Enbridge Pipelines Inc. ("Enbridge")
Line 9B Reversal and Line 9 Capacity Expansion Project ("Project")

Application under section 58 and Part IV ("Application") of the *National Energy Board Act*
OH-002-2013
File OF-Fac-Oil-E101-2012-10 02

Enbridge Response to Les Citoyens au Courant Information Request No. 1

PROLOGUE:

The preambles to and/or premises of several of the information requests include assertions that may not be factually correct. Unless expressly stated otherwise, Enbridge does not concede the accuracy of any preamble or part thereof. Similarly, Enbridge does not concede the relevance of any request to which it has provided a response.

[Translation]

Le préambule ou les prémisses de plusieurs demandes de renseignements comportent des affirmations qui peuvent ne pas être conformes aux faits. Sauf mention expresse contraire, Enbridge ne reconnaît l'exactitude d'aucun des préambules ni d'aucune partie de ceux-ci. De même, Enbridge ne reconnaît la pertinence d'aucune demande à laquelle elle a fourni une réponse.

2. Les retombées commerciales possibles du projet proposé :

[Translation]

Possible Commercial Impacts of the Proposed Project:

Request: 2.1 Précisez les avantages économiques et commerciaux directs de ce projet (c'est-à-dire les retombées commerciales en dollars / année et le nombre d'emploi fixe à temps-plein) dans la région entre Ste-Justine de Newton et Pointe-Fortune (Vaudreuil-Soulanges area).

[Translation]

2.1 Specify the direct economic and commercial advantages from this project (in other words, the commercial spin-offs in dollars per year and the number of permanent full-time jobs) in the area between Sainte-Justine de Newton and Pointe-Fortune (Vaudreuil-Soulanges region).

Response: 2.1 Please see Attachment 1 to Stratégies Énergétiques IR 1.4a. The socio-economic impact analysis for the Project was not conducted at this level of granularity.

Request: 2.2 Les travaux d'entretien et de réparations (excavation) ainsi que les travaux de supervision sont-ils effectués par une entreprise locale pour notre région. Si oui, de quelle entreprise s'agit-il?

[Translation]

2.2 Are the maintenance and repair (excavation) work and the supervisory work conducted by a local company for our area? If so, which company is it?

Response: 2.2 The pipeline integrity dig work is being carried out by Robert B. Somerville Co. Limited and Construction SIMDEV.

3. Le caractère approprié du tarif des règles et règlements ainsi que de la méthode de tarification proposée :

[Translation]

The Appropriateness of the Tolls in the Rules and Regulations and of the Proposed Tolling Methodology:

Request: 3.1 If the pipeline carries a chemical cocktail to dilute the bitumen for transport, then why is the tolling methodology still defining the product as heavy crude petroleum?

Response: 3.1 All substances to be transported by the pipeline will be "oil" as that term is defined in the *National Energy Board Act.*

Request: 3.2 Does the change from crude petroleum to diluted bitumen affect the depreciation Enbridge claims on its physical assets (the Line 9b pipeline)?

Response: 3.2 No.

Preamble: 3.3 Section 16 of the draft Tolls and Regulations claims that Enbridge will not ship oil that is the subject of litigation.

Request: Does this include the constitutional (Treaty 6) challenge of the cumulative effects oil-sands development brought by the Beaver Lake Cree Nation against the Province of Alberta? (Lameman v Alberta, 2013 ABCA 148).

4. Les effets environnementaux et socioéconomiques potentiels du projet proposé, y compris ceux causés par les accidents ou défaillances pouvant survenir, et les effets

environnementaux cumulatifs éventuels que sa (9b) réalisation est susceptible de causer :

[Translation]

The Potential Environmental and Socio-Economic Effects of the Proposed Project, Including the Potential Effects of Malfunctions or Accidents that may Occur, and any Cumulative Environmental Effects that are Likely to Result from the 9B Proposed Project:

Request: 4.1 Are there written agreements concerning cost and payment of clean-up in case of a spill anywhere between Ste-Justine-de-Newton and Pointe Fortune as well as under the Ottawa River?

