

June 16, 2021

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

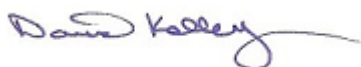
**Subject: Monthly Progress Report –May 2021  
Orrington Remediation Site  
Orrington, Maine**

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 2021** and is submitted on behalf of Mallinckrodt US LLC.

If you have questions regarding this report, please contact me at 315-447-5839

Sincerely,



David Kelley  
Remediation Program Manager

cc: (all electronic copies)  
Kelly Bay – Director, Orrington Town Library  
Chris Backman- Town Manager, Town of Orrington  
Alan Snell– Chairman of Board of Selectman, Town of Orrington  
Patricia Duft – Mallinckrodt US LLC  
Stacy Ladner– Maine DEP  
Carla Hopkins – Maine DEP

**MONTHLY PROGRESS REPORT  
ORRINGTON REMEDIATION SITE  
Orrington, Maine  
May 2021**

**Report Date June 16 , 2021**

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 – Maine DEP call was held on May 5, 2021. Status of work updates were provided.
- Additional other discussions took place during the month to discuss Site activities as needed.
- Continued inspection and maintenance of site erosion and stormwater controls.
- Paved Sump Maintenance:
  - Inspection Dates: Inspection Dates : Inspection Dates: Inspection Dates: Inspection Dates:
    - Inspection Dates: 05/03/21, 05/06/21, 05/12/21, 05/21/21, 05/27/21.
- Maintained the Log of quantities of any visual mercury recovered- log is attached.
- Disposal options for elemental Mercury have been evaluated and plans for disposal were discussed with Maine DEP. We are holding off on disposal until we complete work in the area west of the Cell building under the concrete and utility removal plan.
- The on-site Maine DEP oversight inspector continued to participate in daily and 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
- Stockpile operations continue to support excavation material and rail car loading
- 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)
  - no new activity
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.) and Plant Area CMIP - Phase 1A (Retort-01 Area and Cell Building Pre-Trenching) work plan July 9,2019. -DEP conditional approval on July 12, 2019
  - SVE system operation and groundwater monitoring
    - SVE System operating with one blower extracting from all 27 SVE wells.
    - Submitted an SVE Optimization memo to Maine DEP on 2/4/21
    - Provided an SVE system technical presentation and discussion with Maine DEP on May 11, 2021

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- Plant Area Cell Building CMI Plan Scoping memo and associated plans August 7, 2019. DEP conditional approval September 6, 2019.
    - Managed E&S controls maintenance.
    - Performed Dewatering as needed.
  - Plant Area CMI Plan:-Concrete and Utility removal Scope of work and associated Plans.
    - Submitted the Draft Plant Area Concrete and Utility Removal Scope of Work Memo and drawings to Maine DEP on 7/2/20. Received Maine DEP approval on 7/24/20.
      - Continued concrete and utility removal in the former TSSA 2 footprint and AST/Sludge Pit area.
      - Backfilling the approved excavation area west of the Cell Bldg.
      - Placing demarcation fabric and compacting soils.
      - Processing concrete/soils in TSSA 1 and TSSA 2.
      - Loadout soils/concrete to railcars.
      - Dewatering.
      - Maintenance of E&S controls.
    - Submitted A Draft Plant Area CMIP – Concrete and Utility Removal-Addendum ( CUR) to Maine DEP on April 1, 2021.
      - Received correspondence from Maine DEP regarding modifications to the CUR addendum on April 20 , 2021. Discussions are ongoing with Maine DEP.
- 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 (GW), the GW extraction system (GWES) and Landfill 5.
    - Conducted routine monitoring according to the Short-Term Comprehensive Monitoring Plan (CMP) during the week of May 10. May monitoring included monthly sampling of surface water and sediment in the vicinity of the Plant Area, and monthly monitoring of extraction wells in the Landfills 3-5 GWES.
  - Groundwater Final GW Extraction System (GWES) Plan Oct 16, 2017; DEP Approval Jan 9, 2018)
    - Following receipt of Maine DEP comments in the Final GWES design, submitted response and two revised drawings on Nov 6, 2018 and received Maine DEP approval on Nov 7, 2018 and began Final GWES construction on December 3, 2018.

