

February 5, 2016

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 – January 2016**  
**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 **January 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

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

**Report Date: February 5, 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.

- 1. 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.
  - Permitting
  - Continue drafting permit applications for the Southern Cove and Upland Areas.
  - Facility Dismantling Plan
    - No new activity
  - Current Conditions / Comprehensive Monitoring Plan
    - Began drafting a draft Data Report to MEDEP to present data collected under the Manufacturing Area and Landfill 2 Area Current Conditions monitoring programs.
    - Began drafting a draft Drilling Data Report to MEDEP to present physical data collected during the numerous investigations at the Site during 2015.
    - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
      - Compiled data for reports above.
    - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
      - Compiled data for reports above.
    - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
      - Compiled data for reports above.
    - Landfill Ridge Area Corrective Measures Implementation (MEDEP CAL Dec 10, 2015)
      - Continued to implement corrective measures and completed excavation in Areas LR-1 through LR-10 and LR-12 in January.
      - Continued management of temporary soil stockpile area including management of soils transported from excavation areas and loading onto lined railcars.
      - Continued collection of confirmation samples and submittal of backfill requests to MEDEP as outlined in the “Landfill Ridge CMI General Guidelines for Confirmation Sampling and Split Sampling Protocol” dated December 2, 2015.
      - Continued backfilling approved excavation areas upon completion of confirmation samples and as-built survey.
    - Landfill 1
      - 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
      - Submitted the Draft Landfill 2 CMI Plan to MEDEP on January 13, 2016. Preliminary comments are due March 16, 2016 after which detailed contractor work plans will be submitted to MEDEP for further review.
    - Landfills 3-5
      - Received bids for Geosynthetic liner installation on January 8, 2016 and following up with clarifications.



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**Orrington, Maine  
January 2016**

- Plant Area (MEDEP CAL Pre-Design WP October 22, 2015)
    - Completed pre-design step-out borings in the Plant Area and North Ditch area.
    - Collected samples for the chloropicrin treatability study work.
    - Received bids for Scrap Metal Yard CMI on January 14, 2016 and following up with clarifications.
  - Southerly Stream
    - Submitted the Draft Southerly Stream CMI Plan to MEDEP on January 13, 2016. Preliminary comments are due March 15, 2016 after which detailed contractor work plans will be submitted to MEDEP for further review.
  - Southern Cove
    - Continued developing the design and the Draft CMI Plan for the Southern Cove remedy.
  - Groundwater
    - Submitted the Third Quarter 2015 Groundwater Quality Sampling report to MEDEP on January 21, 2016.
    - Interim Extraction System (IES):
      - Submitted the Fourth Quarter IES operation report to MEDEP on January 18, 2016.
      - Three-dimensional Groundwater Model:
        - Continued drafting the GW Model report to be submitted to MEDEP.
    - Pre-Design Groundwater Control Work Plan for Landfills 3, 4, 5 (MEDEP 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.
    - 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.
    - Continued monthly Outfall 001 effluent monitoring and reporting (volatiles, semivolatiles, herbicides and manganese) per the MPEDES 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 January was month 2 of the 10 consecutive month minimum requirement.
    - Drafted the 2015 Tier II chemical inventory report.
    - Submitted the December 2015 Toxsheet and Effluent Mercury Test Report forms to MEDEP on January 15, 2016.
    - Submitted the December 2015 eDMR to MEDEP on January 14, 2016.
    - Completed routine maintenance activities.
    - 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 MPEDES Permit.
  - Air monitoring and meteorological data is collected continuously by the perimeter air monitoring system and stored in the computer system. Weekly reports will be submitted to MEDEP each Monday via email.