Response: 4.1 No. Please refer to response to TRCA IR 1.j.1.l.

Request: 4.2 Are they sufficient and guaranteed?

Response: 4.2 Not applicable.

Request: 4.3 Do they make provisions for wildlife rehabilitation and clean-up?

Response: 4.3 Not applicable.

Request: 4.4 Provide copies of all agreements, please.

Response: 4.4 Not applicable.

Request: 4.5 Est-ce que vous partagez les résultats de vos études de l'état de la canalisation 9b de 2012-2013 avec nos municipalités ?

[Translation]

4.5 Are you sharing the results of your 2012-2013 studies of the state of Line 9B with our municipalities?

Response: 4.5 Enbridge will communicate the results of the in-line inspection tool runs to affected landowners and municipalities.

Preamble: Sur le site du gouvernement du Québec: « Peu importe la quantité, les hydrocarbures perturbent l'équilibre écologique et sont très nocifs pour nos écosystèmes (faune et flore).

Référence:
http://www.mddep.gouv.qc.ca/jeunesse/sais_tu_que/2012/0312-petrole.htm

[Translation]

On the Quebec government website: "Regardless of quantity, hydrocarbons disturb the ecological balance and are very harmful for our ecosystems (fauna and flora)"

Reference:
http://www.mddep.gouv.qc.ca/jeunesse/sais_tu_que/2012/0312-petrole.htm

Request: 4.6 Quelle quantité de pétrole votre oléoduc peut-il perdre sans que vous le sachiez (fuite lente)?

[Translation]

4.6 What quantity of oil can your pipeline lose without you knowing (slow leak)?

Response: 4.6 The quantity of oil released before detection is dependent on the conditions of the release, such as release rate, detection method and location of the release. Please refer to response to NEB IR 3.10.c for a description of the sensitivity of the Computational Pipeline Monitoring system.

Request: 4.7 Combien de temps peuvent durer ces fuites sans que vous vous en rendez compte (exemple dans votre historique)?

[Translation]

4.7 For how long can these leaks continue without you being aware of them (examples from your history)?

Response: 4.7 While it is not always possible to instantaneously detect very small leaks due to factors like instrumentation accuracy and repeatability, larger volume releases are detected by the real time leak detection systems that continuously monitor the pipeline. Very small leaks would normally be detected by high resolution ultrasonic in-line inspection ("ILI") in advance of a failure or an acoustic internal line inspection tool.

The Enbridge pipeline system, including Line 9, is monitored 24 hours a day/7 days a week by operators in our Control Centre, located in Edmonton. In the event of any indication of a pipeline release, including a hydrocarbon odour call from the public, the operator would shut the line down and isolate it with remote

controlled valves in the vicinity of the potential leak.

Request: 4.8 Ces fuites peuvent-elles contaminer des puits, des nappes phréatiques et des aquifères sur une longue période?

[Translation]

4.8 Can these leaks contaminate wells, water tables and aquifers over a long period?

Response: 4.8 Potential groundwater contamination would depend on many incident and site-specific variables, which would include, among other things, the volume and type of product released, the location of the incident, the time of year, climatic conditions at the time of the incident**,** and site-specific hydrogeologic conditions (e.g., depth to groundwater, groundwater flow rate). Under some circumstances a crude oil release could contaminate upper groundwater bearing zones.

If groundwater contamination were to be encountered, Enbridge would follow the NEB Remediation Process Guide and work in consultation with the NEB, the landowner, and applicable stakeholders to develop a remedial action plan.

Request: 4.9 Même dans le cas d'un incident mineur, prenez-vous action pour remettre les lieux à l'état dans lequel ils étaient avant l'incident?

[Translation]

4.9 Even in the case of a minor incident, do you act to restore sites to the state they were in prior to the incident?

Response: 4.9 Yes, all releases are cleaned up to meet or exceed regulatory requirements and the land is restored to the same condition as it was prior to the incident.

