



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK  
Governor

TIMOTHY P. MURRAY  
Lieutenant Governor

IAN A. BOWLES  
Secretary

ARLEEN O'DONNELL  
Commissioner

February 23, 2007

Mr. George McLachlan  
Manager, Environmental  
Algonquin Gas Transmission, LLC  
890 Winter Street  
Suite 300  
Waltham, MA 02451

Re: **401 WATER QUALITY CERTIFICATION**  
Application for BRP WW 07, Major project dredging

At: Massachusetts Bay, in the municipalities of Manchester-by-the-Sea, Beverly, Salem,  
and Marblehead

DEP Transmittal No: W066014  
ACOE Application No: 2005-786  
DEP Wetlands File No: Beverly: 5-929; Manchester-by-the-Sea: 39-517; Marblehead: 40-887;  
Salem: 64-423

Dear Mr. McLachlan:

The Massachusetts Department of Environmental Protection (the "Department" or "MassDEP") has reviewed the application of the Algonquin Gas Transmission, LLC (the "permittee") for a 401 Water Quality Certification, as referenced above, for construction of the Northeast Gateway Pipeline Lateral (the "project" or "pipeline") as described below. In accordance with the provisions of Section 401 of the Federal Clean Water Act as amended (33 U.S.C. §1251 *et seq.*), M.G.L. c.21, §§ 26-53, and 314 CMR 9.00, it has been determined there is reasonable assurance the project will be conducted in a manner which will not violate applicable water quality standards (314 CMR 4.00) and other applicable requirements of state law.

The pipeline will pass through Massachusetts Bay, which is designated as Class SA in the Massachusetts Surface Water Quality Standards (314 CMR 4.00). Class SA waters are intended "as excellent habitat for fish, other aquatic life and wildlife and for primary and secondary contact recreation." Anti-degradation provisions of these Standards require that "existing uses

and the level of water quality necessary to protect the existing uses shall be maintained and protected.”

**Proposed Project:**

The project entails the installation of approximately 16.1 miles of 24-inch gas transmission diameter pipe, of which approximately 12.5 miles are in state waters in Massachusetts Bay, partly within the municipalities of Marblehead, Salem, Beverly, and Manchester-by-the-Sea and partly within state waters seaward of those municipalities. The pipeline will connect an offshore liquefied natural gas (“LNG”) terminal located in federal waters with the existing HubLine pipeline located in waters of the Commonwealth. The pipeline is to be constructed by the permittee pursuant to a Certificate to be issued by the Federal Energy Regulatory Commission. The terminal is to be constructed and operated by Northeast Gateway Energy Bridge L.L.C. pursuant to the authority of the Deepwater Port Act of 1974 and the Record of Decision of the Maritime Administration of the Department of Transportation, which was issued on February 7, 2006. This Certification does not authorize any future activities associated with the decommissioning of the project.

The proposed pipeline route proceeds northeast from the existing HubLine gas transmission pipeline before turning southeast toward the site of the LNG terminal. This relatively indirect route was chosen by the permittee in order to avoid hard bottom benthic habitat, so that the majority of the pipeline construction will proceed using the post-lay plow through soft bottom sediments. For ease of reference, proposed activities along the pipeline route are identified by the mile and fraction thereof, at which the activity starts and ends. Thus the start of the pipeline at the HubLine is considered milepost 0.0. The pipeline will be buried in waters ranging from approximately 130 feet deep at its point of connection with HubLine, to approximately 250 feet at the state/federal boundary. As set forth herein, the pipeline will be lowered with the top of pipe approximately 3 feet below the surface of the seafloor and installed using, primarily, one pass of the post-lay plow. At tie-in locations and at locations where the pipeline crosses existing subsurface utilities, or similar obstructions, the pipeline will be placed directly on the seafloor and will be armored for protection.

The post lay plow construction method proposed for this project was used extensively to construct HubLine. Water quality monitoring of plowing activities conducted during the HubLine project showed that this construction method complied with surface water quality turbidity standards. Therefore, no water quality monitoring is being required for this project in state waters. The proponent will be required, in its federal permits, to conduct water quality monitoring outside of state waters along a portion of the pipeline route where the anchors associated with work barges may disturb sediment in the vicinity of the Massachusetts Bay Disposal Site. A National Pollutant Discharge Elimination System (“NPDES”) permit will also be required under sections 301 and 402 of the federal Clean Water Act with respect to the discharge of treated seawater used to flood the pipe to help lower it into its burial trench and for the purpose of hydrostatic testing.

**Ocean Sanctuaries Act**

Pursuant to the Ocean Sanctuaries Act, M.G.L. 132A §§13-16 and 18 and its regulations at 302 CMR 5.00, the Department of Conservation and Recreation (DCR) has regulatory jurisdiction over the Commonwealth's Ocean Sanctuaries. DCR submitted a comment letter dated January 29, 2007 during the Chapter 91 public comment period for this project, that included conditions under which the project may comply with the Ocean Sanctuaries Act. Those conditions have been incorporated as conditions of the chapter 91 written determination and/or this Certificate. Therefore, the Department finds that the project complies with the Ocean Sanctuaries Act.

**Section 61 Findings**

Pursuant to the Massachusetts Environmental Policy Act ("MEPA"), M.G.L. c.30, §§61 to 62H inclusive, this pipeline project was reviewed as EOE # 13474 and the Northeast Gateway Port ("Port") in federal waters was reviewed as EOE # 13473. On December 1, 2006, the Secretary of Environmental Affairs issued a Certificate on the Final Environmental Impact Report ("FEIR") for both the pipeline and Port elements of the project finding that the FEIR adequately and properly complied with MEPA and its implementing regulations.

MassDEP has reviewed the MEPA documents and the documents submitted in connection with the application for a Water Quality Certification. Based upon its review, MassDEP is satisfied that with implementation by the permittee of the mitigation measures and the requirements of this Water Quality Certification, all practicable and feasible means and measures will be taken to avoid or minimize adverse wetland and related impacts to the environment associated with the construction of this project. Please see the Department's detailed Section 61 Findings for this project attached hereto as Attachment A.

**Conditions**

1. All work shall conform to the "Northeast Gateway Pipeline Lateral" plans prepared by Spectra Energy/Algonquin Gas Transmission, LLC. See Table 1 below:

**TABLE 1**

<b>Plan Title</b>	<b>Drawing No.</b>	<b>Date</b>
Drawing Index	M7-L-1000 Rev. D	5/26/05, revised 3/7/06
Construction Vessel Anchor Corridor Sht 1 of 4	M5-Z-2050 Rev. D	5/17/05, revised 2/6/06
Construction Vessel Anchor Corridor Sht 2 of 4	M5-Z-2051 Rev. E	5/17/05, revised 2/6/06
Construction Vessel Anchor Corridor Sht 3 of 4	M5-Z-2052 Rev. D	5/17/05, revised 2/6/06
Alignment and Profile	M5-Z-2100 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2101 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2102 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2103 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2104 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2105 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2106 Rev. E	4/12/05, revised 2/6/06
Alignment and Profile	M5-Z-2107 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2108 Rev. E	4/13/05, revised 2/6/06

Alignment and Profile	M5-Z-2109 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2110 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2111 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2112 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2113 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2114 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2115 Rev. E	4/13/05, revised 2/6/06
Alignment and Profile	M5-Z-2116 Rev. E	4/12/05, revised 2/6/06

2. All work shall further comply with:

- (a) the information and methodologies contained in the 401 Water Quality Certification application for this project, dated July 7, 2005, prepared by TRC Environmental Corporation, Inc., as amended by subsequent submittals referenced in this Certification and on file with MassDEP; and
  - (b) the terms and condition of this Certification including the following Attachments and documents incorporated herein by reference:
    - A. Section 61 Findings appended as Attachment A;
    - B. Construction Contingency Plan and Reporting Procedures, dated February 12, 2007 and appended as Attachment B;
    - C. Environmental Monitoring Requirements, appended as Attachment C;
    - D. Northeast Gateway Pipeline Lateral Final Environmental Monitoring Plan ("EMP") dated February 2007, on file with the Department;
    - E. Marine Mammal Detection, Monitoring, and Response Plan, dated December 2006, on file with MassDEP and as it may be modified after final approvals from federal permitting agencies;
    - F. Marine Communications Plan, dated February 15, 2007 on file with MassDEP and as it may be modified after final approvals from federal permitting agencies; and
    - G. Schedule of Compensatory Mitigation for Unanticipated Impacts, appended as Attachment D.
3. To the extent that the following conditions modify or differ from the plans, specifications or other proposals referenced in Conditions 1 and 2, the conditions of this Certification shall control.
  4. Any change to the plans identified in Condition 1 or changes in construction methodologies approved in this Water Quality Certification shall require the permittee to notify MassDEP of the proposed change and receive written approval prior to undertaking any work not authorized by this permit.
  5. On December 19, 2006, the permittee entered into a Memorandum of Understanding (the "MOU") with the Commonwealth. The MOU required the permittee to make diligent efforts

to construct that portion of its pipeline between Mileposts 0.0 and 8.0 in a manner that would not preclude the construction of a second gas pipeline (the "Neptune project") at a later date in the same general corridor along a roughly parallel route that is not less than 300 feet generally to its northwest (except in those locations where a 250 foot separation is required), in a manner not substantially more complicated or expensive than that required to construct the first pipeline. The Neptune project also entered into a MOU with the Commonwealth that contained a similar provision regarding accommodation of the two pipelines. Subsequent to the execution of the MOUs, the permittee and the Neptune project proponents have engaged in discussions to refine the positioning of their respective alignments from the other's proposed pipeline centerline as set forth in the respective MOUs. In order to implement the MOU as further refined by the permittee and Neptune, the permittee shall:

