December 8, 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 – November 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 **November 1 – 30, 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

Kathy Zeigler
Director, Environmental Remediation

cc: Patricia Duft – Mallinckrodt US LLC
Paul White – Town of Orrington
Audrey Snowden – Orrington Town Library

MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
Orrington, Maine
November 2015

Report Date: December 8, 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 November 16, 2015 to discuss a variety of groundwater related issues.
   - Attended a meeting with the City of Brewer on November 19, 2015 to discuss questions about rail and truck transport form the Site.
   - Contacted PERC to set up a site visit to provide an update on site activities and the perimeter air monitoring plan, and to obtain information on their two outfalls and what impact they may have on the Southern Cove remedial design.
   - Completed construction of the four permanent air monitoring stations (PAMS) at locations approved by MEDEP, the two temporary air monitoring stations (TAMS), the new weather station, associated equipment and the SCADA system.
   - Continued the background air monitoring study 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 revised PAMP Table 1 to MEDEP on November 17 and received MEDEP comments on the Revised Perimeter Air Monitoring Plan (PAMP) on November 24, 2015.
   - <u>Permitting</u>
     - Continue drafting biological evaluation and permit applications for the Southern Cove and Upland Areas.
   - <u>Facility Dismantling Plan</u>
     - Began preparation of the data package for the temporary wells in the Leach Field area..
   - <u>Current Conditions / Comprehensive Monitoring Plan</u>
     - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
       - Completed development of newly-installed overburden and bedrock monitoring wells.
       - Collected water quality samples from newly-installed monitoring wells and downloaded pressure transducers from staff gauge locations the week of November 16.
     - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
       - Collected groundwater samples for field density measurements.
       - Completed development of newly-installed bedrock monitoring wells.
       - Collected water quality samples from newly-installed monitoring wells and other monitoring points the week of November 16.
       - Following receipt of approval from MEDEP, drilled bedrock borehole and installed bedrock monitoring well MW-707-B1 during the week of November 16.
     - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
       - Collected two rounds of storm-event surface water monitoring on November 12 and 13 and submitted samples for total mercury, VOCs, chloropicrin, and PCBs (select locations).
       - Collected sediment samples from the Southerly Stream and Northern Drainage ditch on November 16 and 17 and submitted samples for total mercury, chloropicrin and PCBs (select locations).

- Completed validation of comprehensive groundwater quality analytical data and discussed data deliverables with MEDEP.

- Landfill Ridge Area
  - Submitted a revised Confirmation Sampling Plan (Drawing 6) for the Landfill Ridge area incorporating MEDEP's Visual Sample Plan (VSP) results with modifications, to MEDEP on November 5, held a conference call and exchanged emails with MEDEP regarding this plan on November 18, submitted a revised sampling plan November 19, exchanged additional emails with MEDEP on November 24 and submitted a final Confirmation Sampling Plan to MEDEP on November 30, 2015.
  - Submitted a proposed Split Sampling Protocol to MEDEP for review on November 5, received comments on November 18, submitted revised language regarding backfilling on November 24, received MEDEP approval on December 2 and submitted the final Confirmation and Split Sampling Protocol for the LF Ridge Area on December 2, 2015.
  - Received partial approval of the Landfill Ridge CMI Plan (Staging Area only) from MEDEP on November 19 and began excavation in this area on November 19, 2015.
- Landfill 1
  - Continued evaluation of pre-design data collected per the Pre-Design Phase II Work Plan.
  - Began drafting a conceptual design for the removal of Landfill 1.
- Landfill 2
  - Continued preparing the Draft CMI Plan for the removal of Landfill 2.
- Landfills 3-5
  - Sent out Requests for Bid for the geosynthetic liner installation on November 25, 2015.
- Plant Area (MEDEP CAL Pre-Design WP October 22, 2015)
  - Continued borings in the Southerly Stream and North Ditch, and received MEDEP approval for step-out locations in the North Ditch.
  - Continued Stage 1 and Stage 2 borings in the Plant Area.
  - Began developing the design and the Draft CMI Plan for the Southerly Stream remedy.
  - Began developing the design and the Draft CMI Plan for the North Ditch remedy.
  - Submitted the Draft Scrap Metal Yard CMI Plan to MEDEP on November 9, 2015.
  - Sent out Requests for Bid for the Scrap Metal Yard remedy to remediation contractors on November 24, 2015.
- *Southern Cove*
  - Submitted the Sediment Removal Area Delineation Technical Memorandum to MEDEP on November 1, 2015 which describes the proposed removal areas in the Southern Cove and the technical basis for each.
  - Based on comments received from the USACE and NMFS in the October 27 meeting, revised the schedule for the Southern Cove remedy and submitted the revised schedule to MEDEP on November 4, 2015.
  - Calculated estimated loadings to support the turbidity control structure design.
  - Continued developing the design and the Draft CMI Plan for the Southern Cove remedy.
- Groundwater
  - Interim Extraction System:
    - Collected grab groundwater samples from the five extraction wells on November 16, 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.
    - Submitted 3rd quarter extraction system operations report

- Three-dimensional Groundwater Model:
  - Continued updates to the three-dimensional groundwater model according to action items established during the July 20 meeting and began drafting model report.
- Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (MEDEP CAL Sept 18, 2015)
  - Downloaded data logging pressure transducers deployed in monitoring wells and piezometers in and around Landfills 3, 4, and 5.