Preamble: Sur le site de Santé Canada on peut apprendre davantage sur la toxicité du benzène et sur ses effets sur l'environnement. L'exposition à long terme, chez les espèces les plus sensibles (grenouilles, poissons) aura des effets de toxicité aiguë. On ne dispose pas de données sur les effets dus à l'exposition chronique. Le seuil sécuritaire est assez bas, on parle d'un seuil d'effet estimé de 185 µg/L pour les espèces les plus sensibles.

Référence :
http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl1-lsp1/benzene/benzene_3-fra.php

[Translation]

On the Health Canada site, more can be learned about the toxicity of benzene and about its effects on the environment. Long-term exposure among the most sensitive species (frogs and fish) will have acutely toxic effects. No data are available on the effects caused by chronic exposure. The safe threshold is quite low; the effect threshold has been estimated at 185 µg/L for the most sensitive species.

Reference:
http://www.hc-sc.gc.ca/ewh-semt/pubs/contaminants/psl1-lsp1/benzene/benzene_3-eng.php

Request: 4.10 Est-ce que le benzène, s'il y a fuite, voyage sur une longue distance dans le sol s'il se mélange avec les eaux souterraines ? Est-ce que le benzène peut se retrouver dans une nappe phréatique suite à une fuite?

[Translation]

4.10 If there is a leak, does benzene travel over a long distance in the ground if it mixes with groundwater? Can benzene be found in a water table following a leak?

Response: 4.10 Benzene is a minor component of crude oil and refined products (including gasoline and diesel) and can be detected in groundwater, if groundwater is impacted by a release. Benzene does not typically travel long distances in the sub-surface, as it is susceptible to volatilization and biodegradation, which limits potential travel distances in groundwater.

In the unlikely event of a release, Enbridge's emergency response and site remediation priorities would be to quickly contain and recover any released product, and to mitigate all impacts to human health and the environment.

Preamble: Plus de 60% des ménages de la zone du Bassin Versant de Vaudreuil-Soulanges sont approvisionnés en eau souterraine et peu de données sont actuellement disponibles sur cette ressource.
Référence :http://www.cobaver-vs.org/dossiers-et-projets https://docs.google.com/file/d/0B40Exncdu-

iWUGN0ZGFJSk1NdzQ/edit

Un déversement ou une fuite lente du pipeline 9b aura un impact majeur sur l'approvisionnement en eau de la population et de nos industries & commerces.

[Translation]

More than 60% of households in the Vaudreuil-Soulanges watershed are supplied by groundwater, and limited data are currently available on this water table resource.

Reference: http://www.cobaver-vs.org/dossiers-et-projets https://docs.google.com/file/d/0B40Exncdu-iWUGN0ZGFJSk1NdzQ/edit

A spill or slow leak from Line 9B will have a major impact on the water supply for the local population and for our industries and businesses.

Request: 4.11 Avez-vous des données sur les eaux souterraines des bassins versants de la région de Vaudreuil-Soulanges (composition de l'eau, cheminements des eaux souterraines, zones de recharges de l'aquifère à nappe captive,etc.)?

[Translation]

4.11 Do you have data on groundwater in the Vaudreuil-Soulanges regional watershed (water composition, groundwater movements, recharge areas of the confined aquifer, etc.)?

Response: 4.11 In the unlikely event of a release, Enbridge would have specialized resources ready for rapid deployment with processes at their disposal to quickly gather groundwater information specific to the area of the release.

Please refer to response to TRCA IR 1.f.iii.

Request: 4.12 Avez-vous des moyens de tester les eaux souterraines pour éventuellement détecter la présence d'hydrocarbures et autres produits pouvant émerger du pipeline?

[Translation]

4.12 Do you have ways of testing groundwater to detect eventually the presence of hydrocarbons or other products that may emerge from

the pipeline?

Response: 4.12 Groundwater monitoring wells are used to monitor groundwater levels and groundwater quality.

Request: 4.13 Avez-vous envisagé ce type d'échantillonnage dans vos mesures « préventives »?

