

# Mallinckrodt US LLC

September 11, 2016

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

**Subject: Monthly Progress Report – August 2016  
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 from **August 1 – 30, 2016**, 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  
Audrey Snowden – Orrington Town Library  
Paul White – Town of Orrington  
David Wright – Maine DEP

**MONTHLY PROGRESS REPORT  
ORRINGTON REMEDIATION SITE  
Orrington, Maine  
August 2016**

**Report Date: September 11, 2016**

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 monthly conference call with DEP on August 3, 2016 to discuss site activities.
- Submitted the final Confirmation Sampling & DEP Split Sampling Protocol to DEP on August 8, 2016.
- Submitted a memo to DEP describing the reissue of certain chloropicrin data on August 10, 2016.
- 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, including quarterly calibration, and submitted weekly PAM reports to DEP.
- Continued operation of the on-site lab in compliance with DEP certification.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Permitting
  - No new information
- Facility Dismantling Plan
  - Began drafting the Completion Report for the dismantling work and the remediation of former leachfields and nitromethane building area.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP submitted April 12, 2016)
  - No new activity.
- Landfill Ridge Area (CMI Plan Revision 1 - Oct 28, 2015; DEP CAL - Dec 10, 2015)
  - CDM Smith maintained erosion and sediment control measures and continued watering grass and plants until fully established.
  - Continued preparation of the Landfill Ridge CMI Closure Report.
- Landfill 1
  - Continued testing associated with the Landfill 1 Geochemical Analysis and Leaching Study.
  - Began drafting the Landfill 1 Geochemical Analysis and Leaching Study Technical Memo.
- Landfill 2 (Draft CMI Plan, Jan 13; DEP Comments, May 26; RTC/Contractor WPs July 29, 2016)
  - Received DEP's comments and revised Confirmation Sampling Plan on August 12; submitted an alternate revised sampling plan and discussed with DEP on August 26.
- Landfills 3, 4 and 5 (CMI Plan – Revision 1, May 26, 2016; DEP Approval, July 12, 2016)
  - Continued removal of existing landfill cover soils
  - Completed construction of access road adjacent to Landfill's 4 and 5
  - Commenced removal of existing liners and placement of gas venting layer on LF5.
  - Commenced liner installation at LF5.
- Plant Area
  - Submitted TIC information requested by DEP for the Chloropicrin Treatability Study on August 2.
  - Began drafting the Chloropicrin Treatability Study Technical Memo which will include results and options for implementation.
  - Began developing the conceptual design to be presented to DEP at the meeting October 26, 2016.

