

Mallinckrodt US LLC

April 8, 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 – March 2016
Orrington Remediation Site
Orrington, Maine**

Dear Mr. Swain:

This Monthly Progress Report is submitted to Maine Department of Environmental Protection (MEDEP) 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 MEDEP dated November 24, 2008. This Report covers the period from **March 1 – 31, 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
Director, Environmental Remediation

cc: Leslie Anderson – Maine DEP
Patricia Duft – Mallinckrodt US LLC
Audrey Snowden – Orrington Town Library
Paul White – Town of Orrington
David Wright – Maine DEP

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

Report Date: April 8, 2016

This Monthly Progress Report is submitted to the Maine Department of Environmental Protection (MEDEP) 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

- Continued operation of the perimeter air monitoring system and meteorological station and submitted weekly PAM reports to DEP.
- Received the MEDEP 2016 funding request for the Oversight Inspector at the Mallinckrodt site on March 16, 2016.
- Submitted information to MEDEP on March 24, 2016 describing the need for a second Temporary Soil Stockpile Area (TSSA) and associated construction details.
- Permitting
 - The Northern Long-Eared Bat (NLEB) Phase I Assessment was sent to USFWS on March 14, 2016.
- Facility Dismantling Plan
 - Identified Katahdin as an acceptable laboratory to analyze the Leach Field wells groundwater samples for trichloropropane with a detection limit of 0.013 ug/L.
- Current Conditions / Comprehensive Monitoring Plan
 - Submitted a Current Conditions Data Report to MEDEP on March 25, 2016 presenting data collected between July 2015 and January 2016 under the three assessment work plans.
 - Continued drafting the Short-Term Comprehensive Monitoring Plan (CMP), the purpose of which is to monitor any impacts related to implementation of the remedial activities. This Short-Term CMP will also include ongoing groundwater monitoring, quarterly IES monitoring, and annual monitoring of Landfill 5.
 - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
 - No new activity.
 - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
 - Submitted a protocol for the March 2016 sampling to MEDEP on March 7, 2016 in response to the CAL condition regarding purging deep bedrock wells.
 - Conducted groundwater sampling the week of March 14, 2016.
 - Manufacturing Area Current Conditions Assessment (MEDEP CAL Sept 25, 2015)
 - No new activity.
- Landfill Ridge Area (CMI Plan Revised, Oct 28, 2015; MEDEP CAL, Dec 10, 2015)
 - Submitted confirmation samples and request for approval to backfill or agreement that excavation areas are complete to MEDEP on March 15, 2016 for multiple excavation areas.
 - Information on the proposed Soil Reinforcement Mat, in response to the CAL requirement regarding slope stability, was sent to MEDEP on March 23, 2016. MEDEP approval was received on March 28, 2016.
 - Continued pumping storm water from collection area at the top of the downchute to the GWTP.
 - Continued management of temporary soil stockpile area including management of soils transported from excavation areas and loading onto lined railcars.

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

- Landfill 1
 - Submitted the Landfill 1 Geochemical Analysis and Leaching Study to MEDEP on March 25, 2016.
 - Continued developing the conceptual design for the removal of Landfill 1, including the evaluation of additional data such as geochemistry information, needed to address issues associated with the depth of excavation.
- Landfill 2 (Draft CMI Plan, Jan 13, 2016)
 - Received contractor bids to implement the Landfill 2 CMI Plan on March 30, 2016.
 - Began waste characterization sampling required for the off-site disposal facility.
- Landfills 3-5 (Draft CMI Plan, Aug 7, 2015; MEDEP Comments Feb 11, 2016)
 - Submitted the Response to comments on the Draft CMI Plan to MEDEP on March 28, 2016
 - Continued drafting contractor work plans for submittal to MEDEP.
- Plant Area
 - Submitted a description of the Chloropicrin Treatability Study to MEDEP on March 24, 2016.
 - Continued field work associated with the chloropicrin study.
- Scrap Metal Yard (Draft CMI Plan, Nov 9, 2015; MEDEP Comments Mar 24 & 25, 2016)
 - Submitted Revised Confirmation Sampling Plan to DEP on March 4, 2016 (only change from the February 26 submittal was a corrected date.)
 - Received MEDEP comments on the Draft CMI Plan on March 24 (general comments) and March 25 (confirmation sampling memo).
 - Began development of Contractor Work Plans.
- Southerly Stream (Draft CMI Plan, Jan 13, 2016)
 - Began waste characterization sampling required for the off-site disposal facility.
- Northern Ditch (Draft CMI Plan, Feb 5, 2016)
 - Received contractor bids to implement the Northern Drainage Ditch CMI Plan on March 30, 2016.
 - Began waste characterization sampling required for the off-site disposal facility.
- Southern Cove
 - Submitted a Response to MEDEP Comments and a Revised Technical Memo on Sediment Removal Area Delineation to MEDEP on March 25, 2016.
 - Continued developing the design and the Draft CMI Plan for the Southern Cove remedy.
- Groundwater
 - Submitted the 4th Quarter 2015 Monitoring Report to MEDEP on March 14, 2016.
 - Conducted 1st quarter 2016 quarterly groundwater monitoring during the weeks of March 14 and March 21, 2016.
 - Downloaded pressure transducer data from monitoring locations in the Landfill 1, Landfill 2, and Landfills 3-5 areas during the week of March 21, 2016.
 - Interim Extraction System (IES):
 - Conducted 1st quarter 2016 water quality sampling of Interim Extraction System extraction wells on March 18, 2016.
 - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
 - No new activity on February 22, 2016.
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (MEDEP CAL Sept 18, 2015)
 - Coordinated activities for the April 2016 field work.

