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May 18, 2007

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
NOTICE OF PROJECT CHANGE

PROJECT NAME: Chadwick Lead Mills Remediation Project
PROJECT MUNICIPALITY: Marblehead and Salem
PROJECT WATERSHED: North Coastal
EOEA NUMBER: 13726
PROJECT PROPONENT: NL Industries, Inc.
DATE NOTICED IN MONITOR: April 11, 2007

Pursuant to the Massachusetts Environmental Policy Act (M. G. L. c. 30, ss. 61-62H) and Section 11.10 of the MEPA regulations (301 CMR 11.00), I have reviewed the Expanded Notice of Project Change (NPC) submitted on this project and hereby determine that it **continues to require** the preparation of an Environmental Impact Report (EIR). In a separate Draft Record of Decision issued today, I have proposed to grant a Phase I Waiver allowing the commencement of the Massachusetts Contingency Plan (MCP) remediation activities to proceed on the project site prior to the completion of an EIR for the entire project, which encompasses the remediation of a former lead mill and a the development of a residential housing project once remediation goals have been achieved. This Certificate outlines the issues that remain to be addressed during the permitting of the remediation project.

Project Description

The Chadwick Lead Mills Remediation Project involves the remediation of a historic lead mill site under the Massachusetts Contingency Plan (MCP). The site of the former Chadwick Lead Mills is located in Marblehead and Salem, off of Lafayette Street (Route 114). The approximately 4.4 acre remediation site consists of parcels of land owned by multiple parties. The largest portion of the site is currently owned by Glover Estates, LLC and consists of both

beach and upland areas where most of the former lead mill buildings stood and lead operations were conducted. The Chadwick Lead Mills site has been listed by the Department of Environmental Protection (MassDEP) in accordance with the MCP since 1995 (DEP RTN #3-12695). Results of field investigation activities conducted at the site have documented high concentrations of lead impacted soils and sediments on portions of the site and adjacent properties. Abutting properties, a portion of which include contaminated areas, are conservation lands of the Town of Marblehead and the City of Salem, a public bike/walking trail owned by Marblehead, and private residences along Robert Road in Marblehead.

The site is bounded by the Forest River to the west; Salem Harbor to the north; land owned by the Town of Marblehead to the east; and private residential parcels to the south. The Marblehead/Salem town boundary bisects the property in the westerly part. Coastal resource areas on the site include salt marsh, beach and coastal bank, plus a 100-foot wetlands buffer and a 200-foot Riverfront Area associated with the Forest River. A portion of the site along the coastal bank is situated within a Federal Emergency Management Agency (FEMA) 100-year floodplain and contains Land Subject to Flooding and Land Subject to Coastal Storm Flowage.

MEPA History

The project was originally submitted to MEPA in an Expanded Environmental Notification Form (EENF) in February 2006 at the same time that a separate EENF was filed by a different proponent for a housing development project on the same site. The proponent for the Lafayette Tides project (EOEA #13725), Glover Estates, LLC, proposed the development of a 44-unit multi-family housing project under the state's Comprehensive Permit (Chapter 40B) program on the project site. The proponent for the Lafayette Tides project intends to acquire the site and construct the residential development once the site has been remediated and a Class A Response Action Outcome (RAO) has been filed for the property.

While the two projects are separate, the proponents for the remediation and housing projects coordinated their efforts under the MEPA review for the purpose of giving state agencies and the public an opportunity to review any interrelated permitting issues and to undertake a comprehensive review of how both projects will impact environmental resources at the site. MEPA issued one Certificate for both projects on March 17, 2006. The Certificate on the EENFs required the preparation of combined Draft and Final Environmental Impact Reports (EIR) that address both projects.

Project Change Description

The project as outlined in the NPC consists of the remediation of those parcels encompassing the former Chadwick Mills site plus adjoining parcels in Marblehead and Salem that have been designated by the Department of Environmental Protection (MassDEP) as a Tier 1C cleanup site under the MCP. The proposed project change involves the following:

1. A Notice of Noncompliance (NON) has been issued by MassDEP for the cleanup of the remediation site under the MCP. The NON requires that the remediation project be completed prior to June 2009. Due to time-of-year restrictions in the contaminated

