

November 9, 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 – October 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 **October 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
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
October 2016**

Report Date: November 9, 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 October 5, 2016 to discuss site activities.
- 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 (Upland)
 - Submitted the Notice of Termination for the Construction General Permit for the Landfill Ridge work to DEP on Oct 17, 2016.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP submitted Apr 12, 2016)
 - No new activity. 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 plan is approved, the current groundwater monitoring programs continue to be implemented.
- Landfill Ridge Area (CMI Plan Rev 1 - Oct 28, 2015; DEP Conditional Approval - Dec 10, 2015)
 - Continued to maintain erosion and sediment control measures.
 - Continued preparation of the Landfill Ridge CMI Closure Report.
- Landfill 1
 - Submitted the Landfill 1 Geochemical Analysis and Leaching Study Technical Memo to DEP on Oct 13, 2016.
 - Began preparing the conceptual design for the Landfill 1 remedy.
- Landfill 2 (CMI Plan – Rev 1, Oct 7, 2016)
 - Submitted the Landfill 2 Corrective Measures Implementation Plan – Revision 1 to DEP on Oct 7, 2016, including revised Contractor Work Plans and DEP approved Confirmation Sampling Plan.
 - Received DEP's final determination of the waste classification of the materials to be excavated and disposed from Landfill 2 on Oct 17, 2016.
- Landfills 3, 4 and 5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval, Jul 12, 2016)
 - Completed capping of Landfills 3, 4 and 5.
- Plant Area
 - Discussed the in situ chloropicrin treatability options with DEP on October 26, 2016.
 - Presented the conceptual design for the Plant Area to DEP on October 26, 2016.
 - Continued developing the Draft CMIP (design) which will be discussed with DEP at a meeting on December 14 and submitted to DEP shortly thereafter.

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

- Scrap Metal Yard (CMI Plan – Rev 1, Jun 22, 2016; DEP Conditional Approval, Jul 22, 2016)
 - Completed excavation, confirmation sampling, and backfilling in accordance with the approved CMI Plan and the Confirmation Sampling & DEP Split Sampling Protocol.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016)
 - Submitted the Southerly Stream Corrective Measures Implementation Plan – Revision to DEP on Oct 14, 2016, including revised Contractor Work Plans and DEP approved Confirmation Sampling Plan.
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Addendum 1 Oct 27, 2016;)
 - Received DEP comments on the CMIP Addendum 1 Excavation Support Submittal on Oct 11 and provided a response to comments and revised documents on Oct 27, 2016.
 - Began pre-construction activities including tree cutting and equipment mobilization.
- Southern Cove (Draft CMI Plan, Jun 8, 2016; DEP Comments, Aug 26 & Sept 27, 2016)
 - Held a conference call with DEP on Oct 14, 2016 to discuss confirmation sampling issues and further discussed this topic at the Oct 26 meeting.
 - Provided information on the underlying materials in the Southern Cove to DEP on Oct 24, 2016.
 - Followed up with DMR on Oct 9, 2016 to inquire if the agency had any comments on the Draft Southern Cove CMIP previously submitted to them on Jun 17, 2016. The Water Quality and Fish Monitoring Plan (Appendix D of the CMIP) was again included in the Oct 9 email.
 - Followed up with DIFW on Oct 12, 2016 to inquire if the agency required any additional information related to the work in the Southern Cove. (DIFW was initially notified of the project on Apr 7, 2015 and they responded on Jun 24, 2015 with general comments about the area habitat but nothing project specific.)
 - Continued discussions with USACE regarding the submittal of the Individual Permit Application, including the biological assessment that will be forwarded to NMFS and USFWS.
 - Began development of detailed contractor work plans.
 - Continued preparing responses to DEP comments on the Draft Southern Cove CMI Plan.
- Groundwater
 - Continued preparation of Ferry Road Current Conditions Assessment report.
 - Decommissioned monitoring wells B-320-O2 and B-320-O3 and piezometer PZ14-08 in the area of the North Ditch remediation area.
 - Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
 - 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)
 - Drilled five shallow bedrock boreholes according to the Work Plan, logged rock cores, selected screen intervals, and installed piezometers in each borehole the week of Oct 17, 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.

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

- Continued monthly Outfall 001 effluent monitoring and reporting (volatiles, semivolatiles, herbicides and manganese) per the MEPDES permit requirements for a “new wastestream” to address additional water being treated in the GWTP from remedial construction activities.
 - The 10-month monitoring requirement was met for the Landfill Ridge remedial area.
 - The Scrap Metal Yard work began in August and October was month 3 of the monitoring required for this area.
- The average daily plant discharge flow was approximately 47,000 gallons per day, with approximately 230,000 total gallons of construction-related water and approximately 2,200 gallons of drill cutting water treated in the GWTP this month.
- Built the pump assembly for the new interceptor vault at the former sodium chlorate building area.
- Completed periodic maintenance activities including cleaning out exterior raw water tank, generating filter press cake (12 cubic yards), and testing heat tracing for winter.
- Submitted the September 2016 NetDMR and Toxsheet and Effluent Mercury Test Report forms to DEP on Oct 14, 2016.
- 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