[Translation]

4.13 Did you consider this type of sampling in your "preventive" measures?

Response: 4.13 Enbridge conducts routine, preventative groundwater monitoring at stations and terminals. Groundwater monitoring programs are a standard industry practice at facility locations with a concentration of equipment and activity.

Request: 4.14 Seriez-vous intéressés à intégrer la méthode d'un échantillonnage à fréquence régulière des eaux souterrains des régions « critiques » (où le pipeline traverse des zones de recharge et/ou les puits et/ou les rivières)?

[Translation]

4.14 Would you be interested in using the groundwater sampling method at regular intervals in "critical" areas (where the pipeline crosses recharge areas and/or wells and/or rivers)?

Response: 4.14 Proactive groundwater monitoring along the Enbridge right of way is not an effective method for detecting potential groundwater issues resulting from pipeline operations. Groundwater monitoring would not be able to detect potential issues within a reasonable timeframe to be of practical use. The length of time between monitoring events (commonly months) and slow groundwater velocity (typically less than 1 metre/year) would result in a large lag time between the onset of an incident or release and potential detection via a preventative groundwater monitoring program.

Enbridge utilizes state of the art leak detection technology to monitor the pipeline, which is better-suited for monitoring "critical" areas. Please refer to response to NEB IR 3.10.c for a description of the Enbridge leak detection system.

5. La conception technique du projet proposé :

[Translation]

The Engineering Design of the Proposed Project:

Request: 5.1 Selon des rapports de citoyens dans la région, il y a déjà eu des fuites entre Ste-Justine-de-Newton et Pointe- Fortune. Est-ce que Enbridge peut nous en dire plus?

[Translation]

5.1 According to reports from citizens in the area, there have already been leaks between Sainte-Justine-de-Newton and Pointe-Fortune. Can Enbridge tell us more about this?

Response: 5.1 Enbridge has had no leaks in the area mentioned. Please refer to response to Ontario IR 1.8.a for a list of pipeline releases on Line 9. Organic sheen is sometimes found in farm fields and can be easily mistaken as a hydrocarbon.

Request: 5.2 Est-ce que la section de l'oléoduc qui passe en dessous de la rivière des Outaouais à Pointe-Fortune a été examinée par des plongeurs sous-marin? Si oui, quelles étaient les raisons et les résultats de cet examen?

[Translation]

5.2 Has the section of the pipeline under the Ottawa River at Pointe-Fortune been examined by divers? If so, what were the reasons for this examination and the results?

Response: 5.2 The entirety of Line 9 is inspected through in-line inspection. Please refer to Section 4 of the Pipeline Engineering Assessment (Pipeline "EA") for details on the integrity management of line 9B. Please also refer to response to NEB IR 3.12.

Enbridge inspects the crossing of navigable rivers every five years. Ottawa River was last inspected in August 2012.Enbridge inspects for exposed pipe, depth of cover, any obstructions (debris, rocks, ship anchors, etc.) and general condition of the river bed and shores. No issues were noted in the last inspection.

Request: 5.3 Quelles sont les données utilisées (prises de l'examen avec le cochon) pour déterminer où se passeraient les 166 excavations

prévues sur la ligne 9B au Québec? Pourquoi ces endroits précisément?

[Translation]

5.3 What data are used (data from the examination with a pig) to determine where the 166 planned digs for Line 9B in Quebec would occur? Why specifically in these locations?

Response: 5.3 Excavations for Line 9B are the result of the analysis of the in-line inspections conducted in 2012-2013 based on the criteria detailed in Section 4 of the Pipeline EA.

Please refer to response to NEB IR 3.12.

Preamble: Vous affirmez que la durée de vie d'un oléoduc est éternelle.

Référence :
http://argent.canoe.ca/nouvelles/enbridge-veut-rassurer-la-population-25042013

[Translation]

You have stated that the lifespan of an oil pipeline is eternal.

Reference:
http://argent.canoe.ca/nouvelles/enbridge-veut-rassurer-la-population-25042013

Request: 5.4 Soutenez-vous officiellement qu'un oléoduc ait une durée de vie éternelle?