- coastal beach area, the proponent states that remediation activities need to start in October 2007 in order for the June 2009 deadline to be met.
2. The proponent of the remediation project and the entity solely paying for remedial actions under the MCP is NL Industries, Inc., not Glover Estates, LLC. NL Industries, Inc. has completed the necessary studies in response to the scope of impact assessment, alternatives analysis and mitigation measures called for in the Certificate on the EENFs.
 3. The conditions surrounding the Lafayette Tides housing development project have changed. The proponent of the housing project has informed NL Industries, Inc. that it is not ready to proceed with the MEPA process at this time as it is awaiting the outcome of local permitting reviews and public hearings in which it is seeking permit approvals to build one of two options for housing on the site. Currently, the proponent for the housing project is seeking local approval for a Chapter 40B affordable housing project which is currently under review by the Marblehead Zoning Board of Appeals. The housing project proponent also sought approval from Marblehead Town Meeting in May 2007 for a zoning change that would allow the development of a market rate housing project on the same site. This approval was not received. Either of the housing development scenarios will delay the remediation project until October 2008.
 4. The remediation project alone does not require a Chapter 91 license for non-water dependent uses and activities in the former tidelands area along the Forest River.

Jurisdiction

As outlined in the Certificate on the EENFs, the remediation and housing projects were subject to the preparation of a Mandatory EIR pursuant to Section 11.03(3)(a)(5) of the MEPA regulations because a Chapter 91 Waterways License was required for a new non-water dependent use occupying one or more acres of tidelands. The projects also met MEPA review thresholds for wetlands due to impacts to coastal beach and bank (301 CMR 11.03 (3)(b)(1)(a)); salt marsh (301 CMR 11.03(3)(b)(1)(c)); and regulatory floodway (301 CMR 11.03(3)(b)(1)(e)).

While it was work associated with the Chapter 91 impacts of the Lafayette Tides housing project that triggered the mandatory EIR threshold, the Secretary determined that there were enough interconnected issues related to the permitting and potential impacts from both projects that a combined set of EIR documents should be prepared. In its comments on the EENFs, MassDEP indicated that it could consider permitting the remediation project separately from the residential project if the Draft EIR provided enough information for the Department to determine that the remediation is sufficiently distinct from the Lafayette Tides project. The proponent states in the NPC that a Chapter 91 license is not required for the remediation work; MassDEP supports this statement in its comments on the NPC.

MEPA jurisdiction on the remediation project is limited to the subject matter of required or potentially required state permits. The remediation project requires the following permits and/or review: a Category II Programmatic General Permit from the United States Army Corps of Engineers (U.S. ACOE); a Chapter 91 Waterways dredging permit and 401 Water Quality Certification from the Department of Environmental Protection (MassDEP); Federal Consistency Review from the MA Office of Coastal Zone Management (CZM); and Orders of Conditions from the Salem and Marblehead Conservation Commissions.

Waiver Request

The proponent has submitted the Expanded NPC to allow for MEPA and public review of the proposed changes to the project as outlined above. In addition, the NPC contained a request for a Phase I Waiver that would allow the MCP remediation activities to occur prior to the submittal of a Draft and Final EIR for both projects as required by the Secretary's Certificate of March 17, 2006. In a separate Decision also issued today, I have proposed to grant the Phase I Waiver for the remediation project.

The Phase I Waiver does not divorce the remediation project from the housing project; the scope issued on March 17, 2006 for a combined Draft and Final EIR remains applicable. I acknowledge that the Expanded NPC responded in detail to the scope issues for the remediation project. The NPC presented a comprehensive alternatives analysis and a discussion of how the project will avoid, minimize or mitigate environmental impacts. In addition, the proponent responded to all the comments regarding the remediation project that were submitted on the EENF.

The issues outlined in this Certificate may be addressed during the permitting of the remediation project. When a Draft EIR is submitted for both projects, the remediation proponent should incorporate by reference the material provided in the NPC, provide an update on the remediation activities and MCP process, and outline any changes to the project or mitigation commitments that may arise during permitting.

Alternatives

Remediation Alternatives

The remediation project involves contamination remedial actions and resource area restoration at a Tier IC Site under the MCP. The primary contaminant of concern (COC) is lead in soil, groundwater, sediment, wetlands, and other coastal resource areas. MCP activities have been underway at the site since 1995. Previous MCP response action submittals (Phase I Site Investigation Report, Phase II Comprehensive Site Assessment Report and Phase III Remedial Action Plan) have been prepared for the Chadwick Mills site and submitted to MassDEP over the past several years of site assessment activities. The proponent plans to submit a MCP Phase IV Remedy Implementation Plan (RIP) in June or July of 2007. Following the risk characterization for the site, the proponent's remedial clean up goal is to achieve a condition of "No Significant Risk" (NSR), a necessary condition to achieve a Class A Response Action Outcome (RAO) under the MCP.

