NOVA Chemicals (Canada) Ltd.
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April 26, 2018

By RESS and Courier

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
Suite 2700, 2300 Yonge Street
Toronto, Ontario
M4P 1E4

RE: NOVA Chemicals (Canada) Ltd.
Kimball Pipeline Replacement Project (Project)
Ontario Energy Board File Number: EB-2015-0212 (the Order)

Dear Ms. Walli:

Please find enclosed with this letter the following three documents, which collectively comprise the post-construction report for the Project that is required to be filed pursuant to Condition of Approval 5(a) of the Order:

1. The certificate from a senior executive of the company pursuant to condition 5(a)(i) and 5(a)(v) of the Order;
2. The Kimball Pipeline Replacement Project – Post-Construction Environmental Monitoring Report prepared by Stantec Consulting Ltd., pursuant to condition 5(a)(ii) and 5(a)(iii) of the Order; and
3. The complaint log pursuant to condition 5(a)(iv) of the Order.

If you have any questions concerning this report, please contact us to discuss them.

Sincerely,

NOVA Chemicals (Canada) Ltd.

Per: Fred S. Maxim
Senior Corporate Counsel

Encl.
Copy: Ian Mondrow, Gowling WLG

NOVA Chemicals (Canada) Ltd. Senior Executive Certificate

Pursuant to Conditions of Approval 5(a)(i) and 5(a)(v) of Decision and Order EB-2015-0212 (the Order)

To: The Ontario Energy Board

I, Arnel Santos, of the City of Calgary, in the Province of Alberta, acting in my position as a senior executive of NOVA Chemicals (Canada) Ltd. (NCCL), to the best of my knowledge do hereby certify as follows:

1. My position with NCCL is Senior Vice President, Operations, and as such, I have personal knowledge of, or have conducted due inquiry of individuals who have personal knowledge of, the facts and matters herein stated.

2. NCCL has constructed the facilities and restored the land in accordance with the Order and the Conditions of Approval therein. Outstanding observances and re-assessments and any outstanding mitigation activities to address impacts noted within the attached report (Kimball Pipeline Replacement Project – Post-Construction Environmental Monitoring Report, April 16, 2018) will be completed within the 2018 growing season and reported in the final monitoring report.

3. NCCL has obtained all other approvals, permits, licences and certificates required to construct, operate and maintain the project that is the subject of the Order.

Name: 

Title: Senior Vice President, Operations

Date: April 24, 2018

Kimball Pipeline Replacement Project - Post Construction Environmental Monitoring Report

OEB Decision and Order EB-2015-0212

Prepared for:
NOVA Chemicals (Canada) Ltd.
PO Box 3060
Sarnia, ON N7T 8C7

Prepared by:
Stantec Consulting Ltd.
1-70 Southgate Drive
Guelph ON N1G 4P5

File No. 160960940
April 16, 2018

Sign-off Sheet

This document entitled Kimball Pipeline Replacement Project - Post Construction Environmental Monitoring Report was prepared by Stantec Consulting Ltd. for the account of NOVA Chemicals (Canada) Ltd. ("the Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 
(signature)

Michael Candido, Environmental Inspector

Reviewed by 
(signature)

Rob Rowland, Senior Project Manager

Table of Contents

LIST OF APPENDICES

LIST OF TABLES – APPENDIX A

Abbreviations

HDD	Horizontal Directional Drill
OEB	Ontario Energy Board
RoW	Right of Way
SCRCA	St. Clair Region Conservation Authority

OEB Filing Requirements

OEB Decision and Order: EB-2015-0212

Year of Reporting: Summer 2017

Pipeline Specifications:

- Diameter: NPS 12 (324 mm)
- Length: 4.0 km
- Product: Ethane

1.0 POST CONSTRUCTION ENVIRONMENTAL MONITORING REPORT

The purpose of this report is to highlight the key environmental monitoring components for the construction of the NOVA Chemicals (Canada) Ltd. Kimball Pipeline Replacement Project ("the Project") in accordance with the Ontario Energy Board's (OEB) Decision and Order EB-2015-0212.