[Translation]

5.4 Do you maintain officially that an oil pipeline has an eternal lifespan?

Response: 5.4 Pipelines are designed as long life assets. With regular maintenance, pipelines have an indefinite life.

Request: 5.5 Si non, quelle est la durée de vie de l'oléoduc 9b?

[Translation]

5.5 If not, what is the lifespan of Line 9B?

Response: 5.5 Please refer to response to Les Citoyens au Courant IR 5.4.

Preamble: Le 6 juin 2013, suite à la découverte d'hydrocarbure sur un terrain de St-André d'Argenteuil, on a découvert 6 faiblesses dans le pipeline 9b sur 200m.

Référence : http://www.radiocanada.ca/nouvelles/environnement/2013/06/06/001-enbridge-argenteuil-faiblesse.shtml?isAutoPlay=1

[Translation]

On June 6, 2013, following a hydrocarbon discovery on a piece of land in Saint-André d'Argenteuil, six weak spots were discovered in Line 9B over 200 metres.

Reference: http://www.radio-canada.ca/nouvelles/environnement/2013/06/06/001-enbridge-argenteuilfaiblesse.shtml?isAutoPlay=1

Request: 5.6 Comment expliquez-vous toutes les faiblesses découvertes lors de vos analyses?

[Translation]

5.6 How do you explain all these weaknesses discovered during your analyses?

Response: 5.6 Enbridge is unaware of which specific features are referenced in the IR.

Please refer to response to NEB IR 3.12.

Preamble: Selon un "corrective order" du "Pipeline & Hazardous Materials Safety Administration" :"A change in the direction of flow can affect the hydraulic and stress demands on the pipeline"

http://articles.chicagotribune.com/2013-04-02/marketplace/sns-rt-us-exxon-pipeline-spillbre92u002- 20130330_1_pipeline-spill-u-s-pipeline-regulators-ruptured-pipeline

[Translation]

A corrective order from the U.S. Pipeline & Hazardous Materials Safety Administration states: "A change in the direction of flow can affect the

hydraulic and stress demands on the pipeline."

http://articles.chicagotribune.com/2013-04-02/marketplace/sns-rt-us-exxon-pipeline-spillbre92u002-20130330_1_pipeline-spill-u-s-pipeline-regulators-ruptured-pipeline

Request: 5.7 Est-ce que Enbridge peut prouver le contraire?

[Translation]

5.7 Can Enbridge prove otherwise?

Response: 5.7 Enbridge's Integrity Management Program is designed to account for the operating conditions of Line 9B. While a change in flow can affect the hydraulic and stress demands on a pipeline, these factors are addressed in the Section 4 of the Pipeline EA.

Preamble: À Mayflower, les valves ont été fermées en 16 minutes et l'Agence de transport américain a été capable d'estimer la quantité de pétrole déversé selon le débit (3500 à 5000 barils) entre le moment que la fuite a été détectée et l'arrêt du débit par la fermeture des valves.)

[Translation]

In Mayflower, the valves were closed in 16 minutes, and the U.S. Department of Transportation was able to estimate the quantity of oil spilled based on the flow (3,500 to 5,000 barrels) between the time the leak was detected and the time the flow was stopped by closing the valves).

Request: 5.8 Entre les valves à Soulanges, combien de liquide peut être contenue à tout moment (minimum and maximum) basé sur un débit de 300,000 b.p.j.?

[Translation]

5.8 Between valves in Soulanges, how much liquid may be contained at any moment (minimum and maximum) based on a flow of 300,000 b.p.d.?

Response: 5.8 The volume that is contained within the pipeline is not dependent on the flow rate and as such there is no minimum and maximum value.

Within Soulanges, the amount of product that may be contained within the pipeline is 77,945 bbls. Between the nearest remote-

controlled sectionalizing valves that contain Soulanges, the amount of product contained within the pipeline is 113,270 bbls.

