

November 4, 2015

Ms. Stacy Ladner
Unit Manager
Division of Oil & Hazardous Waste Facility Regulation
Bureau of Remediation and Waste Management
Maine Department of Environmental Protection
17 State House Station
Augusta ME 04333

**Subject: Monthly Progress Report – October 2015
Orrington Remediation Site
Orrington, Maine**

Dear Ms. Ladner:

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 **October 1 – 31, 2015**, 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: Patricia Duft – Mallinckrodt US LLC
Melanie Loyzim - Maine Department of Environmental Protection
Paul White – Town of Orrington
Audrey Snowden – Orrington Town Library

**MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
October 2015**

Report Date: November 4, 2015

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.

1. A discussion of all tasks and actions completed during the reporting period toward achieving compliance with the Order

- Met with the MEDEP on October 29, 2015 to discuss various site activities described in more details below.
- Submitted additional data analysis and proposed a resolution to the DMA/Alpha comparison issue in an email to DEP dated October 2, 2015.
- Continued construction of the permanent air monitoring stations (PAMS) at locations approved by MEDEP (two are complete) as well as the new weather station.
- Initiated background air monitoring using the temporary air monitoring stations (TAMS) in the PAMS locations.
- Continued air monitoring (Lumex readings) in accordance with the approved Phase 7 air monitoring plan.
- Submitted a response to MEDEP comments and a Revised Perimeter Air Monitoring Plan (PAMP) for MEDEP approval on October 30, 2015.
- Held a conference call on October 22, 2015 with CDM Smith, Geosyntec and Woodard & Curran to discuss remediation contact water and ensure all parties are aware of GWTP operating requirements, capacities, restrictions and plans for excess water.
- Completed calibration of the rail scale on October 1, 2105.
- Permitting
 - Met with USACE, NMFS and DEP (NRPA) on October 27, 2015 to discuss ESA permitting requirements, and timing of submittals for the Southern Cove remedial work.
- Facility Dismantling Plan
 - The temporary wells in the Leach Field area have been sampled for all required parameters.
- Current Conditions / Comprehensive Monitoring Plan
 - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
 - Downloaded pressure transducers from staff gauge locations on October 19, 2015.
 - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
 - Collected groundwater samples for field density measurements.
 - Reviewed potential drilling locations for overburden/bedrock monitoring well pairs between Landfill 1 and newly-installed MW-702-O1.
 - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
 - Continued QC review of laboratory analytical reports and EDDs from the comprehensive groundwater quality monitoring round conducted between July 27 and August 7, 2015.
 - Observed and logged drilling and installation of SB-PA-22, -24, -25, and -26 on October 5, and GB-PA-07 on October 27, 2015 in accordance with MEDEP condition #15 in the conditional approval email.
 - Collected two rounds of non-storm surface water samples at locations in the Southerly Stream, chlorate building underdrain, and Northern Drainage Ditch on October 21 and 27, 2015.

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- Landfill Ridge Area
 - Received MEDEP Memo on confirmation sampling at the Landfill Ridge based on the Visual Sample Plan (VSP) program on October 28, 2015.
 - Submitted the Landfill Ridge CMI Plan - Revision 1 including the Issued for Construction Drawings Rev1, Excavation and Restoration Work Plan and Construction Water Management Work Plan to MEDEP on October 28, 2015.
 - Completed clearing of trees for access roads and within work area limits.
 - Submitted Waste Profile and Waste Characterization Analytical data for approval to the disposal facility on October 20, 2015.
 - Wells within the work area were abandoned in accordance with MEDEP protocols.
- Landfills 1-2
 - Continued evaluation of pre-design data collected per the Pre-Design Phase II Work Plan.
- Landfills 3-5
 - No update
- Plant Area
 - Received MEDEP conditional approval of the Revised Plant Area Pre-Design Investigation Work Plan on October 22, 2015.
 - Completed all borings in the Scrap Metal Yard area, continued borings in the Southerly Stream and North Ditch, and received MEDEP approval for step-out locations in the North Ditch.
 - Continued Stage 1 borings in the Plant Area and agreed to add additional borings in areas shown in the figures attached to MEDEP's conditional approval of the Work Plan.
- Southern Cove
 - Completed hydrodynamic model to support turbidity control design
- Groundwater
 - Interim Extraction System:
 - Collected grab groundwater samples from the five extraction wells on October 19, 2015 and submitted for laboratory analysis of mercury, chloropicrin, and chloride.
 - Downloaded and reviewed pressure transducer data, and assessed water level elevations during operation of the interim extraction well system.
 - Three-dimensional Groundwater Model:
 - Developed piezometers PZ15-04 through -07.
 - Surveyed location and elevation of newly-installed piezometer PZ15-11, and location and elevation of chlorate building underdrain outlet (into a catch basin at the northern corner of the former building).
 - Continued updates to the three-dimensional groundwater model according to action items established during the July 20 meeting
 - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (MEDEP CAL Sept 18, 2015)
 - Installed data logging pressure transducers in several monitoring wells and piezometers in and around Landfills 3, 4, and 5.
- Groundwater Treatment Plant (GWTP) Operation
 - Submitted the September 2015 eDMR to MEDEP on October 14, 2015.
 - 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.