- a. take all diligent measures to construct its pipeline as close to the proposed centerline approved herein as practicable and as otherwise set forth in its revised application dated February 9, 2007, particularly in those limited areas between MP 1.52 and 2.38 where the proposed distance between the pipeline centerlines is less than 300 feet; and
  - b. upon completion of construction provide to the Department and Neptune as-built plans with pipeline coordinates in those areas where the as built pipeline is less than 300 feet from the proposed Neptune centerline shown on its revised application dated February 9, 2007.
6. Prior to the start of construction, the permittee shall provide to MassDEP the name, phone number and qualifications of the Environmental Inspector assigned to the project.
  7. A copy of this Certification and referenced plans and documents shall be provided to the contractor prior to the start of construction.
  8. A copy of this Certification and referenced plans and documents shall be kept available on the major construction vessels during all phases of construction.
  9. Staff of MassDEP shall have the right to enter and inspect the area and activities subject to this Certification at reasonable hours to evaluate compliance with the conditions stated in this Certification, and may require the submittal of any data deemed necessary by MassDEP for that evaluation.
  10. MassDEP shall be notified, to the attention of Alex Strycky (617-292-5616), one week prior to the start of pipe lay work so that Department staff may inspect the work for compliance with the terms and conditions of this Certification.
  11. Construction work in accord with this Certification may begin following the 21-day appeal period described on page 10 and once all other applicable permits have been received.
  12. Except for any monitoring, mitigation, or other activities specifically authorized for a different timeframe, all work authorized herein shall be completed within five (5) years of the date of issuance of this Certification. In the event the permittee does not commence or complete construction in 2007 within the work windows established or modified in

accordance with the conditions herein, it shall submit a written notification to the Department that provides the following information:

- a. An explanation of the reasons for non-commencement/non-completion of the work.
- b. A description of the construction status of the pipeline.
- c. A complete description of how the matters that caused non-commencement/non-completion will be addressed to provide for commencement and completion of the pipeline during 2008 within the work windows established or modified in accordance with the conditions herein.
- d. A description and schedule of the construction work to be performed within the waters of the Commonwealth during 2008 within the work windows established or modified in accordance with the conditions herein.

The permittee shall submit the notification to the Department as soon as practicable, but in any event no later than December 30, 2007.

If at any time subsequent to the submission of the above notification, the permittee receives information that is likely to result in a revision of the information provided in notification subsections (c) or (d), or if otherwise requested by the Department, the permittee shall within seven (7) days of receipt of the information or request submit to the Department a revised notification that describes the new information, the effect it may have on the commencement/completion of the pipeline within approved 2008 work windows, a description and timetable for the actions the permittee intends to undertake to address the matter, and a revised work schedule.

If on the basis of a notification or other written report it receives, the Department has reason to believe that the pipeline will not be commenced or completed within the approved 2008 work window, the Department may take appropriate action to ensure that any project construction-related activities occurring within the waters of Commonwealth in 2009 or thereafter are conducted in conformance with applicable state and federal approvals.

13. All vessels used in the project shall be maintained in sea-worthy condition.
14. The permittee shall not use imported backfill, except as approved herein for the utility crossing and tie-in locations as described in the application, and for armoring with concrete mats ("CC mats"), sand, sand bags (in biodegradable bag) and rocks placed in accordance with this Certification and the Construction Contingency Plan approved herein. Any imported material shall be clean and free of contaminants, and in the case of imported rock, contain no more than 10% fine material.
15. Prior to commencement of construction, the permittee shall file with the Department a copy of its federally required Spill Prevention Control and Countermeasures Plan (SPCC Plan) for its review. All construction activity shall comply with the terms and conditions of the SPCC Plan on file with MassDEP. A copy of the SPCC Plan shall be kept on each affected construction vessel at all times during construction.

16. All work authorized in this Certification shall comply with the terms and conditions of the Marine Mammal Detection, Monitoring, and Response Plan (MMDMRP), dated December 2006, on file with MassDEP and as it may be modified after final approvals from federal permitting agencies. A copy of the approved MMDMRP shall be kept on each affected construction vessel at all times during construction.
17. All activities authorized in this Certification shall comply with the terms and conditions of the Marine Communications Plan on file with MassDEP and as it may be modified after final approvals from federal permitting agencies and ongoing input from stakeholders. A copy of the approved Marine Communications Plan shall be kept on each affected construction vessel at all times during construction.
18. In order to minimize habitat disturbance due to anchor sweep, mid-line buoys shall be used on anchor cables such that no more than 600 feet of cable is in contact with the seafloor.
19. The pipeline shall be filled with seawater before burial in order to assist with achieving proper pipeline burial depth and for the purposes of hydrostatic testing.
20. The use of biocide for any purpose shall be in accordance with any requirements of an NPDES permit issued for its discharge.
21. The primary pipeline construction methods to be used in state waters are shown in the Table 2 below. Except in those areas of utility crossing or pipeline tie-ins identified in the application where full burial of the pipeline is infeasible, the permittee shall operate the equipment used to bury the pipeline in a manner so that the top of pipe is at least 3 (three) feet below the sea floor. In the event that post-lay surveys indicate that the top of pipe is buried less than 1.5 feet below the seafloor, the permittee shall implement the procedures and take the actions established in the approved Construction Contingency Plan attached to this Certification as Attachment B, in order to either achieve the minimum depth to burial or place the approved hard cover. The permittee shall not add introduced cover material, including but not limited to sand bags, rock, or concrete mats, until feasible measures to lower the pipe have been undertaken in accordance with the Construction Contingency Plan.

**TABLE 2**

<b>Primary Construction Method – NEG Lateral</b>	<b>Approximate Locations (MP)</b>
Hot Tap	0.0 to 0.0
Jetting	0.0 to 0.1 (164 feet)
Plow/Jet	0.1 to 0.1 (325 feet)
Post-lay plow, backfill plow	0.1 to 5.5 (28,711 feet)
Plow/Jet	5.5 to 5.6

	(325 feet)
Jetting	5.6 to 5.7 (259 feet)
CC-Mats (Hibernia Cable Crossing)	5.7 to 5.7 (300 feet)
Jetting	5.7 to 5.8 (287 feet)
Plow/Jet	5.8 to 5.8 (325 feet)
Post-lay plow, backfill plow	5.8 to 12.5 (35,007 feet)

22. Bottom contours shall be restored to the extent feasible in accordance with the Construction Contingency Plan, attached hereto as Attachment B. Except as allowed by the Construction Contingency Plan, cover over the pipeline shall be limited to benthic surficial sediments from areas immediately adjacent to the pipeline.

23. The permittee shall provide weekly construction updates by email to representatives of MassDEP, MA Department of Marine Fisheries, MA Department of Conservation and Recreation, MA Office of Coastal Zone Management, and other agencies in accordance with the Construction Contingency Plan and Reporting Procedures appended as Attachment B. These weekly reports shall at a minimum include the following information:

- a. length and location of pipeline laid, buried, and covered, both during the reporting period and cumulatively;
- b. summary results of any visual, sonar, or other survey to identify depth of trench, top of pipeline, and depth of cover over the pipeline;
- c. all pipeline burial and construction techniques used during the reporting period;
- d. location and length of portions of the pipeline that were not initially lowered to at least 1.5 feet below the sea floor after the application of the primary construction technique listed in Condition 21, and secondary construction measures used to further lower the top of pipe;
- e. in cases where the top of pipe was not lowered at least 1.5 feet, the materials and methods for placement of additional cover material;
- f. updates on performance of backfill plow;
- g. updated construction schedule and estimated completion date; and
- h. if necessary, a request for an extension of the work window in accordance with Condition 24.

24. The construction period for this project is limited to the period from May 1 through November 30 of each calendar year unless otherwise approved by the Department. While a significant collection of ecologically and commercially important species is present throughout the construction area, this work window was selected in recognition of the need to limit work during those times that Right Whales are likely to be present in the vicinity of Stellwagen Bank. The permittee, or its contractor, shall complete the activity within the



permitted timeframe, except as provided herein. In the event the permittee seeks to conduct construction activities, except for monitoring and mitigation activities, outside of this work window, the permittee, or its contractor, shall submit a written request, as part of the regular construction update reports required in Condition 23, to the Department as soon as feasible and at least one (1) week prior to the close of the specified work window. Any affected Conservation Commission shall concurrently be provided a copy of the written request. In addition to the information required in Condition 23, the request shall include the following:

- a. location, extent, and type of activity(ies);
- b. the date on which the activity(ies) is expected to start and end;
- c. a comparative summary of the projected daily average production rate and the actual daily average production rate;
- d. an explanation of why the activity will fail to conclude within the permitted timeframe;
- e. an account of any supplemental efforts/alternatives to keep the activity on schedule;
- f. an evaluation by a qualified professional of the impact of continued work outside the permitted timeframe on the species of concern;
- g. a description of any efforts that will be made to minimize the impacts of said activity on the species of concern; and
- h. an explanation of the basis for any requested change other than an extension.

The Department, the permittee, and other appropriate agencies will evaluate the significance of the potential impacts. The Department may request, and the permittee shall provide, any supplemental information necessary to make this assessment. After consultation with the appropriate agencies, any extension of the work window may be granted at the sole discretion of the Department, which may require development of a monitoring plan for implementation, if necessary, and determination of the requirements for mitigation. The frequency and severity of exceedances of the work windows shall be used to determine the extent of mitigation that will be required, if any.

25. Within 60 days from the date of completion of the construction of the pipeline, the permittee shall submit a bathymetric survey of the entire route within Commonwealth waters to MassDEP, depicting post-installation conditions, with special reference to locations where the location of the constructed pipeline differs from the proposed route. The permittee also shall provide an evaluation of the extent to which the pre-construction bottom contours were restored. At that time, a copy of the initial bathymetric survey of the original conditions also shall be provided to MassDEP.
26. Post-construction benthic habitat monitoring shall be carried out in accordance with the Environmental Monitoring Requirements appended as Attachment C and the Northeast Gateway Pipeline Lateral Final Environmental Monitoring Plan ("EMP") dated February 2007, on file with the Department.
27. In the event it is determined in accordance with the EMP that additional compensatory mitigation is due from the permittee as a result of construction related impacts to the benthic habitat, the amount and timing for payment of such compensation shall be determined in

accordance with Schedule of Compensatory Mitigation for Unanticipated Impacts appended as Attachment D.

28. All notices and submissions required herein shall be sent, as appropriate, to the attention of Alex Strycky, DEP Wetlands and Waterways Program, One Winter Street, Boston, MA 02108; by email at Alexander.Strycky@state.ma.us; by fax at (617) 292-5696; or by telephone at (617) 292-5616.