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- 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.
  - Pre-Design data for Landfill 2 and Southerly Stream remedial areas included in Draft CMIPs submitted to MEDEP.
- 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 February 3, 2016 to discuss site activities.
  - Meet with MEDEP on a number of topics on February 23 and 24, 2016.
  - Receive MEDEP comments on the draft Logistics Work Plan (April 15, 2015).
  - Continue operation of the perimeter air monitoring system and meteorological station.
  - Permitting
    - Continue drafting permit applications for the Southern Cove and Upland Areas as needed.
    - Facility Dismantling Plan
    - Evaluate alternate analytical methods with detection limits below the drinking water standard for trichloropropane.
  - Current Conditions / Comprehensive Monitoring Plan
    - Submit a draft Data Report to MEDEP to present data collected under the Manufacturing Area and Landfill 2 Area Current Conditions monitoring programs.
    - Submit a draft Drilling Data Report to MEDEP to present physical data collected during the numerous investigations at the Site during 2015.
    - Begin drafting the proposed Short-Term Comprehensive Monitoring Program for submittal to MEDEP on March 31, 2016. This Short-Term CMP will include sampling designed to ensure any short term impacts from remediation activities are adequately monitored during corrective measures implementation and will also include ongoing quarterly groundwater monitoring, quarterly IES monitoring, and annual monitoring of Landfill 5.
    - Landfill 2 Current Conditions Assessment (MEDEP CAL May 20, 2015)
      - No activity planned.
    - Ferry Road Current Conditions Assessment (MEDEP CAL May 6, 2015)
      - No activity planned.
    - Manufacturing Area Current Conditions Assessment (MEDEP CAL September 25, 2015)
      - No activity planned.
  - Landfill Ridge Area Corrective Measures Implementation (MEDEP CAL Dec 10, 2015)
    - Continue to implement corrective measures as described above.
  - Landfill 1
    - Continue evaluating data needs and remedial design options for Landfill 1.
  - Landfill 2
    - Present key design features of CMI Plan to MEDEP during February meeting.
  - Landfills 3-5
    - Receive and review MEDEP comments on the Landfill 3-5 Cap CMI Plan (Aug 9, 2015), originally due Oct 28, 2015 per the current site-wide remediation schedule.



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- Plant Area
  - Receive MEDEP comments on the Draft Scrap Metal Yard CMI Plan (Nov 9, 2015), originally due January 15, 2016 per the current site-wide remediation schedule.
- Southerly Stream
  - Present key design features of CMI Plan to MEDEP during February meeting.
- Northern Drainage Ditch
  - Submit the Draft Northern Drainage Ditch CMI Plan to MEDEP, originally due January 12, 2016 per the current site-wide remediation schedule.
- Southern Cove
  - Hold a webinar with MEDEP on the proposed removal areas, as outlined in the Sediment Removal Area Delineation Technical Memorandum submitted on November 1, 2015.
  - Receive comments on the proposed removal areas and finalize the dredge prism (removal areas) with MEDEP concurrence.
  - 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.
  - Submit the draft Three-dimensional Groundwater Model report to MEDEP for review.
- Groundwater Treatment Plant (GWTP) Operation
  - Continue compliance sampling of Outfall 001 and 002 as described above including the additional new wastestream sampling requirements.
  - Submit the 2015 Tier II chemical inventory report to the Maine Emergency Management Agency (MEMA), Penobscot County Emergency Planning Committee (EMA), and the Orrington Fire Department (due on March 1, 2016).
  - Submit January 2016 eDMR to MEDEP.
  - Submit the January 2016 Toxsheet and Effluent Mercury Test Report forms to MEDEP.
  - 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**
  - Numerous documents are being submitted to MEDEP for review, MEDEP comments are then due to Mallinckrodt, and responses to these comments are then due back to MEDEP. The dates associated with the various submittals and comment/responses are noted in the specific areas above.
- 5. **The quantity of waste shipped to the various disposal locations**
  - Shipped pavement sweepings to the US Ecology Stables facility on January 26, 2016.
  - Shipped 89 railcars containing 8751.50 tons of excavated soil from the Landfill Ridge Area to the Republic disposal facility in Niagara Falls, New York.
- 6. **Additional information regarding the progress of the work**
  - None.