Note that in the event of a pipeline incident that the amount of oil draining from this pipeline section at the incident location would be substantially less than 113,270 bbls due to the effect of topography; natural high points in the pipeline elevation profile hinder the release of oil, resulting in an estimated worst case release of 9,055 bbls within this section.

Request: 5.9 Given the distance between shutoff valves and the maximum carrying capacity of 9B, what will be the expected spill volume in barrels if the valves are shut off with a possible delay of 10 minutes and 60 minutes? As was done in Mayflower by the US authorities, the approximate volume of a spill can be estimated based on the pressure and volume.

Response: 5.9 Based on the design capacity of 333,333 bbls per day the calculated potential volume out based solely on the time to close valves and shut down the pipeline is 2,315 bbls (for a 10 minute delay) and 13,890 bbls (for a 60 minute delay). It is assumed that during the 60 minutes pumping continues. The total volume out would be the sum of this initial volume out plus the volume of oil that would be released that is not isolated by elevation nor remote controlled valves which is independent of flowrate.

Request: 5.10 Given the current location of shut-off valves, what is the expected spill volume in barrels into the Ottawa River, given 9B's maximum capacity and possible delays (for a shut-off delay of 10 minutes and 60 minutes?

Response: 5.10 Based on the design capacity of 333,333 bbls per day, the calculated potential volume out at the Ottawa River is 4,950 bbls (10 minute delay to closing valves and shutting down the pipeline) and 16,515 bbls (60 minute delay in closing valves and shutting down the pipeline). It is assumed that during the 60 minutes pumping continues. The total volume out would be the sum of this initial volume out plus the volume of oil that would be released that is not isolated by elevation nor remote controlled valves, which is independent of flowrate.

Preamble: Le rapport « B-15, Attachment 7, Pipeline Engineering Assessment, A3D7J4 » (page-40 de 96) fait mention d'un taux de corrosion « interne » annuel du pipeline entre la station de pompage Cardinal et Montréal de (0.082 mm/an), d'un taux de corrosion « externe » annuel de (0.044

mm/an) et d'une épaisseur du pipeline de (6.35 mm à 12.7mm). [Translation]

Report B-15, Attachment 7, Pipeline Engineering Assessment, A3D7J4 (page 40 of 96) mentions an annual "internal" corrosion rate of the pipeline between the Cardinal pumping station and Montreal of 0.082 mm/year, an annual "external" corrosion rate of 0.044 mm/year and a pipeline thickness of 6.35 mm to 12.7mm.

Request: 5.11 Est-ce un taux de corrosion interne annuel « moyen » depuis 1975 (mesuré sur la période de 38 ans)?

[Translation]

5.11 Is this an "average" annual internal corrosion rate since 1975 (measured over a 38-year period)?

Response: 5.11 The corrosion growth rate metric is calculated in order to provide insight into the integrity condition of the pipeline and to support monitoring and mitigation planning activities; it is not intended to represent an actual deterministic rate of material degradation of the pipe wall. This metric is created by considering the deepest metal loss indications on each pipeline joint provided by metal loss in-line inspections, and averaged over the total number of pipe joints where metal loss was detected. The calculation considers the date of construction, the date of the metal loss inspection, and employs a safety factor.

Although this metric is presented as an "average corrosion rate," it is really an average of the worst case pitting observed by the ILI multiplied by a safety factor.

Request: 5.12 Si oui, on obtient par calcul une épaisseur moyenne de pipeline corrodée à l'intérieur de (3.1 mm), sur une épaisseur totale de (6.35 mm), soit (49%) de l'épaisseur totale. Est-ce exact?

[Translation]

5.12 If so, calculations indicate an average 3.1 mm thickness of corroded pipeline on the inside, out of a total thickness of 6.35 mm, amounting to 49% of the total thickness. Is this correct?

Response: 5.12 Please refer to response to Les Citoyens au Courant IR 5.11. Enbridge Historical Corrosion Growth Rate ("CGR") metrics represent an average of the very deepest corrosion pits observed on

the pipeline multiplied by a safety factor, and not overall rates of wall loss.