The proponent provided an overview of the MCP process in the NPC. The MEPA review of the project does not encompass specific site investigations and remedial actions performed by the Licensed Site Professional (LSP) under the Tier IC permit issued by MassDEP. However, the Secretary's Certificate on the EENFs required that the proponent consider alternative remediation methods, within the framework of the MCP, which could minimize impacts to coastal wetland resources. The proponent evaluated the following remedial actions in the NPC:

- No Action;
- Monitored Natural Attenuation;
- Institutional Controls;
- Phytoremediation;
- In-Situ Treatment;
- Engineered Barrier (Capping/Containment);
- Excavation with On-Site Treatment and Re-Use; and
- Excavation with Off-Site Disposal.

For the purposes of remediation, the proponent divided the site into three general areas: upland, beach and harbor. The proponent's selected remedial plan includes in-situ treatment and chemical stabilization of the soils located on the Western Upland portion of the site in Salem and excavation treatment and off-site disposal of the contaminated soil and sediment from the coastal resource areas and the Eastern Upland and residential areas in Marblehead. The proponent states in the NPC that the preferred remedial actions selected for the site will achieve a Permanent Solution by reducing lead concentrations and/or eliminating lead exposures such that a condition of No Significant Risk will be achieved.

Within the Eastern Upland and Residential Upland areas (Marblehead), approximately 7,500 cubic yards (cy) and 1,200 cy, respectively, of lead-impacted soil will be excavated and disposed of off-site. Excavation activities in these upland areas will extend to an initial depth of one to three feet below ground surface. Lead-impacted soil within the Western Upland portion of the site (Salem), including an area of Land Subject to Coastal Storm Flowage (LSCSF) will be treated in-situ via lead stabilization. The proposed remedial actions at the beach area include excavation with off-site disposal of contaminated soils and sediments from coastal resource areas encompassing bank, beach and salt marsh. Excavation activities in the beach area will occur over the entire proposed limit of work, and extend to an average depth of 1.25 to two feet.

Lead contamination of the harbor sediments will be remediated in two stages. The first involves excavation of the near-shore sediments adjacent to the Salem/Marblehead shoreline and restoration of the area with the application of a Class A RAO (Permanent Solution). The second stage involves placing a Class C RAO (Temporary Solution) on a small offshore area in Salem Harbor. The proponent anticipates that once the current primary source areas of lead waste leaching from the upland and coastal soils and near-shore harbor sediment have been remediated and removed, natural contaminant recovery processes such as attenuation and dispersion will occur. A condition for implementing the Class C RAO in the harbor will be to monitor this natural recovery process, and if necessary, perform additional response actions in accordance with the MCP.

Several commenters have raised concerns regarding the Class C RAO proposed for Salem Harbor. While the Secretary's Certificate on the EENFs requested that the proponent provide a discussion of MCP activities to MEPA, the appropriate forum to discuss alternative clean up measures or levels of cleanup is through the MCP and the Public Information Process (PIP). Pursuant to 310 CMR 40.140, the remediation project has followed a rigorous PIP since 2001. The permits issued by MassDEP for remedial actions at the site fully delegate the authority for all MCP activities and cleanup decisions at the site to the LSP of record for the project. The

LSP is authorized by MassDEP to determine final cleanup levels and locations for remedial actions and to certify the RAO at its completion. MassDEP has indicated its support for the Phase I Waiver and notes that in order to fully comply with the MCP, NL Industries, Inc. will have to demonstrate that the appropriate response action endpoint has been achieved for the harbor sediments. Concerns regarding remediation in abutting conservation areas and on the public bike/walking trail will be addressed by the proponent in the Phase IV RIP.

Construction and Excavation Alternatives

In order to perform remediation activities on the beach portion of the site, the proponent will need to bring heavy construction equipment onto the waterfront. In the NPC, the proponent considered several alternatives for providing access to the coastal resource area, including:

- Construction of a temporary road and ramp down to the beach area with primary access from Lafayette Street via the Bike Trail;
- Travel beneath the Bike Trail under the existing foot bridge at the location of the trail that demarcates the municipal boundary between Salem and Marblehead; and
- Construction of a ramp down to the beach area crossing the Bike Trail from the upland portion of the site.