The following biophysical elements were encountered during the construction phase:

- Physical environment
- Soil conservation and productivity
- Vegetation
- Water quality and quantity
- Fish and fish habitat
- Wildlife and wildlife habitat
- Species at Risk
- Wetlands

As outlined in Table 1.1, each biophysical element may have one or more specific elements (i.e.: soil conservation and productivity). The table provides information for each specific element as to how it was preserved, mitigated, reclaimed etc. Table 1.1 also outlines outstanding issues, potential adverse environmental effects and a proposed schedule to address potential effects.

1.1 DISCUSSION

Several mitigation and reclamation measures were employed throughout the Project as they related to the environmental commitments. Mitigation and reclamation measures were used for activities such as clearing and topsoil stripping, and for the protection of Species at Risk (SAR), wildlife, wet soils and wetlands.

Tree Cutting

Trees were cut only where necessary along the trench line and to allow for the safe passage of construction equipment along the easement. No expansion of the previously cleared easement was planned; however, several off-easement trees that were deemed hazardous (safety concern) were removed. Trees were replanted on a 2 for 1 basis in consultation with the St. Clair Region Conservation Authority (SCRCA). 148 trees were planted locally in the Fall of 2017. 24 trees were planted on the property of one of the easement owners. No other easement owner was interested in trees; therefore the remaining 124 trees were planted at NOVA Chemical's St Clair Site as part of the Site's landscaping program.

Soil and Soil Productivity

Topsoil was stripped over the trench line for the entire length of the pipeline and stripped across the entire workspace where the pipeline intersected an agricultural field. Topsoil was stored at the edge of the easement and separate from subsoil.

Through the forested area of the Right-of-Way (RoW), subsoil was replaced over the trench and levelled prior to topsoil replacement to prevent mixing of the soil horizons. Topsoil was then replaced and the entire RoW was disced.

Final clean up within the agricultural field consisted of decompaction with a soil ripper implement attached to a D6 dozer, discing and levelling of subsoil. Topsoil was then replaced, levelled and disced. All cleanup activities were completed to the farm operator's satisfaction. Natural contours were re-established to maintain natural surface drainage. No vehicle traffic was permitted over replaced topsoil. Topsoil stripping was successful in preventing topsoil/subsoil mixing and soil loss.

Vegetation Removal

Vegetation was removed where necessary along the RoW to return the RoW to its original cleared condition. No vegetation removal was undertaken beyond easement limits. Vegetation surveys conducted prior to construction concluded that pipeline workspace did not contain any rare or SAR plants.

Re-seeding

The entire length of the RoW was re-seeded during cleanup using a broadcast seeder attached to an all terrain vehicle (ATV). An annual rye grass was applied at a rate of 20 kg/ha. This type of grass establishes quickly, stabilizing the soil and allowing for the re-establishment of native species. Seed was applied the 3rd and 4th week of August 2017. Good growth was generally observed given the short period of time from application. Hydro seeding was completed where the RoW intersected road crossings. The success of native species growth will be assessed in late spring/early summer of 2018.

Species at Risk and Wildlife

Among the mitigation measures applied to prevent SAR, (Butler's Garter Snake), and other wildlife from entering the workspace or being harmed was the installation of exclusion fencing along the edge of both sides of the easement over its entire length. This measure was successful although there were snakes trapped within the workspace after installing the fence. Snakes observed within the workspace were relocated outside the exclusion fence. The exclusion fence was inspected and repaired daily as required.

During exclusion fence removal, the Environmental Inspector walked in front of and behind the crew removing the fence to ensure the safety of any wildlife. Overall, the exclusion fence was successful in preventing snakes from entering the workspace.

There were no confirmed observations of SAR. The exclusion fence was highly effective as no snakes or SAR were harmed at any point during the project.