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

- 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.
 - Collected weekly samples from Outfall 003 and the Southerly Stream and transported to Katahdin for analysis. Per previous protocol, all samples are analyzed for mercury using USEPA Method 245.1. If analytical results are ≤ 200 ng/L, the applicable sample will be re-analyzed using USEPA Method 1631.
 - 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 from the Landfill Ridge corrective measures implementation. Only those organics specified in the permit will be reported as part of the monthly sampling and March was month 4 of the 10 consecutive month minimum requirement.
 - Submitted a letter to MEDEP (Tanya Hovell) on March 29, 2016 that outlined Mallinckrodt’s understanding of increased monthly Outfall 001 effluent monitoring and reporting required for “new waste streams” per the Site’s MEPDES permit.
 - The average daily plant discharge flow was approximately 49,000 gallons per day.
 - Submitted the February 2016 Toxsheet and Effluent Mercury Test Report forms to MEDEP on March 9, 2016.
 - Submitted the February 2016 eDMR to MEDEP on March 9, 2016.
 - Completed routine maintenance activities including clean out of the SSIT vault.
- Other Site Activities
 - Completed routine 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 MEDEP.
- Quarterly groundwater monitoring data and Interim Extraction System monitoring data is reported in quarterly reports to MEDEP.
- Data submittals this month included:
 - Daily EGAD EDDs submitted to MEDEP via the automated database system.
 - Validated EGAD EDDs and laboratory reports submitted to MEDEP via the automated database system or the ftp site (for large laboratory reports) as they are available.
 - EGAD EDDs of validated groundwater quality data submitted to MEDEP on March 25.

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 MEDEP on April 6, 2016 to discuss site activities.
- Submit a Revised Master Remediation Schedule to MEDEP after discussion and agreement on the appropriate timeframes for MEDEP review of various submittals
- Submit a request to MEDEP for additional information related to the 2016 funding request for the Oversight Inspector received on March 16, 2016.