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This certification does not relieve the applicant of the obligation to comply with other applicable state or federal statutes or regulations. Any changes made to the project as described in the previously submitted Notices of Intent, 401 Water Quality Certification application, or supplemental documents will require further notification to the Department. Certain persons shall have a right to request an adjudicatory hearing concerning certifications by the Department when an application is required:

- a. the applicant or property owner;
- b. any person aggrieved by the decision who has submitted written comments during the public comment period;
- c. any ten (10) persons of the Commonwealth pursuant to M.G.L. c.30A where a group member has submitted written comments during the public comment period; or
- d. any governmental body or private organization with a mandate to protect the environment that has submitted written comments during the public comment period.

Any person aggrieved, any ten (10) persons of the commonwealth, or a governmental body or private organization with a mandate to protect the environment may appeal without having submitted written comments during the public comment period only when the claim is based on new substantive issues arising from material changes to the scope or impact of the activity and not apparent at the time of public notice. To request an adjudicatory hearing pursuant to M.G.L. c.30A, § 10, a Notice of Claim must be made in writing, provided that the request is made by certified mail or hand delivery to the Department, with the appropriate filing fee specified within 310 CMR 4.10 along with a DEP Fee Transmittal Form within twenty-one (21) days from the date of issuance of this Certificate, and addressed to:

Docket Clerk  
Office of Administrative Appeals  
Department of Environmental Protection  
One Winter Street, 3<sup>rd</sup> Floor  
Boston, MA 02108.

A copy of the request shall at the same time be sent by certified mail or hand delivery to the issuing office of the Wetlands and Waterways Program at:

Department of Environmental Protection  
One Winter Street, 6<sup>th</sup> Floor  
Boston, MA 02108.

A Notice of Claim for Adjudicatory Hearing shall comply with the Department's Rules for Adjudicatory Proceedings, 310 CMR 1.01(6), and shall contain the following information pursuant to 310 CMR 9.10(3):

- a. the 401 Certification Transmittal Number and DEP Wetlands Protection Act File Number;
- b. the complete name of the applicant and address of the project;
- c. the complete name, address, and fax and telephone numbers of the party filing the request, and, if represented by counsel or other representative, the name, fax and telephone numbers, and address of the attorney;
- d. if claiming to be a party aggrieved, the specific facts that demonstrate that the party satisfies the definition of "aggrieved person" found at 314 CMR 9.02;
- e. a clear and concise statement that an adjudicatory hearing is being requested;
- f. a clear and concise statement of (1) the facts which are grounds for the proceedings, (2) the objections to this Certificate, including specifically the manner in which it is alleged to be inconsistent with the Department's Water Quality Regulations, 314 CMR 9.00, and (3) the relief sought through the adjudicatory hearing, including specifically the changes desired in the final written Certification; and
- g. a statement that a copy of the request has been sent by certified mail or hand delivery to the applicant, the owner (if different from the applicant), the conservation commission of the city or town where the activity will occur, the Department of Environmental Management (when the certificate concerns projects in Areas of Critical Environmental Concern), the public or private water supplier where the project is located (when the certificate concerns projects in Outstanding Resource Waters), and any other entity with responsibility for the resource where the project is located.

The hearing request along with a DEP Fee Transmittal Form and a valid check or money order payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
Commonwealth Master Lockbox  
P.O. Box 4062  
Boston, MA 02211

The request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority. The Department may waive the adjudicatory-hearing filing fee pursuant to 310 CMR 4.06(2) for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file an affidavit setting forth the facts believed to support the claim of undue financial hardship together with the hearing request as provided above.

No activity may begin prior to the expiration of the appeal period or until a final decision is issued by the Department if an appeal is filed.

Failure to comply with this certification is grounds for enforcement, including civil and criminal penalties, under MGL c.21 §42, 314 CMR 9.00, MGL c. 21A §16, 310 CMR 5.00, or other possible actions/penalties as authorized by the General Laws of the Commonwealth.

If you have questions on this decision, please contact Alex Strycky 617-292-5616.

Sincerely,



Glenn Haas  
Director  
Division of Watershed Management

cc:

Karen Adams, Regulatory/Enforcement Division, U.S. Army Corps of Engineers,  
696 Virginia Road, Concord, MA 01742-2751  
Truman Henson, CZM, 251 Causeway Street, Suite 900, Boston, MA 02114-2119  
Vincent Malkoski, Division of Marine Fisheries, 838 South Rodney French Boulevard  
New Bedford, MA 02744  
Chris Boelke, NMFS, 1 Blackburn Drive, Gloucester, MA 01930  
Phil Colarusso, EPA, 1 Congress Street, Boston, MA 02114-2023  
Marilyn McCrory, DCR  
Rich Tomczyk DEP NERO  
Michael Tyrrell, TRC, Wannalancit Mills, 650 Suffolk Street, Lowell, MA 01854  
Beverly Conservation Commission, 191 Cabot Street, RM 28, Beverly, MA 01915  
Marblehead Conservation Commission, Marblehead, MA 01945  
Salem Conservation Commission, City Hall, Salem, MA 01970  
Manchester-by-the-Sea Conservation Commission, Manchester-by-the-Sea, MA

## ATTACHMENT A

### Section 61 Findings

#### General Finding

These Findings for the Algonquin Gas Transmission, LLC ("AGT") Northeast Gateway Lateral Project, including modifications to an existing gas meter station in Weymouth, Massachusetts, and construction and maintenance of a natural gas pipeline within the Commonwealth and municipalities of Manchester-by-the-Sea, Beverly, Salem and Marblehead in, over and under Filled Tidelands and Submerged Lands of Massachusetts Bay (the "Northeast Gateway Lateral" or the "Project"), have been prepared in accordance with the provisions of M.G.L. c.30, § 61 and 301 CMR 11.00. On December 1, 2006 the Secretary of Environmental Affairs issued a certificate, EOE No. 13473/13474, stating that the Final Environmental Impact Report ("FEIR") prepared for the Northeast Gateway Lateral and its associated project, the Northeast Gateway Deepwater Port proposed by Northeast Gateway Energy Bridge, LLC, complied with the MEPA statute and regulations.

A description of the potential impacts and the associated mitigation measures associated with the Northeast Gateway Lateral as currently proposed is provided in Table A. These Findings and the mitigation measures described in Table A are based principally on the Proposed Section 61 Findings provided by AGT and Northeast Gateway Energy Bridge, LLC and included as Attachment 1-3 within Appendix I to the FEIR. MassDEP acknowledges that some of the compensatory mitigation projects described on Table A and required as mitigation conditions under MassDEP's permits represent joint commitments by AGT and Northeast Gateway Energy Bridge, LLC.

As the Project is currently described, it will require the following MassDEP permits: a waterways license (the subject of this Written Determination) and a water quality certification pursuant to 314 C.M.R. 9.00.

Based on its review of the MEPA documents, the permit application, public comments and MassDEP's regulations, MassDEP finds the terms and conditions to be incorporated into the permits required for the Project and the mitigation commitments set forth in the attached Table A will constitute all feasible measures to avoid damage to the environment and will minimize and mitigate such damage to the maximum extent practicable for those impacts subject to MassDEP's authority. Implementation of the mitigation measures will occur in accordance with the terms and conditions set forth in the permits.

MassDEP acknowledges that several of the mitigation measures concern impacts that are beyond the scope of MassDEP's jurisdiction. MassDEP confirms the significance of those

commitments in avoiding or minimizing adverse impacts from the Project, even though those commitments are not included as requirements under MassDEP's permits.

**ATTACHMENT A**  
**Table A - Summary of Proposed Mitigation**

<b>EIR Category</b>	<b>DEP Permit</b>	<b>Impact</b>	<b>Mitigation Measures</b>
Geology and sediments	Waterways License	Potential alteration of the sea floor habitat due to construction	Selection of route through soft substrate.
			Choice of post-lay plow ("PLP") as the primary construction method to ensure that the duration of the construction will be as short as feasible.
			Use of a single pass of the PLP to lower the pipeline over the majority of the route to minimize impacts to sediments and geologic resources.
			Use of a single pass of the backfill plow for a majority of the pipeline route.
			For the limited areas where jetting is required to excavate the pipeline trench (pipeline transitions for the utility crossing and tie-ins), backfilling will utilize diver-placed sandbags (and/or concrete mats) or, depending on the operational requirements of the site, importation of sand or rock placed by tremie tube. No imported backfill material will be dumped from vessels on the surface.
			Use of mid-line buoys on all anchor cables to minimize sea floor impacts and the release of sediments from cable sweep.
			Funding of \$3 million to support sea floor mapping activities and habitat characterization to be managed by the Office of Coastal Zone Management, in consultation with other resource agencies.

EIR Category	DEP Permit	Impact	Mitigation Measures
			Implementation of the construction contingency plan and reporting procedures required by all applicable state and federal permits, licenses and memoranda of understanding.
Marine Water Quality	Waterways License and Water Quality Certification	Potential impacts from increases in turbidity, depletion of water column dissolved oxygen, increases in water column nutrient levels from disturbed sediments, changes in water column temperature, resuspension of contaminated sediments, construction vessel intakes and discharge, sea water uptake and discharge of hydrostatic test water, or accidental spills and releases	Mitigation measures described above
			Hydrostatic test water intake velocity will be less than 0.5 feet per second (ft/s), the applicable criterion under USEPA's rules under § 316(b) of the Clean Water Act.
			Implementation of Spill Prevention Control and Countermeasure Plans to minimize the potential impacts of any unintentional fuel spills or similar releases.
			Although not anticipated, if blasting is determined to be required, AGT will prepare a Blasting Mitigation Plan in consultation with MassDEP and state and federal resource agencies.
Implementation of the Environmental Monitoring Plan required under MassDEP's permits.			
Plankton, Benthic Organisms, Shellfish and Finfish	Waterways License and Water Quality Certification	Potential impacts from impacts on marine water quality, substrate alteration, habitat alteration or loss or accidental spills and releases	Mitigation measures described above
			Selection of and limitation from May to November time of the year for construction.
			Funding of \$.15 million to support research and educational programs of the New England Aquarium.
			Funding of \$.6 million to the New England Aquarium to direct and manage a study of the biological impacts of the exclusion zone to be created by the Northeast Gateway Deepwater Port.