The proponent prefers the third access option that entails the construction of a ramp down to the beach area from the upland portion of the site. The Town of Marblehead has raised concerns regarding construction impacts on on-site utilities and to the public use of the bike path. The proponent notes that as one of the owners of the site where remediation alternatives will be carried out, the Town of Marblehead will have to approve the final details of access to and construction at the site. Construction specifications will also be reviewed by the Marblehead Conservation Commission during the Notice of Intent review. The proponent should note concerns that have been raised regarding the impacts of project-related truck traffic.

The proponent also considered the impact of the tides on construction activities in the area. The mean high water line bisects the coastal remediation area in a North-South manner. Given this tide cycle, approximately half of the beach remediation area is covered with water for about half the day. The proponent will use a silt fence to provide erosion control during excavation activities. Horizontal shoring and bracing techniques will be used to protect the Forest River Seawall during excavation activities. Excavation and ex-situ treatment will occur along the approximately 10 foot strip adjacent to the seawall.

There are two utilities present at the site. The Town of Marblehead municipal sewer line traverses the southern half of the property and a high-voltage electric line owned by the Marblehead Municipal Light Department is located beneath the walking trail to the north. The NPC outlined several construction and design alternatives considered by the proponent for the purposes of protecting and avoiding potential damage to these utilities. The proponent will continue to consult with the Town of Marblehead regarding the preferred construction methods in the vicinity of the utility lines.

Restoration Alternatives

The remediation project has been designed to avoid and minimize impacts to wetland resource areas and to meet the performance standards of the Wetland Protection Act (310 CMR 10) and its regulations. The proponent's goal is to ensure a 1:1 in-place and in-kind reestablishment of the wetland resource areas that will be temporarily impacted by the site remediation, as well as to improve stormwater and groundwater quality.

The NPC contained a detailed analysis of three alternatives considered for coastal bank restoration:

- Soft (bioengineered) treatment – This design would consist of a 1:1 in-kind replacement of the coastal bank area following excavation. The proponent states that a stand-alone “soft” engineering approach to stabilize the bank would require constant maintenance and be susceptible to coastal storm impacts.
- Rock Face (Hardened Shoreline) – This design alternative would consist of a 1.5:1 coastal bank slope with two layers of rock positioned at the surface. The stone would be placed atop geotextile fabric and a bedding of 6 inches of coarse gravel. The proponent states that this alternative could allow scour to occur along the beach due to storm wave reflection. In addition, the hard alternative would not provide beach nourishment.
- Hybrid alternative – This design approach would involve a structural bank restoration to prevent upland loss and incorporate a sacrificial berm (i.e. sediment nourishment) to mitigate for the loss of erosion from the lower coastal bank.

The hybrid alternative is the proponent's preferred design for coastal bank restoration because it would require less maintenance and protect the bike/walking path located on the upland portion of the site. In both the soft treatment and hybrid alternatives, the proposal involves implementing a below-ground stabilization technique (coir logs for the soft treatment, or revetment for the hybrid), with a sacrificial berm consisting of a combination of sand/cobble/gravel nourishment at the base of the bank and overlying it.

MassDEP states in its comments on the NPC that the hybrid alternative cannot be permitted under the coastal wetland regulations at 310 CMR 10.30(3). In addition, CZM recommends that the proponent avoid any hard armoring for the bank, and instead use the proposed nourishment technique without the armoring component to improve long term protection of both the coastal bank and the coastal beach functions. In a letter submitted to the MEPA office on May 14, 2007, the proponent acknowledges that the hybrid alternative cannot be permitted and states that it will implement the “soft” alternative for coastal bank restoration to comply with the Wetlands Protection Act regulations. The proponent will submit a revised coastal bank design plan to permitting agencies for review.

MassDEP supports the proponent's proposed beach nourishment initiative to alleviate coastal bank erosion. If properly maintained and monitored, beach nourishment should provide adequate stabilization of the bank and eliminate the need for any hard structural support of the bank. The proponent should note that the bank will require continued monitoring and

maintenance in perpetuity. The proponent should provide MassDEP with documentation identifying the parties responsible for the long-term monitoring.

I note that the Town of Marblehead strongly prefers the “hard” alternative due to concerns about protection of utilities and the bike path. Although the proponent attempted to satisfy the Town’s concerns for bank protection with the hybrid design, this design is not permissible. The proponent has stated that it will continue to coordinate with Town officials to achieve a balance of long-term protection of the bike trail with permissible restoration activities in the state regulated coastal area of the site.