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

- Receive MEDEP approval or comments on the March 24, 2016 description of the second Temporary Soil Stockpile Area (TSSA).
- Continue operation of the perimeter air monitoring system and meteorological station.
- Receive MEDEP comments on the draft Logistics Work Plan (April 15, 2015).
- Permitting
 - Receive the USACE permit to clear trees in/near potential habitat for the NLEB on April 14, 2016, 30 days after the mandatory USFW review period ends.
 - Submit the Shoreland Permit Application to the Town of Orrington for the remaining remedial activities that intersect the Shoreland of the Penobscot River.
 - Receive a response to the Category 2 permit application for the Scrap Metal Yard, Landfill 2 and Southerly Stream corrective measures submitted to USACE.
- Facility Dismantling Plan
 - Collect samples from the Leach Field wells and submit for trichloropropane analyses.
- Current Conditions / Comprehensive Monitoring Plan
 - Submit the proposed Short-Term Comprehensive Monitoring Program for MEDEP review.
 - Landfill 2, Ferry Road, Manufacturing Area Current Conditions Assessments are complete.
 - Respond to any MEDEP comments on the Drilling Data Transmittal submitted February 26 or the Current Conditions Data Transmittal submitted March 25, 2016.
- Landfill Ridge Area (CMI Plan Revised, Oct 28, 2015; MEDEP CAL, Dec 10, 2015)
 - Receive MEDEP approval to backfill and/or agreement that excavation areas are complete for remaining excavation areas.
 - Continue management of temporary soil stockpile area including management of soils transported from excavation areas and loading onto lined railcars.
 - Begin final grading and restoration of the area per the approved CMI Plan.
- Landfill 1
 - Continue evaluating data needs and remedial design options for Landfill 1.
 - Begin field work for the Geochemical Analysis and Leaching Study.
- Landfill 2 (Draft CMI Plan, January 13, 2016)
 - Receive initial comments on the Draft CMI Plan from MEDEP (originally due March 16, 2016).
 - Continue evaluation of contractor bids to implement the remedy.
 - Evaluate and summarize waste characterization sampling results.
- Landfills 3-5 (Draft CMI Plan, Aug 7, 2015; MEDEP Comments Feb 11, 2016)
 - Receive MEDEP comments on Mallinckrodt's Response to Comments
 - Submit the Draft Contractor Work Plan for MEDEP review.
 - Revise the CMI Plan to incorporate MEDEP comments and responses.
- Plant Area
 - Continue conducting the chloropicrin treatability study.
- Scrap Metal Yard Draft CMI Plan (Nov 9, 2015, MEDEP Comment Mar 24 & 25, 2016)
 - Respond to MEDEP general comments (March 24) on the Draft CMI Plan.
 - Discuss the confirmation sampling plan comments (March 25) with MEDEP and ways in which to resolve the differences.

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

- Continue development of Draft Contractor Work Plans (Excavation and Restoration Plan and Construction Water Management Plan) for submittal to MEDEP.
- Southerly Stream (Draft CMI Plan, Jan 13, 2016)
 - Evaluate and summarize waste characterization sampling results.
- Northern Drainage Ditch (Draft CMI Plan, Feb 5, 2016)
 - Receive initial comments on the Draft CMI Plan from MEDEP (due March 16, 2016).
 - Continue evaluation of contractor bids to implement the remedy.
 - Evaluate and summarize waste characterization sampling results.
- Southern Cove
 - Receive DEP conditional approval of the Revised Technical Memo on Sediment Removal Areas.
 - Collect additional sediment sampling described in the RTC submittal.
 - Continued developing the design and the Draft CMI Plan for the Southern Cove remedy.
- Groundwater
 - Respond to any MEDEP comments on the Three-dimensional Groundwater Model report submitted on February 22, 2016.
 - Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
 - Three-dimensional Groundwater Model (submitted Feb 22, 2016)
 - Respond to MEDEP comments as applicable.
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (MEDEP CAL Sept 18, 2015)
 - Install two deep bedrock boreholes and conduct borehole geophysical logging.
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit letter to MEDEP requesting an increase in the permitted monthly average flow from the facility.
 - Submit March 2016 eDMR to MEDEP.
 - Submit the March 2016 Toxsheet and Effluent Mercury Test Report forms to MEDEP.
- Other Site Activities
 - Complete routine 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 Draft CMI Plan for the Southern Cove remedy was originally scheduled to be submitted to MEDEP on March 28, 2016 however due to delays reaching agreement on the removal areas, this CMI Plan will likely be submitted in May 2016.
- MEDEP comments on the Landfills 3,4,5 Cap CMI Plan were due October 28, 2015 and received on February 11, 2016. Because CDM Smith is implementing this CMI, the general schedule to begin construction in summer is expected to be maintained.
- The MEDEP initial comments on the Scrap Metal Yard CMI Plan were due January 15, 2016 and received March 24, 2016. Assuming Mallinckrodt and MEDEP reach agreement on the confirmation sampling plan and other comments, and other submittals remain on track, construction will start in early July instead of late Spring.
- The Draft Southerly Stream and Landfill 2 CMI Plans were submitted to MEDEP on January 13, 2016 and MEDEP comments were due March 16, 2016.

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

- The Draft Northern Ditch CMI Plan was submitted to MEDEP on February 6, 2016 instead of January 12, 2016 in order to incorporate data from additional step-out boring locations collected in early 2016. The due date for MEDEP comments on this CMI Plan was moved forward to early April to reflect this delay.

The quantity of waste shipped to the various disposal locations

- At the end of March 2016, over 28,500 tons of soil from the Landfill Ridge Area has been shipped off-site in 290 rail cars to the Republic disposal facility in Niagara Falls, New York and the Stablex disposal facility in Canada.

Additional information regarding the progress of the work

- None.