Heavy equipment used for the construction of the pipeline was inspected daily prior starting the machine to search for wildlife that may be hidden in or under the equipment.

When a vehicle was travelling along a grassy portion of the RoW, the Environmental Inspector and/or labourers walked in front of the vehicle to ensure a safe and clear path free of wildlife.

Wet Weather and Wet Soils Shutdown

Wet weather and wet soils shutdown was applied at times to prevent the mixing, compaction and degradation of agricultural soils and for the safety of the crew.

Wetlands

The majority of the wooded area adjacent to the RoW is classified as unidentified treed wetlands. Snake exclusion fence that was installed along the entire length of the RoW prior to the start of construction activities also functioned as a barrier to prevent and control sedimentation and erosion beyond the construction work space. Fencing was inspected and repaired daily as required.

All organic matter/muck soils excavated were stored separately from subsoil and spread evenly over excavated areas during reclamation. Mud mats were installed in excessively wet areas to prevent mixing of soil layers. Surface drainage patterns were returned to pre-construction state to maintain existing wetland function and flow patterns, while also matching existing topography and contours.

Natural revegetation success will be assessed during the 2018 growing season.

Watercourses

Two SCRCA regulated drains were crossed by Horizontal Direction Drilling (HDD) – Allingham Drain and Jarvis Drain. All watercourses were lined with silt fencing during construction to prevent runoff from active construction entering watercourses. These mitigation strategies were successful.

2.0 COMPANY CONTACTS

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Appendix A:

Table 1.1

Table 1.1 Post-Construction Environmental Observations (Late Summer 2017)

Biophysical Element	Specific Element/ Location	Information / Comments	Outstanding Issue / Incident	Potential Adverse Environmental Effects	Proposed Action & Schedule
Physical Environment	Topography	Not an issue due to level topography; there was sloping topography at ditches and water courses; ditches and water courses will be discussed in "Water Quality" section.	No outstanding issues, however, the farm field should be monitored during the spring, after rain fall, to ensure effective surface runoff.	Improper surface grading.	Observed and re-assess in late spring/early summer 2018.
Soil Conservation and Productivity	Topsoil conservation	On the agricultural area, the topsoil was removed from the entire width of the easement and stockpiled at the edge of the easement as per the agreement reached with the farm operator. Topsoil and subsoil were piled separately. In non-farm fields topsoil was removed from the trench line area only and stockpiled at the edge of the easement, separate from the subsoil.	No outstanding issues.	Crop loss.	Reassess in late spring/early summer 2018.
	Soil de-compaction	De-compaction was relieved by using a soil ripper attached to a D6 dozer. Subsoil across the farm field was ripped to a depth of 40 centimeters and leveled prior to topsoil replacement to prevent mixing of soil horizons. Subsoil was disced and leveled over the trench across the remaining length of the RoW prior to topsoil replacement.	No outstanding issues.	Crop loss	Reassess in late spring/early summer 2018.

Table 1.1 Post-Construction Environmental Observations (Late Summer 2017)

Biophysical Element	Specific Element/ Location	Information / Comments	Outstanding Issue / Incident	Potential Adverse Environmental Effects	Proposed Action & Schedule
		Topsoil was disced across the entire RoW. No vehicle traffic was permitted on topsoil once replaced.			
	Erosion	N/A: due to the level topography and clayey texture of the soils in this area, wind and water erosion issues were not anticipated.	N/A	N/A	N/A
	Artificial Agricultural Drainage	No artificial tile drains were encountered during trenching for the pipeline.	N/A	N/A	N/A
Vegetation	Removal	Where necessary, vegetation was removed for trenching and to access the RoW. Felled trees were replaced on a 2 for 1 basis and planted in locations in St Clair Township.	No outstanding issues.	Reclaiming native vegetation, potential for invasive plant species and weeds.	Observed and reassess in late spring/early summer 2018.
	Re-seeding/Re-planting	The entire workspace was re-seeded using an annual rye grass applied at a rate of 20 kg/ha. Hydro seeding was completed where the RoW intersected road crossings (Tecumseh Road and Ladysmith Road). Felled trees were replaced on a 2 for 1 basis and planted within St. Clair Township. 24 trees were planted on property of one easement owner and 124 at NOVA Chemical's St Clair Site at locations approved by the SCRCA.	Seed was recently applied and some growth observed.	Temporary vegetation loss and exposed soil susceptible to invasive plant species and weeds.	Re-seeded areas to be observed following the spring freshet (late spring/early summer 2018). Seed will be reapplied (if required).