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**Orrington, Maine
October 2015**

- Collected additional samples on October 6, 2015 for volatiles, semivolatiles, herbicides, and manganese in compliance with the “new waste stream” requirements in the MEPDES permit. Samples were sent to Katahdin for analysis. This is the 10th month of the minimum 10 months required under the new wastestream sampling requirements. Confirmed with MEDEP (Tanya Hovell) that the 10-month permit-specified monitoring requirement was satisfied. As such, increased monthly Outfall 001 effluent monitoring and reporting will cease in November. The data is currently under review by MEDEP (Gregg Wood).
 - 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.
 - Submitted the September 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP on October 15, 2015.
 - Purchased equipment to run on-site TSS process check analyses and installed a 2-inch double contained hose connection and control valve for direct discharge of metered and totalized excavation dewatering flows to the GWTP raw and/or silica tanks.
 - Completed routine maintenance activities, including cold weather preparations.
 - Other Site Activities
 - Completed pavement sweeping on October 7, 2015.
 - Collected weather station data.
 - Completed routine maintenance activities
2. **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. This includes the additional analyses for “new waste streams” as described above.
 - Weekly air monitoring data (Lumex readings and current air monitoring stations) are provided to MEDEP via email.
 - Monthly weather station data is maintained electronically and included with this monthly report.
 - Weekly Southerly Stream and Outfall 003 mercury data is included with this monthly report.
 - Quarterly groundwater monitoring data is reported in the quarterly groundwater reports and/or the annual Landfill 5 monitoring report.
 - Data submittals this month included:
 - Validated EDDs to MEDEP for the VOC data from the comprehensive groundwater quality monitoring round.
 - 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.
 - Revised DMA Laboratory Reports and Revised EGAD EDDs for previously submitted data to address MEDEP’s comments in emails dated October 1 and October 6, 2015.
3. **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 November 4, 2015 to discuss site activities.
 - Meet with DEP on November 16, 2015 to discuss various groundwater issues.
 - Attend a meeting with the City of Brewer to discuss questions about rail and truck transport from the Site.

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- Complete installation of the perimeter air monitoring system including physical monitoring stations (PAMS), associated equipment and SCADA system.
- If applicable, review and discuss MEDEP comments on the Logistics Work Plan.
- Permitting
 - Continue Biological Evaluation and permit applications for the Southern Cove and Upland Areas as applicable.
- Facility Dismantling Plan
 - Review groundwater results from the temporary wells in the Leach Field area. If results are less than the MPS the wells will be abandoned. If not, next steps will be coordinated with MEDEP.
- Current Conditions / Comprehensive Monitoring Plan
 - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
 - Conduct initial sampling of newly-installed Landfill 2 monitoring wells.
 - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
 - Complete development of Ferry Road bedrock monitoring wells.
 - Conduct initial sampling of Ferry Road area wells, including newly-installed overburden and bedrock monitoring wells.
 - Complete groundwater density measurements of monitoring wells in the Ferry Road Plant Areas.
 - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
 - Conduct two storm-event surface water sampling rounds and sediment sampling.
 - With MEDEP's approval, begin drilling MW-707-O1/B1 and MW-708-O1/B1, as shown in the email to MEDEP dated October 22, 2015.
- Landfill Ridge Area
 - Submit a revised confirmation sampling plan for the Landfill Ridge area to MEDEP incorporating MEDEP's Visual Sample Plan (VSP) results with modifications, and reach agreement on a final confirmation sampling plan.
 - Submit a proposed split sampling protocol to MEDEP for review and reach agreement.
 - Receive MEDEP approval of the Landfill Ridge Corrective Measures Implementation Plan – Revision 1 and begin remedy implementation.
- Landfills 1-2
 - Continue development of the remedial design for Landfill 2 and begin evaluating remedial design options for Landfill 1.
- Landfills 3-5
 - Review and discuss MEDEP comments on the Landfill 3-5 Cap CMI Plan.
- Plant Area
 - Continue pre-design activities in the Southerly Stream and North Ditch and the Plant Area.
 - Submit the Draft Scrap Metal Yard CMI Plan to MEDEP for initial comments.
- Southern Cove
 - Submit a Sediment Removal Area Delineation Technical Memorandum to MEDEP to outline the proposed removal areas and the technical basis for each.
 - Receive comments from MEDEP on the Sediment Removal Area Delineation Technical Memorandum and finalize the dredge prism (removal areas).
 - Continue preparation of design documents and begin drawings and specifications
- Groundwater
 - Conduct sampling and water elevation monitoring of the Interim Extraction System.
 - Continue updates to three-dimensional groundwater model.

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- Groundwater Treatment Plant (GWTP) Operation
 - Continue compliance sampling of Outfall 001 and 002 as described above.
 - Submit October 2015 eDMR to MEDEP.
 - Submit the October 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP.
 - Initiate annual review of the GWTP O&M Manual, Health & Safety Plan (including Hazardous Waste Contingency Plan elements), and Mutual Aid Letters to applicable emergency response agencies.
 - Other Site Activities
 - Dispose of drums and one roll-off of Investigation Derived Waste (IDW) by November 17, 2015.
 - Complete routine maintenance activities.
 - Collect weather station data.
- 4. 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**
- A revised master schedule was submitted to MEDEP on October 14, 2015.
- 5. The quantity of waste shipped to the various disposal locations**
- None
- 6. Additional information regarding the progress of the work**
- None