EIR Category	DEP Permit	Impact	Mitigation Measures
<p>Marine Mammals and Threatened and Endangered Species</p>	<p>Waterways and Water Quality Certification</p>	<p>Potential impacts from physical harassment, vessel strikes, habitat alteration, acoustic harassment, alteration of prey species and abundance, entanglement, ingestion of marine debris, fuel spills, impingement and entrainment or bioaccumulation</p>	<p>Mitigation measures described above</p>
			<p>Implementation of the Marine Mammal/Sea Turtle visual monitoring plan described in Appendix I to the FEIR.</p>
			<p>Implementation of and funding of \$3.25 million for the Northeast Gateway Marine Mammal Detection, Monitoring, and Mitigation Plan, a system of passive acoustic buoys and contingency plans required under federal permits.</p>
			<p>Funding of \$.75 million for a right whale management and research.                       Prior to initiation of construction work, all crew members on vessels will undergo environmental training, a component of which will include the procedures regarding sighting of marine mammals and sea turtles.</p>
<p>Cultural</p>	<p>Waterways License and Water Quality Certification</p>	<p>Potential impacts to possible post-contact cultural resources</p>	<p>Implementation of the unanticipated discoveries plan consistent with the requirements of the Massachusetts Historical Commission and the Massachusetts Board of Underwater Archaeological Resources.</p>
			<p>Location of the route to avoid impacts to identified potential cultural targets by establishing and maintaining a minimum buffer in all directions around the detectable the limits of each target.</p>
			<p>Funding of \$.15 million to support activities of the Gloucester Maritime Heritage Center related to the Stellwagen Bank National Marine Sanctuary exhibit and programs to preserve Gloucester's maritime heritage.</p>



EIR Category	DEP Permit	Impact	Mitigation Measures
Socio-Economics	Waterways and Water Quality Certification	Potential impacts to commercial fisheries, recreational fisheries, local populations, economies and property values	Mitigation measures described above.
			Establishment of the communications plan required under the Waterways license.
			Demarcation of the anchor corridor to minimize the possibilities of lost year.
			Funding of \$6.3 million to capitalize a non-profit organization to buy/lease fisheries permits and Days at Sea for the inshore groundfish fleet, and to compensate for loss of gear.
			Funding of \$1.7 million for potential impacts to commercial lobstermen, including loss of gear.
			Funding of \$.9 million for a female lobster v-notch catch and release program.
Ocean Use, Recreation and Visual Resources.	Waterways License and Water Quality Certification	Potential impacts to the Massachusetts Bay disposal site, recreational activities, visual resources, and the general public interest represented by the public trust doctrine and the Massachusetts Ocean Sanctuaries Act	Mitigation measures described above.
			Funding of \$5.3 million to support infrastructure improvements and transportation to the Boston Harbor Islands.
			Funding of \$.65 million to maintain and/or construct public access boat ramps.
			Funding of \$.15 million to support public access and environmental programs of the Salem Sound Coastwatch.

<b>EIR Category</b>	<b>DEP Permit</b>	<b>Impact</b>	<b>Mitigation Measures</b>
			Funding of \$.6 million to support research buoys and other equipment of the Gulf of Maine Ocean Observing System.
Other General Impacts	Waterways license and Water Quality Certification	Generalized Impacts not Covered by Above	AGT will retain third party environmental inspectors who will have "stop task" authority through the chief inspector or vessel superintendent.

# FINAL NORTHEAST GATEWAY PIPELINE LATERAL

## CONSTRUCTION CONTINGENCY PLAN AND REPORTING PROCEDURES

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**February 2007**

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## 1.0 INTRODUCTION

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Algonquin Gas Transmission, LLC (“Algonquin”) has applied to the Federal Energy Regulatory Commission (“FERC”) for a Certificate of Public Convenience and Necessity under Section 7 of the Natural Gas Act (15 U.S.C. 717, et seq.). Algonquin is requesting authorization to construct, own and operate an approximately 16.1-mile long, 24-inch diameter natural gas steel pipeline that will interconnect the proposed Northeast Gateway Energy Bridge™ Deepwater Port (“Northeast Port” or the “Port”) with Algonquin’s existing offshore natural gas pipeline system in Massachusetts Bay (“HubLine”). Algonquin’s proposed Northeast Gateway Pipeline Lateral (the “Pipeline Lateral”) will facilitate the delivery of regasified liquefied natural gas (“LNG”) from the Northeast Port to onshore markets in New England.

Northeast Gateway Energy Bridge, L.L.C. (“Northeast Gateway”) has applied to the U.S. Maritime Administration for a Deepwater Port License to construct and operate the Northeast Port. The Port will consist of two subsea Submerged Turret Loading™ (STL™) buoys, each with a flexible riser assembly and a manifold connecting, via a steel flowline, to the subsea Pipeline Lateral. Northeast Gateway will utilize a fleet of specially designed Energy Bridge™ Regasification Vessels (“EBRVs”), each capable of transporting approximately 2.9 billion cubic feet (“Bcf”) of natural gas. The mooring system is designed to handle larger vessels which may come into service in the future. The EBRVs will dock to the STL™ buoys, which in turn will serve as both the single-point mooring system for the vessels and the delivery conduit for natural gas.

During the permitting process, Algonquin participated in several discussions with federal and state regulatory and resource agencies regarding the development of a detailed contingency plan in order to reach advance agreement on appropriate responses to issues that may arise during construction. References to the development of such a contingency plan appear in the Draft and Final Environmental Impact Statements/Reports (“DEIS/EIR”, “FEIS/EIR”, respectively) prepared by the United States Coast Guard (“USCG”), in the Certificate on the FEIR issued by the Secretary of the Executive Office of Environmental Affairs, and in several agency comment letters.

Algonquin has prepared this Construction Contingency Plan and Reporting Procedures (the “Plan”) to identify the specific decision making procedures and actions that Algonquin will implement during construction in the event certain situations arise. The Plan addresses the construction of the Pipeline Lateral with emphasis on the approximately 12-mile segment that is located within State waters.

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## **2.0 PROJECT PLANNING TO MINIMIZE CONSTRUCTION ISSUES**

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Algonquin has approached the design, development and permitting of the Pipeline Lateral with due consideration for the potential for change during the course of construction as well as incorporating lessons learned from the development and construction of the HubLine Project. As a result, Algonquin has developed the plans and procedures for construction of the Pipeline Lateral so as to minimize the opportunity for unknowns to occur during the course of the work.

This Section describes that planning. The following sections address the planning for contingencies that may nevertheless arise.

The engineering of the Pipeline Lateral has proceeded with the goal of establishing routing, construction methodologies, and timing that would maximize the ability to execute the work with predictable results. An assessment of project risks was performed and resulted in specific decisions taken to minimize construction issues, such as:

### **2.1 Burial**

- ◆ Selection of a route with soil conditions that allow predictable burial and installation durations.
- ◆ Avoidance of locations such as the Precautionary Area where the need for extensive depth of burial is required.
- ◆ Performance of extensive geophysical and geotechnical surveys to confirm that the route locations were optimally selected.

### **2.2 Weather Downtime**

- ◆ Selection of a time-of-year period for construction that minimizes potential impacts from weather delays and impacts to the marine environment.
- ◆ Development of a construction schedule with reasonable allowances for mobilization of the contractor prior to commencement of in-field work and for traditional weather downtime delays.

### **2.3 Construction Methodology**

- ◆ Selection of construction equipment and techniques that are proven, such as plowing, backfill plowing, and pipeline flooding prior to backfilling.
- ◆ Plan for optimized construction vessel and location usage so as to minimize the overall construction duration.
- ◆ Proceed with the construction contracting process earlier than normal in order to secure the appropriate resources, equipment and personnel necessary to execute the work.

### **2.4 Regional Considerations**

- ◆ Avoidance of shipping lanes and lightering areas so as to minimize any issues related to the location of the pipeline and the shipping industry that would necessitate a requirement of increased depth of burial of the pipeline.
- ◆ Address the general lack of experienced marine pipeline construction contractors in the local area by retaining experienced marine pipeline contractors.

### 3.0 CONSTRUCTION SCHEDULE

Algonquin has consulted with federal and state marine resource agencies regarding time-of-year constraints on construction activities. A comprehensive discussion on this subject is presented in the FEIS/EIR for the Port and Pipeline Lateral. Based on this consultation, Algonquin is planning to construct the Pipeline Lateral beginning in May, 2007 and finishing at the end of November, 2007, assuming all permits are received in the first quarter of 2007. With this schedule, activities will occur during a period when impacts to water quality and to the majority of marine resources present along the Pipeline Lateral will be minimized.

As part of the consultation process, the construction activities planned on a month-by-month basis were the subject of lengthy discussions at inter-agency meetings. A summary of the construction activities is included in Appendix A, which presents a detailed list of the planned activities and the proposed sequence of each activity. The schedule includes an approximately 25 percent contingency factor for weather-related downtime, which is based on Algonquin's experience with HubLine.

Factoring in other lessons from HubLine, Algonquin took a conservative approach with regards to a number of construction operations. For example, there is a time allowance for the removal of seafloor obstructions that could inhibit plowing operations even though the seafloor surveys did not reveal any obstructions large enough to impede plowing. There also is a time allowance for the possibility of remedial cover placement, even though the plow is expected to lower the pipeline to the target depth without encountering any unidentified obstacles that would require remedial cover over the pipe. These various schedule components, coupled with the fact that the proposed pipeline burial operation is more predictable, provides a high degree of confidence in the construction schedule.

Nevertheless, Algonquin has identified several scenarios that may cause delays to the planned construction activity and the overall schedule. Table 3-1 outlines several "global" scenarios and their proposed contingency measures.