Table 1.1 Post-Construction Environmental Observations (Late Summer 2017)

Biophysical Element	Specific Element/ Location	Information / Comments	Outstanding Issue / Incident	Potential Adverse Environmental Effects	Proposed Action & Schedule
Water Quality and Quantity	Watercourses	Two watercourse crossings were completed by Horizontal Directional Drill (HDD) – Allingham Drain and Jarvis Drain that are regulated by the SCRCA. All crossings followed the Environmental Protection Plan and SCRCA permit conditions. A minor inadvertent return of drilling mud occurred during the HDD of Allingham and Jarvis Drains. Crew deployed drilling mud control procedures immediately. The drilling rig was shut down and remediation materials including straw bales, sand bags, stakes and filter cloth were employed. A vacuum truck was used to remove drilling fluid from the isolated area. Straw bales and silt fencing were placed into the creek to prevent siltation downstream. Bales and fencing were removed when the water quality (suspended solids) returned to background levels.	No outstanding issues.	Temporary and minor siltation of the watercourse and minor sedimentation downstream.	N/A
Fish and Fish Habitat	Watercourses	An inadvertent return of drilling mud occurred during the HDD of Allingham and Jarvis Drains (see Water Quality and Quantity).	No outstanding issues.	Temporary and minor siltation of the watercourse and minor sedimentation downstream. Temporary reduction of water quality.	N/A

Table 1.1 Post-Construction Environmental Observations (Late Summer 2017)

Biophysical Element	Specific Element/ Location	Information / Comments	Outstanding Issue / Incident	Potential Adverse Environmental Effects	Proposed Action & Schedule
Wetlands	Complexes	Unidentified treed wetlands adjacent to the RoW. Snake exclusion fence also functioned to prevent off easement siltation of wetlands. Organic soil layer was stripped and stored separately from subsoil. Mud mats installed in excessively wet areas. Pre-construction surface drainage patterns re-established during reclamation activities.	No outstanding issues	Harm and/or disturbance to wildlife. Alteration of drainage patterns.	Observed and reassess in late spring/early summer 2018.
Wildlife and wildlife habitat	Chickadee	One nest was found at the edge of the RoW. The location was communicated to crew members. Where possible, work was delayed until the nest became inactive. The Environmental Inspector was on site during work around the nest to assist crew with locating and avoiding the nest.	No outstanding issues.	Harm and/or disturbance to wildlife.	N/A
	American Robin	Nests were identified in trees at the edge of the RoW. Locations were communicated to the crew. General nest locations were flagged to provide a safe setback from ongoing work.	No outstanding issues.	Harm and/or disturbance to wildlife.	N/A
	Eastern Gartersnake	Several Eastern Gartersnakes were observed in the workspace. Snake exclusion fencing was installed prior to construction to prevent snakes from entering the workspace. All sightings were reported to the Environmental Inspector. Where necessary, work was delayed and	No outstanding issues	Harm and/or disturbance to wildlife.	N/A

Table 1.1 Post-Construction Environmental Observations (Late Summer 2017)