Request: 5.13 Selon la même hypothèse, sur 38 ans, on obtient par calcul une épaisseur moyenne de pipeline corrodée à l'extérieur de (1.7 mm), sur une épaisseur totale de (6.35 mm), soit (27%) de l'épaisseur totale. Est-ce exact? Svp fournir les données détaillées ayant permis de déterminer ces résultats (temps de croissance de la corrosion, facteur de sécurité, etc.)

[Translation]

5.13 According to the same hypothesis, over 38 years, calculations indicate an average 1.7 mm thickness of corroded pipeline on the outside, out of a total thickness of 6.35 mm, amounting to 27% of the total thickness. Is this correct? Please provide detailed data for determining these results (time of growth in corrosion, safety factor, etc.).

Response: 5.13 Please refer to response to Les Citoyens au Courant IR 5.11 and response to Les Citoyens au Courant IR 5.12 for background on interpreting average CGR metrics. This data does not indicate overall pipe wall degradation.

Request: 5.14 Quel est le taux annuel de progression de la corrosion interne et externe actuel (en 2012-2013)?

[Translation]

5.14 What is the current annual rate of growth in internal and external corrosion (in 2012-2013)?

Response: 5.14 Corrosion growth rates are developed and applied based on discrete areas of corrosion and are not measures of broad pipe wastage or general wall thinning of the pipeline. There is no broad pipe wastage or general wall thinning of the pipeline.

For discrete areas of corrosion, initial analyses of the 2012 UltraSonic Wall Measurement (USWM) data indicate that average external CGR is 0.07 mm/yr and average internal CGR is 0.05 mm/yr.

Request: 5.15 Indicate the position of all valves, DRA (Drag Reducing Agent) injection pumps, temperature monitoring systems and densitometers, if any in the section of pipeline between Ste-Justine-de-Newton and

the north side of the Ottawa River.

Response: 5.15 There are valves located where the pipeline crosses Chemin de Petit Brule, Chemin des Outaouais and on Highway 344. There are no injection pumps, temperature monitoring systems or densitometers in this section.

Request: 5.16

a) What types of valves are used in this section of pipeline (Ste-Justine-de-Newton to Pointe-Fortune and under the Ottawa River), what are their specifications with respect to applications?

b) Who manufactures them?

c) Which types of valves are where on this section of the pipeline?

Response: 5.16

a) The pipeline valves are slab gate valves and were designed for use as mainline valves.

b) The valves were manufactured by Grove Valve and Regulator Company or Daniel Valve Company.

c) Line 9 uses slab gate valves. Please refer to Attachment 1 to response to NEB IR 2.7 (revised) for valve locations.

Request: 5.17

a) What diluent(s) will be used in the transported products?

b) Provide the Material Safety Data Sheets (MSDS) for each substance used.

Response: 5.17

a) The typical diluents used by our producers are condensate (CRW) and light synthetic crude oils.

b) Any crude that meets the specifications in the tariff may be shipped on Line 9B. A representative sample of Material Safety Data Sheets ("MSDS") is attached as Attachment 1 to Les Citoyens au Courant IR 5.17b for each of the products anticipated to be transported should the project be approved. Please note that one MSDS may cover more than one type of crude and that more than one shipper may transport the various products for which a representative MSDS has been provided. A list of the MSDS is also attached along with a cross reference to the product type(s) the MSDS are being provided for.

Request: 5.18 What ratio of diluent to bitumen will be used?

Response: 5.18 The ratios depend on the diluent used. Condensate blended with Bitumen is typically 20 to 30% by volume (20:80 to 30:70 diluent:bitumen). Light synthetic crude oils blended with bitumen are roughly double what is used when compared to condensate (40:60 to 50:50).

Request: 5.19

a) How much DRA (Drag Reducing Agent) preparation will be used per year?

b) What is the cumulative effect of these amounts in the pipeline?

c) Is there any accumulation of the break-down products in the pipeline?

d) How is this monitored?

e) How frequently?

f) How is this incorporated into the overall pipeline management program?