Table 3-1. Global Issues that Could Impact the Overall Schedule

Issue/Scenario	Notification by Algonquin if Schedule Delay is Imminent or Likely	Evaluate Impact	Contingency Measures/Actions
Delay in construction vessels mobilization/arrival	Notify DEP contact within 48 hours of notice from Contractor.	Assess the length of the delay and evaluate impact to project schedule.	If the construction start date is delayed consult with the contractor to supply additional diving systems for the plow barge to assist with the "critical path" activities.
Significant mechanical failure(s)	Notify DEP contact within 48 hours if mechanical failure may impact schedule.	Discuss options with contractor and evaluate schedule impact.	Require the contractor to provide redundant systems where possible and/or replacement parts for components that are most likely to experience failure.
Pipeline damage resulting during pipelay operations	Notify DEP contact within 48 hours.	Identify condition. Assess length of pipe affected.	Remove and Recover damaged pipe. Reinitiate pipe lay once damaged pipe has been removed. Additional pipe has been manufactured and concrete coated in order to be available to address this situation.
Pipeline damage discovered post-pipelay	Notify DEP contact within 48 hours.	Identify location of damage. Plan pipeline repair utilizing contingency repair materials.	Ship contingency materials to project site -- fittings, pipe, etc.
Pipelay -- pipeline segment does not	Notify DEP contact within 48 hours.	Review plan for start up and lay down	If pipeline does not land in target box, correct cable length or pipeline length on lay barge.

Table 3-1. Global Issues that Could Impact the Overall Schedule

Issue/Scenario	Notification by Algonquin if Schedule Delay is Imminent or Likely	Evaluate Impact	Contingency Measures/Actions
land in required target box		procedures.	
Slower than expected progress of pipelay.	Notify DEP contact within 48 hours.	Review options with contractor and overall schedule impacts.	Isolate issue causing delay and work with contractor to increase progress if the issue is not mechanical.
Delay during Port construction activities that impacts Pipeline Lateral schedule	Notify DEP contact within 48 hours.	Review options with contractor and overall schedule impacts.	Prioritize contractor to minimize impacts.
Marine Mammal Presence within Construction Zone	Notify DEP contact within 48 hours	Review options with contractor and overall schedule impacts.	Implement procedures and notifications outlined in the Marine Mammal Detection Plan.
Port and Pipeline Lateral Vessel Coordination During Construction	Notify DEP contact within 48 hours	Review critical path activities.	The Scope and Construction Contract combines as many like activities as possible into one contract, utilizing non-conflicting vessels when possible such as tugs to install buoys, and thorough planning of the work activities.



## 4.0 CONSTRUCTION-RELATED ACTIVITIES AND ASSOCIATED CONTINGENCY MEASURES

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In this Section of the Plan, Algonquin has evaluated several scenarios whereby deviations in the proposed construction techniques may occur during the course of construction. For these scenarios, a probable contingency action has been developed to mitigate the impact.

### 4.1 Project Survey Plan

Algonquin is working with the contractor to finalize the survey program and ensure that the appropriate equipment and methods are deployed to provide real time evaluation of progress throughout construction on a daily basis, including assessment of the top of pipe ("TOP") elevation following plowing activities.

Three primary survey events as outlined below are planned:

- ◆ Post Plow Survey – This survey will be performed on a daily basis during plowing to determine the TOP elevation and confirm information obtained from the aft facing sonar. Evaluation of this data will identify any segments of pipe which do not meet the project lowering specifications and require contingency measures to be implemented.
- ◆ Post Flood Survey – Once the Post Plow survey of the Pipeline Lateral's entire length has been evaluated and determined to meet or exceed the lowering requirements, the pipeline will be flooded. Following the flooding process, the ROV survey will be performed again to re-establish and confirm the TOP elevation prior to commencement of backfill plowing operations.
- ◆ Post backfill survey – This survey will be performed daily during backfill plowing. The results of the survey will be used to provide the final project as-built drawings which identify the post construction contours throughout the impact area as well as the centerline of the as-built pipeline.

The following list of survey equipment that may be deployed throughout the construction process (where applicable) primarily focuses on plowing and backfill plowing since the TOP elevation is the most critical aspect of the installation process.

- ◆ **Plow equipped sonar**

The plow is equipped with forward facing and aft facing sonar that is primarily used by the plow operators to control, monitor, assess and correct (or operate) the plow. The forward facing sonar is used by the plow operators to ensure route obstructions are not encountered. The aft facing sonar provides real time, scalable images of the trench. The plow operator uses the trench information to ensure the depth of cut meets or exceeds project requirements. Although the aft facing sonar provides the first indication of the trench geometry, definitive measurements of the TOP elevation cannot be obtained because the pipe does not come to rest at the bottom of the trench for several hundred feet behind the plow.

The backfill plow is also equipped with the same sonar devices. In the case of the backfill plow, the forward facing sonar is primarily used for guidance and the aft facing sonar provides details of the seafloor shape immediately behind the plow.

- a. **Plow performance monitoring**

In addition to the forward and aft facing sonar, the plow is equipped with a number of sensors which provide information regarding the plow's attitude (pitch and roll), tow forces, as well

as forces exerted on the pipeline. The operators use this information in conjunction with the sonar images to operate the plow at or near maximum capacity.

**b. ROV mounted multibeam sonar**

Multibeam sonar surveys will be used to determine the elevation of the TOP. The ROV mounted multibeam survey will provide high resolution data of the TOP position (horizontal and vertical components) elevation as well as the trench geometry, spoil pile width, and information concerning the seafloor outside of the impact zone.

The following table illustrates the anticipated process between data collection, processing, evaluation and reporting. This is a reasonable best case scenario for completing the process with confidence that the information is accurately presented.

Day 1	Day 2	Day 3	Day 4	Day 5
Plow 1 mile	Survey collection	Process and begin assessment	Complete assessment, team review, and prepare for presentation	Present report summary of Day 1 production and cumulative data.

## 4.2 Pipeline Lowering

Algonquin proposes to utilize post-lay plowing ("PLP") as the primary method of pipe lowering. PLP is planned for all segments of the Pipeline Lateral with the exception of some discrete sites along the route as discussed below.

Detailed pre-construction survey results show no indication of bedrock, glacial till, or other non-plowable hard substrate along the centerline of the Pipeline Lateral route. Based on this information, it is likely that one pass of the plow will lower the TOP to the design target of 3.0 feet or a minimum of 1.5 feet below the sea floor. One pass of the vessel minimizes the impacts due to anchor placement and reduces the overall duration of the burial segment of the project. In the instances where this is not possible, remedial methods will be utilized to bury or otherwise protect the pipeline.

At discrete sites along the pipeline route, it will be necessary to excavate sediment that cannot be removed by the plow. These sites include the HubLine at the location of the hot tap, the in-line sidetap assembly at the Pipeline Lateral end, the crossing of the Hibernia and unidentified cables, and any unforeseen locations where the plow is unable to lower the pipeline. A jetting tool will be utilized to perform this excavation and it will typically be deployed from the diving vessel.

### 4.2.1 Inability to Achieve the Minimum Lowering Depth after One Plow Pass

Algonquin has identified several scenarios in which the pipeline would be insufficiently lowered during the plowing process. The scenarios and the likely action taken to address each are shown in Table 4-1 and Table 4-2 below. In the event the top of the pipeline has been lowered less than 1.5 feet below the sea floor following one pass of the plow, several options are available to remediate the condition.

#### 4.2.1.1 The Use of a Second Plow Pass

The use of a second plow pass for isolated segments may be appropriate to address insufficient lowering, depending upon the length and location of the non-lowered section of pipeline. It should be noted, however, that there are technical limitations for a plow to be able to initiate and terminate plowing in the middle of a section of the pipeline route that has already been plowed. In addition, performing a second pass of the plow will extend the schedule beyond what has been stated and will increase the anchor/cable sweep impacts. From a timing perspective, the results associated with the first mile or two of plowing along each pipeline segment will be a lead indicator for assessing the effectiveness of the lowering operation. A determination as to the use of a second plow pass will be dependent upon the reasons for the deficient first pass of the plow. If non-geotechnical issues resulted in the performance issue and it is determined a second pass of the plow may be effective, then a second plow pass may be considered.

Algonquin will notify the interagency group upon its determination of the need to perform a second pass of the plow (prior to commencing the second pass). The notification will update the progress of the first pass of the plow, describe the reasons for the need for the second pass, and update the construction schedule. If requested by the permit-issuing agency, Algonquin will meet with the interagency group within two business days after delivery of the notice to discuss the circumstances. Algonquin may initiate the second pass of the plow on the third business day after the delivery of the notice unless within those two business days it and the permit-issuing agency determine otherwise.

#### 4.2.1.2 The Use of Jetting to Lower the Pipeline Following Plowing

At discrete sites along the pipeline route, including the HubLine hot tap, the Pipeline Lateral end, the in-line sidetap assemblies, and the crossing of the Hibernia cable, Algonquin is planning to excavate sediment using a jetting tool. Other than at these planned locations, there may be instances where the first pass of the plow does not lower the pipeline to the target depth due to the presence of glacial till or other compact sediments. As indicated in Table 4-1, in such site-specific locations that measure less than 1,500 feet in length, in lieu of conducting a second pass of the plow or placing rock cover over the pipeline, Algonquin will consider the deployment of a jet sled or diver-assisted jetting tool to attempt to lower the pipeline. The specific scenarios that may trigger this determination are outlined in Table 4-1.

As discussed in Section 4.1, Algonquin will be evaluating the performance of the first pass of the plow and, shortly after the completion of plowing in each segment, will know the specific locations where the pipeline has not been lowered to the target burial depth. Depending on the survey information obtained, Algonquin may collect additional geotechnical data to assist in determining why the plow was not completely successful and to evaluate whether jetting will be effective.

After its evaluation of the condition at a particular area, Algonquin may determine to use diver hand jetting (areas less than 250' long) or the jet sled to lower the pipeline to the target depth. Algonquin may proceed with the jetting operations except where the material that requires jetting consists of marine clay. In that instance, Algonquin will notify the interagency group of the location and will provide the supporting information collected by Algonquin prior to initiating jetting. If requested by the permit-issuing agency, Algonquin will meet with the interagency group within two business days after delivery of the notice to discuss the circumstances. Algonquin may proceed with the jetting operation on the third business day after the delivery of the notice unless within those two business days it and the permit-issuing agency determine instead to use placement of rock or concrete mats to achieve the required cover.