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- Scrap Metal Yard (CMI Plan – Revision 1, June 22, 2016; DEP CAL, July 22, 2016)
  - Received DEP Approval of the revised Soil Reuse Plan with revised sampling requirements.
  - Continue excavation, confirmation sampling, and backfilling in accordance with the approved CMI Plan and the Confirmation Sampling & DEP Split Sampling Protocol.
- Southerly Stream (Draft CMI Plan, Jan 13; DEP Comments, Jun 22; RTC/Contractor WPs July 22)
  - No new activity.
- Northern Ditch (CMI Plan – Revision 1, August 23, 2016; DEP Approved upon submittal)
  - Received DEP's comments on the Contractor Work Plans on August 7, 2016 which included the comment that as long as all of DEP's comments and conditions on the CMI Plan and the Contractor Work Plans are addressed, the revised documents will be considered approved.
  - Submitted the Northern Ditch CMI Plan – Revision 1 to DEP. The CMI Plan – Revision 1 addressed all of DEP comments therefore this final CMIP is approved.
- Southern Cove (Draft CMI Plan, Jun 8, 2016; DEP Comments, August 26, 2016)
  - Received DEP's initial comments on the Draft Southern Cove CMI Plan on August 26, 2016 including the removal areas documented in the Revised Technical Addendum.
  - Discussed contractor proposals for the Southern Cove remediation.
  - Continued work on permit application materials which will be reviewed by multiple agencies.
- Groundwater
  - Submitted Second Quarter 2016 groundwater monitoring report to MEDEP on August 24, 2016.
  - Continued preparation of Ferry Road Current Conditions Assessment report.
  - Interim Extraction System (IES):
    - On August 3, 2016, the EW-3 pump and motor were replaced and brought back online to the recommended flow rate. The reason for replacement was age with no unusual conditions.
  - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
    - No new activity.
  - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
    - 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 monthly Outfall 001 effluent monitoring and reporting (volatiles, semivolatiles, herbicides and manganese) per the MEPDES permit requirements for a “new wastestream” to address the construction water (storm water from TSSA #1) related to the Landfill Ridge corrective measures implementation. Only those organics specified in the permit are reported as part of the monthly sampling and August was month 9 of the 10 consecutive month minimum requirement.
  - The average daily plant discharge flow was approximately 42,000 gallons per day, with approximately 84,000 total gallons of construction-related water treated in the GWTP this month.
  - Submitted the July 2016 NetDMR and July 2016 Toxsheet and Effluent Mercury Test Report forms to DEP on August 12, 2016.
  - Completed updates to the GWTP O&M Plan to reflect modifications to the GWTP. A copy of the revised plan is maintained on Site for MEDEP review upon request. Because the modifications are considered a minor equipment upgrade, submittal of the revised O&M Plan is not required.
  - Completed routine maintenance activities.

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- 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**

- Routine operational data is reported on the DMR per the MEPDES Permit.
- Air monitoring and meteorological data is collected continuously by the perimeter air monitoring system and stored in the computer system. Weekly reports are submitted to DEP.
- Quarterly groundwater monitoring data and Interim Extraction System monitoring data is reported in quarterly reports and EGAD EDDs to DEP. 2<sup>nd</sup> Quarter EGAD EDD submitted August 8, 2016.
- Water quality data collected from MW-708-B2 EGAD EDD submitted to DEP August 18, 2016.
- 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.

**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.**

- Hold monthly conference call with DEP on September 7, 2016 to discuss site activities.
- Submit Site wide Winter E&S Plan to DEP.
- Continue operation of the perimeter air monitoring system and meteorological station and submittal of weekly PAM reports to DEP.
- Continue operation of the on-site lab in compliance with DEP certification.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Permitting
  - No new information
- Facility Dismantling Plan
  - Submit the final Closure Report for the dismantling work and the remediation of former leachfields and nitromethane building area to DEP.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP April 12, 2016)
  - Receive DEP comments on the Draft Short-Term Comprehensive Monitoring Plan and discuss and/or respond as applicable. The Short-Term CMP includes monitoring of potential remediation impacts as well as ongoing groundwater monitoring, quarterly IES monitoring, and annual monitoring of Landfill 5. Until the revised groundwater monitoring components of this CMP are approved, the current groundwater monitoring plans will continue to be implemented as usual.
- Landfill Ridge Area (CMI Plan Revision 1, Oct 28, 2015; DEP CAL, Dec 10, 2015)
  - CDM Smith maintained erosion and sediment control measures and continued watering grass and plants until fully established.
  - Continue preparation of the Landfill Ridge CMI Closure Report. In accordance with discussions and agreement between DEP and Mallinckrodt, submittal will be deferred until November 2016.
- Landfill 1
  - Began drafting the Landfill 1 Geochemical Analysis and Leaching Study Technical Memo.