Wetlands

The beach/coastal remediation area is approximately 0.96 acres in size. The remediation project will result in impacts to the following coastal resource areas:

- 5,565 sf of Coastal Bank
- 2,053 sf of Land Subject to Coastal Storm Flowage (LSCSF)
- 7,575 sf of Coastal Beach
19,001 sf of Salt Marsh
- 1,561 sf of Rocky Intertidal
- 6,137 sf of Tidal Flat

The proponent should note comments from CZM regarding the delineation of LSCSF at the project site. Given that variable shore topography can affect velocity conditions at a specific site that may not be reflected in the elevation given on the Flood Insurance Rate Map (FIRM), the proponent should scale the location of this flood zone from the FIRM map onto the plan to improve accuracy.

The “upland” remediation is approximately 3.4 acres in size. The remediation will result in the following additional resource area impacts in the upland area:

- 29,490 sf of Land Subject to Coastal Storm Flowage
15,672 sf of Riverfront Area
- 83,316 sf of Buffer Zone

In response to the Secretary’s Certificate on the EENFs, the proponent has committed to measures to mitigate for unavoidable impacts to wetland resources. The proponent has prepared a Wetlands Mitigation and Monitoring Plan in consultation with MassDEP, MACZM, the U.S. ACOE and the Marblehead Conservation Commission. This plan was submitted with the Expanded NPC. The plan outlines goals to remediate, restore and mitigate impacts to resource areas and presents construction and planting specifications for restoration areas and monitoring commitments. The proponent should note specific comments from CZM regarding the proposed approach for salt marsh restoration.

The project proposes to dredge mud flats, rocky intertidal areas and low marsh in addition to wetlands resource areas located above the mean high water mark. The project will also include in-situ remediation of contaminated filled tidelands; according to MassDEP, this

activity will not require a Chapter 91 license if existing grades are not significantly altered. The NPC states that the remedial actions to be performed will not substantially alter the site elevations or conditions except as necessary to excavate and treat contaminated soil and sediment. Minimal materials will be added to the Chapter 91 tidelands, areas will be restored to approximate existing grades and no site utilities or infrastructure will be added or altered by performance of the proposed remedial activities.

Dredging contaminated material below the mean high water mark, and addition of material to backfill dredged areas, will require a Chapter 91 dredge permit, (310 CMR 9.00) and a section 401 Water Quality Certification (314 CMR 9.00). In response to comments from MassDEP, the applications for these permits should clearly demarcate the subtidal areas to be dredged, state the volumes of material to be dredged, and provide data in accordance with 314 CMR 9.07(2). The proposed fill material must be of similar material and grain size. The Water Quality Certification application should include sediment quality data and an alternatives analysis and should demonstrate that the project complies with the Surface Water Quality Standards at 314 CMR 4.00.

The NPC outlined the construction sequence for the project and proposed measures to limit construction-period impacts to wetland resources. The proponent will install erosion controls down-gradient of work areas to ensure that material is not transported into resource areas. All personnel and equipment that passes through the site will be required to pass through a decontamination station to prevent spreading of contaminated materials. Construction activities will be monitored for particulate emissions and airborne dust.

Mitigation


The NPC presents a Draft Section 61 Finding for the MassDEP Water Quality Certificate and Chapter 91 Dredging Permit. If mitigation commitments change as a result of changes to project design during permitting, the Section 61 Findings for the remediation project should be modified accordingly. The Final Section 61 Findings will be included with all state permits issued for this project, and will be considered binding upon the proponent as mitigation commitments. I remind MassDEP to forward a copy of the Section 61 Finding, once issued, to the MEPA Office for completion of the project file.

Conclusion

Based on a review of the information provided by the proponent and after consultation with the relevant public agencies, I find that the potential impacts of the remediation activities at the Chadwick Lead Mills site do not warrant further MEPA review. The proponent should continue to work closely with the MassDEP, CZM, the ACOE and local officials during permitting to ensure the successful implementation of remediation activities and wetland restoration efforts.

May 18, 2007

Date



Ian A. Bowles

Comments Received:

4/26/2007 Massachusetts Office of Coastal Zone Management
5/1/2007 Mark W. Roberts, McRoberts, Roberts & Rainer, LLP
5/8/2007 Jeffrey L. Roelofs, Anderson & Kreiger, for the Town of Marblehead
5/11/2007 Department of Environmental Protection, Northeast Regional Office
5/11/2007 Daniel Garson, Woodard & Curran, for the Proponent
5/11/2007 Florence Denhard
5/11/2007 Sandra and Stuart Osattin
5/11/2007 Bob Fraser
5/14/2007 Daniel Garson, Woodard & Curran, for the Proponent
5/16/2007 Richard Chalpin, Department of Environmental Protection, Northeast Regional Office

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