Table 4-1. Scenario A – General Condition: Insufficient Lowering of the Pipe in Plowable Sediments and No Geotechnical Obstruction(s)

Cause	Evaluate Impact	Contingency Measures/Actions	Notification by Algonquin if Contingency Measure/Action Ineffective
An isolated segment of the pipeline, less than 250 feet in length has not been lowered adequately.	Use ROV to video the segment.  Collect grab sample of the sediment in the trench. Couple recorded plow data for segment with ROV video and grab sample to assess cause of condition.	Diver hand jets segment to lower the pipe.  If sediment assessment reveals sediment too consolidated for hand jetting, deploy the jet sled.  If the pipeline is within 6 inches of proper depth, jetting is the most effective corrective measure. Hand jetting is the first choice.  If the pipeline cannot be lowered, see Scenario B	Notify DEP contact within 48 hours of implementing the contingency measure.
An isolated segment of the pipeline, between 250 and 1,500 feet that has not been lowered adequately – between flush cover and 20" below grade.	Use ROV to video the segment.  Collect grab sample of the sediment in the trench. Couple recorded plow data for segment with ROV video and grab sample to assess cause of condition.	Coordinate diving operations to deploy jet sled  If the spoil remains following jetting, utilize typical backfill plowing to cover the pipeline. If spoil is depleted, see Scenario B.  If the pipeline cannot be lowered, see Scenario B.	Notify DEP contact within 48 hours of implementing the contingency measure.
An isolated segment of the pipeline, between 250 and 1,500 feet that has not been lowered adequately – flush cover or less cover.	Based on existing sediment information, this condition is highly unlikely unless an obstruction exists.  Evaluate plow operational data to make assessment of the problem/condition.	Perform additional assessment of sediment with divers and ROV video in attempt to identify cause of condition.  Determine if deployment of a jet sled, a second plow pass or mat/rock cover is required.  If the spoil remains following jetting, utilize typical backfill plowing to cover the pipeline. If spoil is depleted or pipe cannot be lowered, utilize divers to place sandbags, rocks or concrete mats to achieve minimum cover requirement.	Notify DEP contact within 48 hours of implementing the contingency measure.
An isolated segment of the pipeline greater than 1,500 feet in length that has not been lowered adequately – between flush cover and 20" below grade.	Use ROV to video the segment.  Collect grab sample of the sediment in the trench. Couple recorded plow data for segment with ROV video and grab sample to assess cause of condition.	Adjust construction plan and schedule to accommodate 2nd pass of the plow.  Perform 2nd plow pass Assess operational feedback during 2nd pass and post plow survey to ensure the TOP has been lowered adequately.  If the pipeline still remains not lowered, see Scenario B.	Notify DEP contact within 48 hours of implementing the contingency measure.
Multiple segments of any length that	Use ROV to video the segment.	Adjust construction plan and schedule to accommodate 2nd pass	Notify DEP contact within 48 hours of implementing the

Table 4-1. Scenario A – General Condition: Insufficient Lowering of the Pipe in Plowable Sediments and No Geotechnical Obstruction(s)

Cause	Evaluate Impact	Contingency Measures/Actions	Notification by Algonquin if Contingency Measure/Action Ineffective
total 1,500 feet or more in any mile of distance that has not been lowered adequately – between flush cover and 20" below grade.	Collect grab sample of the sediment in the trench. Consider recorded plow data for segment with ROV video and grab sample to assess cause of condition.	of the plow.  Perform 2nd plow pass Assess operational feedback during 2nd pass and post plow survey to ensure the TOP has been lowered adequately.	contingency measure.

Table 4-2. Scenario B – General Condition: Insufficient Lowering of the Pipe Due To A Geotechnical Obstruction(s)<sup>1</sup>

Cause	Evaluate Impact	Contingency Measures/Actions	Notification by Algonquin Upon Completion of Contingency Measure/Action
An isolated segment of the pipeline, less than 2,500 feet in length that cannot be lowered a minimum of 18" below the seabed.	Identify location of condition and adjust Diving Scope to include corrective measures.  Determine amount of protective cover required – single mat layer or multiple mat layers.	Diver installation of mats along location of condition and through 50% of the transition until the TOP elevation meets permit condition. Ensure 18" of cover is achieved by the combination of sediment and the placement of concrete mats.	Notify DEP contact within 48 hours of implementing the contingency measure.
An isolated segment of the pipeline, greater than 2,500 feet in length that cannot be lowered a minimum of 18" below the seabed.	Identify location of condition and adjust Diving Scope to include corrective measures.  Implement procurement of rock, additional equipment (scows, tugs, dockside support) and preparation of contractor equipment for tremie operation.	Install rock via tremie operation along the identified segment. Ensure 18" of cover is achieved by the placement of rock.	Notify DEP contact within 48 hours of implementing the contingency measure.
Multiple segments that accumulate to a length exceeding 2,500 feet and do not meet the lowering requirements.	Implement procurement of rock, additional equipment (scows, tugs, dockside support) and preparation of contractor equipment for tremie operation.	Install rock via tremie operation along the identified segment. Ensure 18" of cover is achieved by the placement of rock.	Notify DEP contact within 48 hours of implementing the contingency measure.

#### 4.2.1.3 Remedial Material Placement

In the event that a second pass of the plow would not be effective remedial material placement becomes the primary option to address the insufficient lowering. An example would be in the case where a large boulder was encountered, the methods available include the use of divers to place sand/cement bags over the area, the use of divers or an ROV to place concrete mats over the area, or the use of a vessel equipped

<sup>1</sup> This condition assumes the plowing operation stalled due to obstruction impact and that the obstruction has been confirmed by divers, ROV, or plow sonar equipment.

with a tremie tube to place rock over the area. The number and length of segments that require remedial cover would be considered before a final determination is made for the appropriate remediation method. It is possible a combination of these methods may be used. These measures and their applicability are discussed below:

- ◆ If the length of the pipeline segment requiring remedial cover is relatively short, diver-placement of sand/cement bags will be the most efficient and timely method for providing the minimum 1.5 feet of cover over the pipeline. Sand/cement bags are readily available and can be placed by one or more of the diving or ROV-equipped vessels.
- ◆ The use of concrete mats is also likely to be selected when a shorter length of pipeline has not been lowered sufficiently. The length of segment over which concrete mat placement is optimized is dependent upon the location along the route and the subsequent water depth. When compared to sand/cement bag or rock placement, habitat conversion using concrete mats is more controlled and minimized. Concrete mats are 20 feet in length and 8 feet in width. For discrete isolated segments, placement of concrete mats provide the best seafloor profile because the mats have a low, articulated profile that allows them to flex and lay flat over the pipeline. The installation of concrete mats at discrete locations limits the amount of time required to remedy the issue. Over time, the concrete mats or a portion of the mats will also silt in and thereby provide soft sediments as well as hard substrate.
- ◆ For longer segments of the pipeline where the minimum depth of lowering has not been achieved, placement of rock via tremie tube is an option. The efficiency of placing larger quantities of material is the main attribute of a tremie placement system. However, its cost, availability and weather sensitivity are all greater than placement of mats or sand/cement bags.

#### 4.3 Pipeline Cover

The backfill plow ("BFP") operations will follow the PLP operations. Displaced spoil will be returned to the pipe trench to the extent possible considering the efficiency of the BFP such that a minimum of 1.5 feet of sediment covers the pipeline. The BFP is a guided tool designed with reversed mold boards that pull the displaced spoil back into the trench. It is pulled along the pipeline by a towing vessel in a manner similar to the PLP. The backfilling operation will involve one pass with the BFP.

The operation of the backfill plow is less complex because the apparatus does not attach to nor interface with the pipeline during the backfill operation. The BFP also utilizes for and aft facing sonar. The forward facing sonar is used to guide the BFP along the trench. The rear facing sonar will be the first indication of the finished contours over the pipeline.

Plow transitions associated with the two utility crossings will be filled with diver-placed sandbags and covered with concrete mats. Areas outside of the mats will be backfilled with diver-placed sandbags or with sand placed with a tremie vessel. Plow transitions associated with the tie-ins at the hot tap and the side tap assembly at the ends of the Pipeline Lateral will be jetted to depth using a diver assisted jet sled and covered with sand bags and concrete mats, where required by the design drawings.

The duration between plowing and backfill plowing is relatively short (less than 30 days), assuming the single pass of the PLP is successful. The sediment transport study conducted by Algonquin indicates that measurable erosion of the spoil mounds is unlikely, even in significant storm events and especially as a result of normal tidal influences. It is reasonable to anticipate that spoil will remain in place along the entire pipeline and will be available for backfill operations.

Algonquin has evaluated several scenarios involving insufficient cover over the pipeline upon completion of the backfill plowing process. The scenarios and the likely action taken to address each are shown in the Table 4-3 below.

Table 4-3. Scenario C – Pipeline Has Been Lowered Adequately But Does Not Have Required Cover

Cause	Evaluate Impact	Contingency Measures/Actions	Notification by Algonquin Upon Completion of Contingency Measure/Action
An isolated segment of the pipeline, less than 2,500 feet has less than 18 inches of cover, excluding plow transitions.	Identify position of segment. Assess volume of material required to meet permit cover condition.	Procure sand and implement logistics for transport, creation and deployment of biodegradable sand bags.  Modify diving schedule to include sand bag placement.  Perform post placement multibeam survey to ensure adequate cover.	Notify DEP contact within 48 hours of implementing the contingency measure.
Multiple segments that accumulate to a length exceeding 2,500 feet that do not meet the cover requirements.	Identify position of segment. Assess volume of material required to meet permit cover condition.	If the combination of segments exceeds 2,500 feet in total length, implement procurement of sand, additional equipment (scows, tugs, dockside support) and preparation of contractor equipment for tremie operation to place sand. Ensure 18" of cover is achieved by the placement sand.	Notify DEP contact within 48 hours of implementing the contingency measure.
Backfill Plow deviated from the alignment for an isolated segment for less than 250 feet such that the cover requirement was not achieved and the spoil remains adjacent to the trench	Use ROV survey data to identify position of segment.	Confirm spoil available. Deploy divers to hand jet spoil back into trench. Resurvey to ensure cover achieved.	Notify DEP contact within 48 hours of implementing the contingency measure.
Backfill Plow deviated from the alignment for an isolated segment greater than 250 feet such that the cover requirement was not achieved and the spoil remains adjacent to the trench	Use ROV survey data to identify position of segment.  Confirm spoil available.	Perform second pass of the backfill plow. Resurvey to ensure cover achieved.	Notify DEP contact within 48 hours of implementing the contingency measure.