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- Updated the force-main and electrical/communication conduit alignment and provided updated site plan to Maine DEP on January 16, 2019. Maine DEP provided approval on January 17, 2019.
- Continued management and maintenance of Final GWES
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Landfills 3-5 Bedrock Groundwater Testing Report and Extraction Design Plan (Design Plan) transmitted to Maine DEP on May 16, 2019. Maine DEP comments and conditional approval received June 13, 2019
  - Received Maine DEP approval on the Landfill 3-5 GWES design on September 25, 2020.
  - Began operation of Landfills 3-5 GWES on March 8, 2021
  - Continue management and maintenance of the LF 3-5 GWES
- 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 54,390 gallons with 208,449 gallons total from precipitation and construction related activities. During May shallow excavating continued with some attempts to backfill existing abandoned excavations.
  - Per the Woodard & Curran operator no TSS analysis was required in May
  
  - Total plant thru-put for May was 1,686,103 gallons.
  - Provided support to Anchor QEA for their work associated with compiling Site data.
  - Submitted April 2021 NetDMR to MEDEP on May 4, 2021.
  - Submitted the April 2021 Toxheets on May 3, 2021.
  - Began painting pump and mixer support structures.
  - Replaced compressor oil and filters.
  - Replaced leaky mechanical seal on influent pump P-2021.
  - Scrubbed and flushed all CoMag chambers.
  - Disinfected the raw water tanks, they began growing algae.
  - Began summer mowing after replacing oil, filters, and blades on the mower.
- Other Site Activities
  - Completed routine site maintenance activities

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- A power outage occurred on 5/23/21 at 12:55pm - Lasted approx. 1 hour.

**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 Maine DEP of exceedances in accordance with the updated notification protocol sent to Maine 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 Maine 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 Maine DEP and Mallinckrodt.
  - Received laboratory analytical data from April monitoring according to the Landfill 5 Detection and Assessment monitoring programs. Data were submitted to MEDEP following completion of internal quality control review.
  - Received laboratory analytical data from May monitoring according to the Plant Area remediation monitoring and Landfills 3-5 GWES monitoring programs. Data will be submitted to MEDEP following completion of 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 Maine DEP on remediation activities and pending submittals.
- Continue to include the on-site Maine DEP oversight inspector in daily and weekly construction meetings.

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- Continue to review the on-site Maine 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.
- Monitor restored areas
  
- 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)
  - Monitor and Maintain restored areas as needed
- Plant Area (Draft CMI Plan Feb 13, 2017; Phase 1 Excavation Memo Rev1 Jan 2, 2018; DEP Approval of Phase 1 Jan 9, 2018.) and Plant Area CMIP - Phase 1A (Retort-01 Area and Cell Building Pre-Trenching) DEP approval on July 12, 2019
  - Submit monthly SVE monitoring data
  - Continue SVE operation and implement changes per SVE Optimization memo based on Maine DEP discussion approval and comments.
- Plant Area Cell Building CMI Plan Scoping memo and associated plans August 7, 2019 :DEP conditional approval September 6, 2019
  - Maintain erosion and sediment controls.
  - Continue Ground water monitoring.
  - Conduct dewatering as needed.
  - Prepare Report summarizing work completed in the Plant Area for Phase 1, Phase 1A and The Cell building CMI.
- Plant Area CMI Plan:-Concrete and Utility removal Scope of work and associated Plans.
- Submitted the Draft Plant Area Concrete and Utility Removal Scope of Work Memo and drawings to Maine DEP on 7/2/20. Received Maine DEP approval on 7/24/20.
  - Continue concrete and utility removal west of the Cell Bldg.
  - Backfill as areas are available.
  - Loadout soils/concrete.
  - Dewatering.
  - Continue Technical discussions with Maine DEP on CUR addendum 1.
- 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)