Biophysical Element	Specific Element/ Location	Information / Comments	Outstanding Issue / Incident	Potential Adverse Environmental Effects	Proposed Action & Schedule
		the snake was relocated outside of the exclusion fence.			
Species at Risk	Butler's Gartersnake	One suspected Butler's Gartersnake was observed in the workspace during the project. Snake exclusion fencing was installed prior to construction to prevent snakes from entering the workspace. No construction activities were occurring near the observation. The snake was allowed to travel out of the workspace.	No outstanding issues.	Harm and/or disturbance to wildlife.	N/A
Air Quality		Main impact to air quality was exhaust from construction equipment, machinery and pickup trucks. Impact was minimal.	N/A	Minimal contribution of greenhouse gases to the atmosphere.	N/A
Heritage Resources		N/A: a complete archeological assessment was performed prior to construction and no sites were identified.	N/A	N/A	N/A

Date	Time	Concerned Party	Description of Complaint	Action Taken	Rationale for Action Taken
2-May-17	4:30 PM	Third-party Pipeline Operator	Third-party Pipeline Operator raised concerns regarding NOVA Chemicals' proposed pipeline removal and installation plan due to the proximity to its existing pipeline and the potential impact on the integrity of that pipeline. Third party requested that its pipeline technician be present during all removal, construction and installation work to ensure the integrity of its pipeline.	NOVA Chemicals Project team met with the third party Pipeline Operator's Damage Prevention department and identified best practices to be followed related to the Project. Third party was satisfied with the proposed construction and installation methods and the methods were agreed to by both parties. Any issues identified during the construction period were discussed with pipeline technician and resolved.	Ensure there was no impact to the third party pipeline due to this Project and to work in conjunction with their pipeline technician. The proximity of the pipelines required both parties to have a good working relationship to ensure the integrity of both parties' assets. Utilizing best practices helped to ensure the safe removal of NOVA Chemicals' existing pipelines and the construction and installation of the new pipeline. Having third party pipeline technician on site throughout the construction period provided benefits to both parties.
6-Jul-17	11:49 AM	Neighbour	Neighbour indicated that trucks were speeding down an access road and causing dust. She indicated that she had also called the company which owns the access road and asked it to water the road to eliminate the dust issue.	NOVA Chemicals construction coordinator raised the concern with construction contractors about both the speeding and the dust. With permission from the owner of the access road, construction contractor watered the road and NOVA Chemicals/contractor agreed to monitor and address as required for the remainder of construction. NOVA Chemicals updated the neighbour that afternoon who stated that she noticed both that trucks were travelling slower and that she appreciated the road being watered.	Concerns from neighbours should be addressed as soon as possible and resolution explained to the neighbour. This issue was resolved by discussions with, and actions by, the contractor and the updates relayed to the neighbour that same afternoon.
21-Jul-17	5:15 PM	Unidentified neighbour	Unknown neighbour reported concern that trucks were driving too fast off Kimball to the compound.	NOVA Chemicals brought up the complaint and concern with contractors at the toolbox talk the next morning and highlighted the dangers of speeding and the importance of safe driving. Because it was unclear who was speeding, the complaint was also passed to the NOVA Chemicals Pipeline Coordinator, who contacted the other company who was working in the area at the time to raise its awareness.	Neighbour's concerns should be addressed regardless of who was speeding down the road. NOVA Chemicals was unable to determine who was speeding or whether it was our company/contractors or unrelated to the Project; however bringing it up in a toolbox talks raised awareness that speeding would not be tolerated, especially since this was the second complaint.
25-Jul-17	6:28 AM	Unidentified neighbour	The Ministry of Environment and Climate Change (MOECC) was contacted by an unknown party regarding concerns of noise and vibration around Kimball and Petrolia line areas. The MOECC contacted other company working in the area, which in turn relayed the message to NOVA Chemicals.	Our construction coordinator discussed the concern with our contractors, and determined that we were not working in the area at the time the noise and vibration were encountered.	In order to determine how to mitigate the noise and vibration issues, we needed to determine the cause. NOVA Chemicals determined that it was not caused by us; therefore our practices did not need to be altered. However, we appreciated being notified of the issue by the other company.