#### 4.4 Restoration

Upon completion of the single pass of the backfill plow to restore bottom contours, a bottom survey will be performed when all operations are complete to ensure that the seafloor elevations along the pipeline route have been sufficiently restored. The sea floor in the trench area may remain somewhat irregular after backfilling, with noticeable undulations above and below the original grade. Limitations in the ability of existing offshore pipeline construction equipment to exactly match contours, particularly in water over 200 feet deep, limit the ability to match precisely the pre-construction contours. However, the HubLine post-construction surveys show that in areas where only plowing and backfill plowing were

used, the contours more closely match pre-existing conditions than areas that also involved dredging, jetting, or blasting.

Algonquin has evaluated several restoration scenarios that may occur after the backfill plow pass is completed. These scenarios and the likely actions taken to address each are shown in Table 4-4 below.

Table 4-4. Scenario D – Pipeline Has Been Lowered Adequately and Has Required Cover

Cause	Evaluate Impact	Contingency Measures/Actions	Notification by Algonquin
Spoil mounds adjacent to trench <sup>1</sup>	Determine profile in relation to adjacent seafloor elevation	None	Notification to DEP after as-built survey and data processing.
No spoil mounds left but minor depression in the trench	Determine profile in relation to adjacent seafloor elevation	None	Notification to DEP after as-built survey and data processing.

<sup>1</sup>This condition would occur as a result of minor deviations between the BFP towed alignment and the pipeline alignment. The trench would have been adequately backfilled but some spoil remains on either side of the trench. Additional measures, such as a 2<sup>nd</sup> pass of the BFP could displace spoil over the trench, would require the BFP to be towed off alignment and may cause the skids to displace less consolidated backfill within the trench.

#### 4.5 Reporting Construction Progress

One key aspect of the contingency plan discussion has been the commitment by Algonquin to provide updates to the DEP on a regular basis. To facilitate this notification process, Algonquin anticipates that the DEP will designate a single point contact person. In addition to the reporting timeframes identified in the tables above for the various contingency measures, as part of the construction management process, Algonquin will be preparing a weekly progress report (see example in Appendix B) that discusses the status of construction. The weekly report will contain a summary of the construction progress on a mile by mile basis and will include the status of the overall construction schedule. Algonquin will provide a copy of that report to the DEP contact person as well as the inter-agency team that has been actively involved in the permitting process for the Pipeline Lateral including but not limited to the following individuals:

- ◆ Lealdon Langley, DEP
- ◆ Alex Strysky, DEP
- ◆ Ken Chin, DEP
- ◆ Vin Malkoski, MDMF
- ◆ Phil Colarruso, EPA
- ◆ Chris Boelke, NMFS
- ◆ Kristen Koyama, NMFS
- ◆ Truman Henson, CZM

In preliminary discussions with DEP personnel, the commitment to hold regularly scheduled bi-weekly construction progress review meetings to keep the above agencies abreast of real-time construction progress and plans was contemplated. However, meeting on a bi-weekly basis may not be practical given inherent schedule conflicts and other personnel commitments. That said, Algonquin will attend meetings as requested or deemed appropriate to keep agency personnel informed of the construction progress. Algonquin believes that the weekly reporting system will provide the necessary construction status updates to the agencies and may eliminate the need to meet on a regular basis.



For the purposes of this Plan, Algonquin does believe that there is a need to meet with the agency working group at defined times during the construction process.

- ◆ After completing the plow pass for the first mile of the Pipeline Lateral: meet upon completion of the processing of the survey data for that segment.
- ◆ Near the end of the plowing operations; and prior to commencing with the backfill operations: schedule meeting at a time certain that will not result in any vessel delays.
- ◆ Prior to initiating a second pass of the plow: schedule meeting at a time certain that will not result in any vessel delays.

In the event that a construction issue arises that falls outside of those discussed in this Plan that will require agency input and/or approval, Algonquin will notify the interagency group and will meet with the interagency group within two business days after delivery of the notice to discuss the circumstances.

**APPENDIX A**

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***Pipeline Lateral Construction Procedures by Month***

NOTE: This Appendix (7 plans) is on file with DEP.

## Attachment C

### Environmental Monitoring Requirements

Based on extensive consultation with the Department and other federal and state permitting and resource agencies, including agency review of several drafts plans, Algonquin submitted the detailed Northeast Gateway Pipeline Lateral Environmental Monitoring Plan ("Monitoring Plan") for the Pipeline Lateral dated February 2007. The final Monitoring Plan is on file at MassDEP.

Algonquin shall conduct the following activities as fully discussed in the Monitoring Plan.

#### **Annual benthic sampling, post-construction**

- July or August each year
- Minimum of three years of post-construction monitoring, commencing in the first year after the year construction is completed
- After the third year of monitoring, Algonquin may initiate a final, fourth year of monitoring for those sites that are still considered to have a moderate to high probability of an impact to the benthic infaunal community, or may determine to end monitoring and proceed with additional compensatory mitigation

#### **Type of sampling conducted each year (see Section 5.3.1 of the Environmental Monitoring Plan)**

- Sediment profile imaging (SPI) for measurement of apparent redox potential discontinuity (aRPD) depth and other physical and biological parameters
- Benthic (infaunal) species composition and abundance
- Sediment grain-size distribution, percent moisture, and total organic carbon (TOC) content
- 24 transects with 5 stations at each transect across the 16-mile long Pipeline Lateral; transect locations will be chosen from a random sample of sequentially spaced locations along the pipeline route each year

#### **Data analysis**

SPI (section 5.4.2 of the Environmental Monitoring Plan)

- Each sediment profile image will be analyzed for:
  - prism penetration depth
  - surface relief
  - aRPD layer depth
  - sediment grain-size distribution
  - surface features
  - subsurface features
  - community successional stage
  - organism sediment index
  - benthic habitat quality index

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- Analysis of variance (ANOVA) or t-Test will be used to test for differences between category levels of the qualitative parameters and between years for the quantitative parameters
- Normality will be checked using the Shapiro-Wilk test
- Homogeneity of variance will be checked with Bartlett's test
- Proportional data (e.g., proportions of stations showing physical dominance) will be analyzed using the Cochran-Mantel-Haenszel test
- Odds ratios will be tested with the Fisher Exact test

Sediment grain-size distribution, percent moisture, and TOC-content (section 5.3.1 of the Environmental Monitoring Plan)

- Grain-size distribution will be measured following methods described in ASTM D422 (sieve/hydrometer method)
- Percentage of moisture will be obtained by using the Plumb (1981) method for determining total solids
- TOC content will be measured according to the USEPA Edison, New Jersey, laboratory procedure (EPA 1986; the Lloyd Kahn procedure)

Benthic (infaunal) species composition and abundance (section 5.5.1 of the Environmental Monitoring Plan)

- All benthic samples will be sent to a benthic laboratory for sorting, identification, and counting.
- All observed infaunal organisms will be removed and transferred to taxonomists for identification.
- Organisms will be identified to the lowest practical identification level, usually species, and counted.
- Infaunal community parameters to be evaluated include:
  - Bray-Curtis similarity – used to assess the overall community by comparing the relative composition and abundance of infauna along the proposed pipeline route
  - Sander's rarefaction – to measure the diversity or richness of the infaunal community
  - Species occurrence – to allow numerically uncommon or rare species to be used in an environmental evaluation
- Selected species distributions will be evaluated by:
  - Bray-Curtis similarity
  - Rank abundance
  - Species occurrence

### Line of Evidence Approach

Section 5.5 of the Monitoring Plan of the Monitoring Plan describes a decision-making process to evaluate the probability of an impact based on data from very different environmental disciplines (e.g., SPI, sediment physical analyses, infaunal taxonomy and ecology).

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- The tiered decision-making process (Figure 1 and Table 1 below, which are reproduced from Section 5.5 of the Monitoring Plan) will be conducted by stratum to maximize the understanding of 1) the magnitude of differences detected within each line of evidence, 2) the spatial pattern of the detected differences, and 3) the concurrence among the multiple lines of evidence.
- The process assumes that the magnitude of a potential impact increases as the core area associated with the impact increases.
- The process assumes that the magnitude of a potential impact increases as the number of parameters showing detected differences increases.

Determination of the probability of an impact (below detection, low, moderate, high) for each monitoring year is based on the results obtained from each tier of the decision-making process.

If no differences are detected in *all three* of the lines of evidence, then the probability of an impact in the Area is below detection. Detection of patchy differences associated with a single or two or more concurring lines of evidence indicate a low probability of an impact. Detection of spatially connected differences associated with a single or two or more concurring lines of evidence indicates a moderate probability of an impact. Detection of a gradient without or with concurring lines of evidence indicates a moderate and high probability of an impact, respectively.