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- 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)
  - Conduct monitoring according to the Short-Term CMP, including Landfills 3-5 GWES and Vicinity monitoring programs.
- Groundwater at Landfills 3,4,5 (PD WP Jul 19, 2018)
  - Continue fine-tuning of Landfills 3-5 GWES operation
- 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.
  - Complete routine maintenance activities.
  - Submit May 2021 NetDMR to MEDEP.
  - Complete and submit to MEDEP the May 2021 Toxscan Report
  - Continue to support CDM and Sevee & Maher with ongoing remedial site activities, as needed.
- Continue experimenting with rust removal from the stainless steel CoMag unit.
- Other Site Activities
  - Continue 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**

None

**As of the end of February 2021 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

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- 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.
- **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.
- **Landfill 1: Soil excavation and shipments Complete.**
  - A total of 886 railcars of Landfill 1 soils have been shipped off site.
    - 676 railcars containing 66,111.70 tons (TSDf weight) of non-hazardous Landfill 1 soils
      - 676 railcars to the Republic disposal facility in Niagara Falls, New York
    - 210 railcars containing 20,506.1 tons (TSDf weight) of hazardous Landfill 1 soils
      - 210 railcars to the US Ecology Stablex disposal facility in Quebec, Canada
- **Plant Area Phase 1: Soil excavation and shipments are complete**
  - A total of 303 railcars containing 29,490.73 tons (TSDf 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.
- **Plant area Phase 1 A and Cell Building Soils excavation and shipments are ongoing**



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- A Total of 707 rail cars of Plant Area Phase 1 A and Cell Building soils have been shipped off site to date
  - 222 railcars containing 21,520.28 tons of non- hazardous soils (TSDF weight)
    - 221 railcars to the Republic disposal facility in Niagara Falls, New York
    - 1 railcar 97 tons to US ecology Stablex disposal facility in Quebec
  - 485 railcars containing 47,249.75 tons of hazardous Soils (site weight)
    - 485 railcars to the US Ecology Stablex disposal facility in Quebec, Canada
- **Plant Area Concrete and Utility Removal (CUR) soil excavations and shipments are ongoing**
  - In May 55 rail cars of Plant Area CUR soils and concrete were shipped off Site.
    - 55 rail cars containing 5,358.90 tons Non-hazardous soils ( site weight)
    - 0 Railcars containing 0 tons total Phase IA/CUR Haz (site weight)
  - A Total of 282 Phase CUR Non-Haz Cars total shipped to date
    - 282 railcars containing 27,478.10 tons total ( site weight) Phase CUR Non-Haz shipped to date
      - 282 Railcars to the Republic disposal facility in Niagara Falls New York
  - A Total of 8 Phase IA/CUR Haz Cars shipped to date
    - 8 railcars containing 779.70 tons total ( site weight) Phase IA/CUR Haz shipped to date
      - 8 Railcars to US Ecology Stabelex disposal facility in Quebec Canada.
- **Elemental Mercury- see attached log.**
  - 218 Lbs. total recovered since project inception
  - 0 Lbs. recovered in April 2020
  - Shipments: NA
- **General Debris**
  - 05/25/21-AIM Recycle Metals-19,840 lbs.
    - Total mercury sample A=ND
    - Total mercury sample B=ND

**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. **Updated through Q1 2021. The total paid under this program is \$5,918,280.00 ( by rail) and \$ 1,800.00 (by Truck)**

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- 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
- The 1<sup>st</sup> and 2<sup>nd</sup> Quarter 2019 report lists 0 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$ 468,048.00
- The 3<sup>rd</sup> Quarter 2019 report lists 5,064.75tons of hazardous soils transported by rail and disposed of off site for a total fee of \$303,885.00/
- The 4<sup>th</sup> Quarter 2019 report lists 7,209.10 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$432,546.00
- The 1<sup>st</sup> Quarter 2020 report lists 9547.5 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$572,850.00.
- The 2<sup>nd</sup> quarter 2020 report lists 8087.1 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$485,226.00
- The 3<sup>rd</sup> Quarter 2020 report lists 7696.05 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$461,763.00
- The 4<sup>th</sup> Quarter 2020 report lists 8963.7 tons of hazardous soils transported by rail and disposed of off site for a total fee of \$537,822.00
- The 1<sup>st</sup> Quarter 2021 report lists 97 tons of hazardous soil transported by rail and disposed off site for a total fee of \$5,820.00

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, 2020, the total paid under this requirement is **\$55,892.26**

**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.