- Groundwater Treatment Plant (GWTP) Operation
  - Submitted the October 2015 eDMR to MEDEP on November 10, 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.
  - 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 $\leq$ 200 ng/L, the applicable sample will be re-analyzed using USEPA Method 1631.
  - Confirmed with MEDEP (Tanya Hovell) that the 10-month permit-specified monitoring requirement for "new waste streams" was satisfied and this data is currently under review by MEDEP (Gregg Wood).
  - Shipped off-site four cubic yards from one Mersorb and one GAC bed and four cubic yards of GWTP sludge to US Ecology's hazardous waste disposal facility in Michigan.
  - Submitted the October 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP on November 12, 2015.
  - Completed routine maintenance activities, including cold weather preparations.
- Other Site Activities
  - 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.
   - Weekly air monitoring data (Lumex readings and current air monitoring stations) are provided to MEDEP via email.
   - Air monitoring data from the new perimeter air monitoring stations is recorded and stored in the computerized data acquisition system, and meteorological data is also collected and stored in this same system. The format for a weekly report for this data is being developed and once that is finalized, weekly air monitoring reports will be sent to DEP.
   - Quarterly groundwater monitoring data is reported in the quarterly groundwater reports and/or the annual Landfill 5 monitoring report.
   - 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.

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 December 2, 2015 to discuss site activities.
   - Meet with DEP on December 15, 2015 to discuss various Site issues.

MONTHLY PROGRESS REPORT
ORRINGTON REMEDIATION SITE
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November 2015

- Review and discuss MEDEP comments on the Logistics Work Plan, submitted to MEDEP on April 15, 2015.
- Meet with adjacent property owners on December 16, 2015 to provide an update on the site activities and the perimeter air monitoring plan.
- Permitting
  - Continue Biological Evaluation and permit applications for the Southern Cove and Upland Areas as applicable.
- Facility Dismantling Plan
  - Submit the data package for the temporary wells in the Leach Field area and request MEDEP confirmation that the wells can be abandoned per the Work Plan Addendum.
- Current Conditions / Comprehensive Monitoring Plan
  - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
    - Collect water quality samples from newly-installed Landfill 2 monitoring wells.
  - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
    - Conduct second round of water quality monitoring
    - Complete groundwater density measurements in the Ferry Road Plant Areas.
  - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
    - Evaluate data collected to date and identify any remaining tasks.
- Landfill Ridge Area
  - Receive the final table / figure of additional confirmation samples requested by MEDEP for the entire Landfill Ridge removal area.
  - Receive MEDEP approval of the Landfill Ridge CMI Plan - Revision 1 (including Issued for Construction Drawings Rev1, Excavation and Restoration Work Plan and Construction Water Management Work Plan) submitted to MEDEP on October 28, 2015.
  - Receive MEDEP approval of the Landfill Ridge CMI Plan Revision 1and continue remedy implementation throughout the remainder of the Landfill Ridge Area.
- Landfill 1
  - Continue evaluating data and remedial design options for Landfill 1.
- Landfill 2
  - Continue preparing the Draft CMI Plan for the removal of Landfill 2, to be submitted to MEDEP on January 13, 2016.
- Landfills 3-5
  - Receive and review MEDEP comments on the Landfill 3-5 Cap CMI Plan submitted to MEDEP on August 6, 2015.
- Plant Area
  - Continue pre-design activities in the Southerly Stream and North Ditch and the Plant Area.
  - Continue preparing the Draft CMI Plan for the Southerly Stream remedy, to be submitted to MEDEP on January 12, 2016.
  - Continue preparing the Draft CMI Plan for the North Ditch remedy, to be submitted to MEDEP on January 12, 2016.
- Southern Cove
  - Receive comments from MEDEP on the Sediment Removal Area Delineation Technical Memorandum and finalize the dredge prism (removal areas).
  - Continued developing the design and the Draft CMI Plan for the Southern Cove remedy, to be submitted to MEDEP on March 28, 2016.
- Groundwater
  - Continue sampling and water elevation monitoring of the Interim Extraction System.

- Conduct Fourth Quarter 2015 groundwater monitoring event.
- Finalize three-dimensional groundwater model and submit draft report to MEDEP for review.

- Groundwater Treatment Plant (GWTP) Operation
  - Continue compliance sampling of Outfall 001 and 002 as described above.
  - Submit November 2015 eDMR to MEDEP.
  - Submit the November 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP.
  - Submit the annual Chapter 530 Toxicity Notification letter to MEDEP
  - Continue 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
  - Complete routine maintenance activities.

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**
   - Various Landfill Ridge documents have been under review between Mallinckrodt and MEDEP as described above.
   - Comments on the Landfills Cap 3-5 CMI Plan were expected from MEDEP in October 2015.

5. **The quantity of waste shipped to the various disposal locations**
   - General Debris roll off sent to Pine Tree on November 18, 2015
   - 2015 PDI Activity
     - (80) Eighty 50-gallon drums of IDW shipped to Stablex on November 3, 2015.
     - (1) IDW roll-off shipped to stablex on November 9, 2015.

6. **Additional information regarding the progress of the work**
   - None