporary groundwater extraction system (GWES) operation and planning for Final GWES.
  - Continued oversight for Final GWES construction
  - Excavated around damaged well B-315-O1, replaced broken PVC riser, and replaced locking steel protective casing on June 4, 2019.
  - Discussed with DEP the scope and schedule of Landfill 1 area GW Extraction System shut-down and “baseline” water quality monitoring event. Compiled information for DEP review for Landfill 1 area monitoring and transmitted to DEP on June 20 and 21. Landfill 1 area information included:

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- A revised table summarizing rationale of DEP-requested monitoring locations, updated with notes/response from Mallinckrodt.
- Location plan showing monitoring points scheduled for water quality monitoring.
- Draft logs for piezometers and extraction wells installed in the Landfill 1 area in fall 2018.
- Location and elevation surveys were conducted to stake out buried monitoring points MW-402-O1 and PZ14-10. Excavated points and added PVC riser and steel protective casing on June 26.
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Landfills 3-5 Bedrock Groundwater Testing Report and Extraction Design Plan (Design Plan) and transmitted to DEP on May 16. DEP comments received June 13, 2019
  - On-going communication and coordination with MEDEP for Landfills 3-5 area drilling programs.
  - Conducted investigations and testing according to the Landfills 3-5 Bedrock Groundwater Testing Report and Extraction Design Plan (Design Plan):
    - Bedrock core drilling of piezometer boreholes B-721 and B-723 during the week of June 3.
    - Borehole geophysical logging of B-721 and B-723 on June 13 and 14.
    - Reviewed drilling and geophysical data discussed packer testing zones with MEDEP during telephone conversations on June 24 and 27.
    - Prepared for packer sampling (to be conducted during the week of July 1) and air rotary drilling for EW-14, -15, and -16 (to be conducted during the week of July 8).
- 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.
  - The average daily flow through the GWTP was 47,169 gallons with 148,661 gallons of construction-related water.
  - Submitted the May 2019 NetDMR to DEP on June 3, 2019
  - Submitted the May 2019 Toxsheet on June 3, 2019
  - Re-piped building sump pump to accommodate future use that allows greater flow from the site.

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- Piped new GWES force main into the existing plant manifold to allow switching over to the new system once functional.
- Replaced burned out polymer injection pump
  
- 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.

**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.

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- 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
  
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.)
  - Submit Plant Area Phase 1A Scope of Work Memo and drawings for the Retort-01 excavation and Cell Building pre-trenching work to Maine DEP
  - Submit Plant Area Cell Building Workplans to Maine DEP
  - Maintain erosion and sediment controls.
  - Complete backfilling of Phase 1 excavations
  - Complete soil injections and additional SVE well installations
  - Respond to DEP comments as received for the Plant Area Phase 1A and Cell Building workplans
  - 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
  - Respond to DEP comments on the Q1 2019 Short-Term Comprehensive Monitoring Plan Report received 7-2-19
  
- Groundwater
  - Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
  - Continue construction of the Final GWES.
  - Conduct the baseline/shut-down monitoring water quality event in the Landfill 1 area.
  - Continue quarterly monitoring and reporting per the approved Short-Term CMP.
  
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Continue investigations and testing in the Landfills 3-5 Area according to the Design Plan:
    - Conduct packer sampling at B-721 and B-723.

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- Drill and install extraction well boreholes EW-14, -15, and -16.
- Conduct borehole geophysical logging and packer sampling at EW-14, -15, and -16
- 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 June 2019 NetDMR to MEDEP.
  - Complete and submit to MEDEP the June 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

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- 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.
- **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 June 2019, 34 railcars of Plant Area non-hazardous soils were shipped off site. A total of 285 railcars containing 27,870.35 tons (Site weight) of non-hazardous soils have been shipped from the Site:
    - 283 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 June 2019, a total of 21 railcars of Landfill 1 soils were shipped off site:
    - 21 rail cars containing 2,047.6 tons of Non-Hazardous soils
  - A total of 886 railcars containing Landfill 1 soils have been shipped off site to date.
    - 676 railcars containing 66,121.90 tons (Site weight) of non-hazardous soils
      - 676 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 20,506.1 tons (Site weight) of hazardous soils to the US Ecology Stablex disposal facility in Quebec, Canada
- **General Debris**
  - General Debris, NA
    - Total Mercury Sample A= NA
    - Total Mercury Sample B= **NA**



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- **GWTP Sludge**
  - NA

**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 March 31, 2019, the total paid under this program is \$3,118,368.00**

- The 2<sup>nd</sup> 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 3<sup>rd</sup> 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 4<sup>th</sup> 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 1<sup>st</sup> Quarter 2018 report lists 0 tons of hazardous soil transported and disposed off site.
- The 2<sup>nd</sup> 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 3<sup>rd</sup> 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 4<sup>th</sup> 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 March 31, 2019, 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.