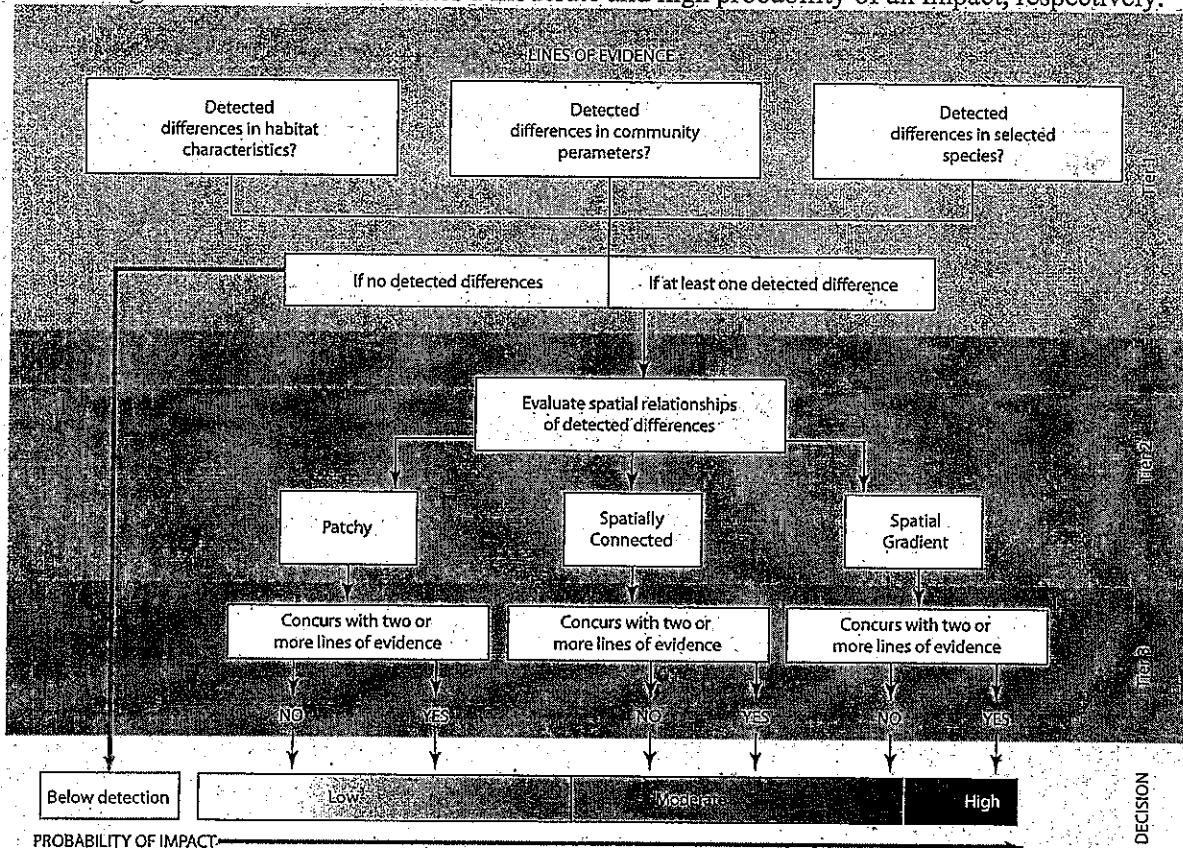


Figure 1. Tiered approach to determining the level of the probability of an impact to the structure and function of the benthic community following construction of the pipeline

**Table 1. Measurement parameters and statistical comparisons to be performed for each of the three lines of evidence.**

Line of Evidence	Measurement Parameters	Detecting Differences
Habitat Characteristics	SPI : Apparent RPD Depth, Penetration Depth, and Successional Stage  Grab sampling: Percent Fines, TOC Content, and Percent Moisture	Comparison to 25 <sup>th</sup> and 75 <sup>th</sup> percentiles from the 2006 data distribution; Kruskal-Wallis test among zones
Infaunal Community Parameters	Bray-Curtis Similarity, Sander's Rarefaction, Species Occurrence	Visual differences (nMDS plot); Mann-Whitney test of similarity between construction and non-construction zone pairs; Kruskal-Wallis test of expected number of species [ES(n)]; regression analyses of ES(n) as function of distance; Chi-square homogeneity test of # of rare, less common, common taxa
Selected Species Distributions	Bray-Curtis Similarity, Relative Abundance, Species Occurrence	Visual differences (nMDS plot); Mann-Whitney test of similarity between construction and non-construction zone pairs; K-W test on abundance among zones; comparison of rank abundance to 0.25 and 0.75 of the maximum rank; differences in selected species occurrence between years

### Schedule

- Conduct surveys each July or August following the year construction is completed.
- Analysis of samples and data will take approximately 120 days from submittal of samples
- Submit data report and analyses to MassDEP and consulting agencies in February following each year of sampling
- Report shall include a mile-by-mile summary of construction methods used for the length of the pipeline lateral in Commonwealth waters.
- Organize and participate in an interagency meeting in March following each year of sampling to discuss the data report and analyses.

## ATTACHMENT D

### Schedule of Compensatory Mitigation for Unanticipated Impacts

If post-construction evaluations or the reports submitted under the Environmental Monitoring Plan demonstrate (a) that the completed Pipeline Lateral involved conversion of soft sediment bottom to hard bottom through the application of stone or concrete mats to cover portions of the Pipeline Lateral route that were not previously identified in the permit applications and approvals as undergoing such habitat conversion ("previously unidentified habitat conversion"), or (b) after completion of post-construction monitoring, that there is a moderate or high probability that construction of the pipeline resulted in adverse impact to the benthic habitat as determined by the methodology and criteria in the Environmental Monitoring Plan, the permittee shall make compensatory mitigation payments into expendable trusts or other accounts of the Commonwealth of Massachusetts that the Department may determine for the purposes of utilizing the payments to protect and enhance marine resources and water quality, in accordance with the following:

#### Previously Unidentified Habitat Conversion of Less Than One Half Mile

1. If the total of previously unidentified habitat conversion extends between one-quarter mile and one half mile in pipeline length at any one location, the permittee shall provide \$150,000 to implement a study of the effects of the habitat conversion at that location.
2. If the total of previously unidentified habitat conversion is less than one half mile in pipeline length and also is either:
  - (a) less than one quarter mile; or
  - (b) greater than one quarter mile but not in any one contiguous location,

then compensatory mitigation shall be assessed at the rate of \$7.00 per square foot as measured by the outer boundaries of the area in which concrete mats or rocks have been deposited as described in ~~the~~ Table 4-2 of the Construction Contingency Plan and Reporting Procedures.

#### Previously Unidentified Habitat Conversion of One Half Mile or More

3. If the total of previously unidentified habitat conversion is between one half mile and 4 miles in pipeline length, compensatory mitigation for that segment shall be assessed at the rate of \$7.00 per square foot as measured by the outer boundaries of the area in which rocks have been deposited as ~~pre~~described in ~~the~~ Table 4-2 of the Construction Contingency Plan and Reporting Procedures.
4. If the total of previously unidentified habitat conversion ~~is between~~ is between ~~over~~ 4 miles and ~~but less than~~ 7 miles in pipeline length, compensatory mitigation for that segment shall be assessed at the rate of \$8.00 per square foot as measured by the outer boundaries of the

area in which rocks have been deposited as ~~prescribed in the~~ Table 4-2 of the Construction Contingency Plan and Reporting Procedures.

5. If the total of previously unidentified habitat conversion is between ~~over~~ 7 miles and ~~but less than~~ 12.5 miles in pipeline length, compensatory mitigation for that segment shall be assessed at the rate of \$8.50 per square foot as measured by the outer boundaries of the area in which rocks have been deposited as prescribed in the Table 4-2 of the Construction Contingency Plan and Reporting Procedures.

6. Any portion of the pipeline route for which the permittee makes compensatory mitigation payments under paragraphs 1 to 5 shall not be eligible for compensatory mitigation payments due to significant habitat alteration under paragraph 8.

7. Compensatory mitigation payments or study funds due under paragraphs 1 to 5 shall be paid within six months of the completion of construction.

#### **Construction-Related Impacts to the Benthic Habitat**

8. Upon completion of the post-construction monitoring under the Environmental Monitoring Plan, if for any portion of the Pipeline Lateral it is determined that there is a moderate or high probability that construction of the pipeline resulted in an adverse impact to the benthic habitat, then subject to paragraph 6, the permittee shall make compensatory mitigation payments calculated as follows:

- a) The construction impact area of impact per mile will be measured at 5,280' x 80' = 422,400 square feet per mile.
- b) A construction impact area measuring between one half mile to 3 miles in pipeline length will be compensated at the rate of \$.75 per square foot.
- c) The portion of a construction impact area measuring between 3 miles and 6 miles in pipeline length shall be compensated at the rate of \$1.00 per square foot.
- d) The portion of a construction impact area measuring between 6 miles and 12.5 miles in pipeline length shall be compensated at the rate of \$1.25 per square foot.
- e) Compensation will not accrue for construction impacts greater than 12.5 miles in pipeline length.

9. Within six (6) months of completion of construction, Algonquin and MassDEP shall mutually agree on an estimate of the amount of benthic habitat that could reasonably be expected to be adversely impacted on a long-term basis. Such estimate shall be based on the actual experience in constructing the Pipeline Lateral, the results of HubLine monitoring and other available information. Based on that estimate, Algonquin shall promptly pay the estimated compensatory mitigation calculated pursuant to the provisions of paragraph 8 into an interest-bearing escrow account. Such escrow account shall be established by Algonquin in consultation with MassDEP and governed by an escrow agreement satisfactory to MassDEP. Within six (6) months of completion of the



post-construction monitoring and determination of the compensatory mitigation required under paragraph 8, such compensatory mitigation will be paid from the escrow account. To the extent the compensatory mitigation due exceeds the funds available in the escrow account, Algonquin shall promptly pay such additional amount as directed by the MassDEP. To the extent the compensatory mitigation due is less than the amount of funds available in the escrow account, Algonquin shall be paid the difference and the escrow account closed.

10. Notwithstanding paragraphs 8 and 9, at the conclusion of the post-construction monitoring, MassDEP and Algonquin may mutually agree upon and adopt a methodology that may account for other factors such as the relative degrees of habitat quality or biological recovery within and outside the impacted constructed area and may adjust the above compensation schedule or otherwise revise the compensation methodology accordingly. MassDEP and Algonquin shall discuss this potential revision no later than 90 days after Algonquin submits the second year of post-construction monitoring data.

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<sup>1</sup> Under the Environmental Monitoring Plan, whether or not an area may have been caused sufficient impact to warrant compensation is based on a comparison of results from sampling within transects of the construction zone and parallel zones outside the construction zone (See Figure 5-4 of the Final Environmental Monitoring Plan). An area being ineligible for compensation under paragraph 6 means the contiguous area of seafloor from the outside edge of the boundary line of deposited rock running parallel with the pipeline to the edge of the construction zone shall not be subject to sampling for the purpose of determining if that area has been impacted by construction.