- 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.
- 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 November 2, 2016 to discuss site activities.
- Submit an update to the master schedule for the Orrington Remediation Site to DEP.
- Respond to comments and submit a Revised Winter Erosion & Sedimentation Control Plan 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 DEP certification.
- Continued stockpile management of excavated materials and loading railcars for off-site shipment.
- Permitting (Upland)
 - No activity planned
- Facility Dismantling Plan
 - This work is complete.
- Short-Term Comprehensive Monitoring Plan (Draft ST CMP April 12, 2016)
 - Receive DEP comments on the Draft Short-Term CMP and respond as applicable.

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
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October 2016**

- Landfill Ridge Area (CMI Plan Rev 1, Oct 28, 2015; DEP CAL, Dec 10, 2015)
 - Maintain erosion and sediment control measures.
 - Continue preparation of the Landfill Ridge CMI Closure Report. In accordance with discussions and agreement between DEP and Mallinckrodt, submittal is deferred until November 2016.
- Landfill 1
 - Continue preparing the conceptual design for the Landfill 1 remedy.
- Landfill 2 (CMI Plan – Rev 1, Oct 7, 2016)
 - Submit CMIP Addendum 1 to DEP with revised CMIP drawings specifying excavation areas to be disposed as listed waste and data tables providing waste characterization data.
 - Construction is expected to start in November 2016 with final restoration in May 2017.
- Landfills 3-5 (CMI Plan – Rev 1, May 26, 2016; DEP Approval July 12, 2016)
 - Complete placement of topsoil, seed and erosion control blankets on all three landfills and implement winter erosion control measures and maintenance of covers.
 - Final restoration should be completed in Spring 2017.
- Plant Area
 - Continued developing the Draft CMIP (design) which will be discussed with DEP at a meeting on December 14 and submitted to DEP on December 16, 2016.
- Scrap Metal Yard (CMI Plan – Rev 1, June 22, 2016; DEP CAL, July 22, 2016)
 - Commence overwinter stabilization of completed areas.
 - Final restoration should be completed in Spring 2017.
- Southerly Stream (CMI Plan – Rev 1, Oct 14, 2016)
 - Construction expected to start in November 2016 and be completed in May 2017 including final restoration of both the northern and southern segments of the Southerly Stream.
- Northern Drainage Ditch (CMI Plan – Rev 1, Aug 23, 2016; DEP Approved upon submittal; Addendum 1 Oct 27, 2016;)
 - Receive DEP approval of the response to comments on the CMIP Addendum 1 Excavation Support Submittal and revised documents.
 - Begin construction of the remedial action at the Northern Drainage Ditch.
 - Construction and final restoration is expected to be completed in May 2017.
- Southern Cove (Draft CMI Plan, Jun 8, 2016; DEP Comments, Aug 26 & Sept 27, 2016)
 - Hold a conference call with DEP on Nov 17, 2016 to further discuss confirmation sampling issues.
 - Submit the permit application to USACE including the biological assessment which will be forwarded to NMFS and USFWS for review.
 - Submit the contractor Construction Plan and Environmental Monitoring Plan to DEP.
 - Continue preparing responses to DEP comments on the Draft Southern Cove CMI Plan.
 - Construction in the dry is expected to start late Summer 2017. The start date for in-water work will be established in agency permits and may be as late as September or October 2017.
- Groundwater
 - Protect MW-402-O1, MW-602-O1, PZ14-09, and PZ14-10 in the North Ditch excavation area by converting to flush mount wells with valve covers to withstand truck traffic.
 - Install water table piezometer on the bedrock ridge west of Landfill 3, as discussed with and approved by MEDEP on Oct 26, 2016.
 - Finalize and submit report summarizing Ferry Road Current Conditions data and observations.

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- Interim Extraction System (IES):
 - Continue operation of extractions wells and quarterly monitoring and reporting.
- Three-dimensional Groundwater Model (Feb 22, 2016)
 - Respond to any DEP comments received and revise GW model as appropriate.
- Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (DEP CAL Sept 18, 2015)
 - Install MW-709-B2 and MW-710-B2 and piezometers MW-709-B1 and MW-710-B1, as approved by MEDEP on Oct 27, 2016.
- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit October 2016 NetDMR and Toxsheet and Effluent Mercury Test Report forms to DEP.
 - Provide oversight of the interceptor vault installation.
 - Continue winter preparation 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

- 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

- Two roll-offs of general debris were shipped off site to Juniper Ridge Casella landfill:
 - 4,420lbs, mercury concentrations in both representative samples was non-detect
 - 8,120lbs, mercury concentrations in both representative samples was non-detect.
- As of the end of October 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.
 - A total of 564 railcars, containing over 55,158 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:
 - 102 railcars of Scrap Metal Yard soils were shipped in October 2016.
 - A total of 304 railcars, containing over 29,000 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