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- Landfill 2 ((Draft CMI Plan, Jan 13; DEP Comments, May 26; RTC/Contractor WPs July 29, 2016)
  - Receive DEP's comments on Mallinckrodt's revised sampling approach and a revised confirmation sampling plan and reach agreement with DEP on a final Landfill 2 Confirmation Sampling Plan.
  - Receive DEP comments on the Response to Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan.
  - Construction expected to start in late Fall 2016 and be completed in Spring 2017 with restoration immediately following.
- Landfills 3-5 (CMI Plan – Revision 1, May 26, 2016; DEP Approval July 12, 2016)
  - Continue removal of existing Landfill cover material on Landfill 3.
  - Complete removal of existing liner and complete gas venting layer on Landfills 3 and 4.
  - Install new GCL, Liner and Geocomposite on Landfills 3 and 4.
  - Commence placement of protective soil and topsoil layers on Landfills.
  - Construction expected to be complete in October 2016.
- Plant Area
  - Submit the Chloropicrin Treatability Study Technical Memo including results and options for implementation.
  - Continue development of conceptual design to present to DEP on October 26, 2016.
- Scrap Metal Yard (CMI Plan – Revision 1, June 22, 2016; DEP CAL, July 22, 2016)
  - Continue excavation, confirmation sampling, and backfilling in accordance with the approved CMI Plan and the Confirmation Sampling & DEP Split Sampling Protocol.
  - Construction expected to be complete in October with restoration completed in Spring 2017.
- Southerly Stream (Draft CMI Plan, Jan 13; DEP Comments, Jun 22; RTC/Contractor WPs July 22)
  - Receive DEP comments on the Response to Comments on the Draft CMI Plan, Draft Excavation and Restoration Work Plan and Draft Construction Water Management Work Plan.
- Northern Ditch (CMI Plan – Revision 1, August 23, 2016; DEP Approved upon submittal)
  - Perform pre-excavation confirmation samples in area of proposed sheet pile wall installation.
  - Submit Sheet Pile Design plan to DEP for approval.
  - Construction expected to be completed in December 2016 with restoration completed Spring 2017.
- Southern Cove (Draft CMI Plan, Jun 8, 2016)
  - Continue work on permit application materials which will be reviewed by multiple agencies.
  - Select the contractor to perform the Southern Cove remediation and begin discussions about the Contractor Work Plan requirements.
  - Submit a response to DEP's comments on the Draft Southern Cove CMIP.
  - Construction in the dry will start in Summer 2017 with the in-water work starting in accordance with timeframes established in permits from appropriate regulatory agencies.
- Groundwater
  - Conduct water quality sampling for groundwater background assessment.
  - Finalize and submit report summarizing Ferry Road Current Conditions data and observations.
  - Interim Extraction System (IES):
    - Continue operation of extractions wells and quarterly monitoring and reporting.
  - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
    - Respond to any DEP comments received and revise GW model as appropriate.

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- Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
  - Submit water elevations for Landfills 3, 4 and 5 to DEP.
  - Construct proposed piezometers MW-709-B1, MW-709-B2, MW-710-B1, and MW-710-B2, following MEDEP review and approval.
  - Resume drilling program for Landfills 3-5 bedrock groundwater assessment, following completion of Landfills 3-5 cap construction and site restoration
- Groundwater Treatment Plant (GWTP) Operation
  - Continue compliance sampling of Outfall 001 and 002 as described above.
  - Submit August 2016 NetDMR and Toxsheet and Effluent Mercury Test Report forms to DEP.
- 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**

- Specific submittal and due dates for various documents are included in the description above.
- No changes to the anticipated construction periods described above.

**The quantity of waste shipped to the various disposal locations**

- As of the end of August 2016:
  - Leach Field: Soil excavation and off-site disposal is complete.
    - A total of 14 railcars, containing 1379 tons 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.
    - 20 railcars of Landfill Ridge soils were shipping in August 2016.
    - A total of 564 railcars, containing over 55,000 tons of non-hazardous Landfill Ridge soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York or the Stablex disposal facility in Quebec, Canada.
  - Scrap Metal Yard:
    - 85 railcars of Scrap Metal Yard soils were shipped in August 2016.
    - A total of 85 railcars, containing over 8,000 tons of non-hazardous Scrap Metal Yard soils, have been shipped offsite to the Republic disposal facility in Niagara Falls, New York.

**Additional information regarding the progress of the work**

- None