Response: 5.19

a) DRA use on Line 9 is dependent on the required throughput on the line. The expected maximum amount of DRA used is 265,000 gal/year.

b) There are no cumulative effects anticipated due to the addition of DRA.

c) The planned cleaning pig runs on Line 9B will provide an opportunity to observe, analyze and assess any unexpected buildup of material in the pipeline.

d) Please refer to response to Les Citoyens au Courant IR 5.19.c.

e) All segments would initially be pigged (cleaned) twice per year.

f) DRA has been used for more than two decades on transmission pipelines and is now a commonly available commodity item. There are no indications (published experiences) to suggest that DRA has any effect on internal corrosion, and therefore Enbridge does not consider DRA in its internal corrosion susceptibility analysis.

Preamble: DRA preparations are "difficult to handle because they have a severe tendency to cold flow and reagglomerate even at subambient temperatures.

Under conditions of pressure... cold flow is even more intense and reagglomeration occurs very quickly." (Brevet US 6576732)

Request: 5.20 What monitoring is in place for the proper functioning of the DRA injection pumps?

Response: 5.20 The DRA injection pumps are monitored by an industrial Program Logic Controller ("PLC") computer that ensures that the pump operates as designed.

Preamble: "(non-crosslinked elastomeric) polymers ... cannot be pelletized or put into discrete form and then stored for any reasonable period of time without the materials flowing together to form large agglomerates." (Brevet US 6576732)

Request: 5.21 What systems are in place to ensure an adequate and fresh supply of the DRA preparation?

Response: 5.21 Proprietary components included during manufacture, along with intermittent, automatic agitation of the light DRA (LP™ 100 Flow Improver) while inside the skid storage tank, eliminate agglomeration during storage and injection. Heavy DRA (EP™ 1000 Flow Improver) does not require intermittent agitation to eliminate agglomeration during storage and injection. After injection, DRA remains fully dissolved at all times, in all sections of the pipeline. In addition, DRA inventory is monitored by both Enbridge and the DRA provider to ensure the DRA supply is adequate.

Request: 5.22 How fast could a technician be on site to rectify a malfunctioning DRA injection pump or a clogged line along the pipeline section between Ste-Justine-de-Newton and the north side of the Ottawa River?

Response: 5.22 There is no DRA injection facility in Quebec. Please refer to response to Les Citoyens au Courant IR 5.19.c.

Preamble: "In general, drag reduction depends in part upon the molecular weight of the polymer additive and its ability to dissolve in the hydrocarbon under turbulent flow." (Brevet US 6576732, 2003)

Request: 5.23 How long does the DRA preparation take to dissolve in the hydrocarbon product transported in ambient temperatures?

Response: 5.23 DRA dissolution occurs within a few minutes after injection at all

temperatures and in all turbulent conditions.

Request: 5.24 Warm temperatures?

Response: 5.24 Please refer to the response to Les Citoyens au Courant IR 5.23.

Request: 5.25 Cold temperatures?

Response: 5.25 Please refer to the response to Les Citoyens au Courant IR 5.23.

Request: 5.26 In areas of turbulence?

Response: 5.26 Please refer to the response to Les Citoyens au Courant IR 5.23.

Request: 5.27 How is reagglomeration of the very large DRA copolymers (greater than 5 million C) reduced/prevented during storage?

a) During injection?

b) After injection into the hydrocarbon stream?

c) At areas of known turbulence?

d) Downstream from areas of know turbulence?

Response: 5.27 a - d) Please refer to response to Les Citoyens au Courant IR 5.21.

Request: 5.28 What monitoring systems are in place to ensure proper and timely dissolution of DRA from the point of entry in Ste-Justine-de-Newton to the north side of the Ottawa River?

Response: 5.28 DRA dissolution occurs within a few minutes after injection and remains fully dissolved in the crude oil at all times.

Request: 5.29 Is dosage of DRA adjusted according to seasonal temperatures?

Response: 5.29 DRA injection rates are specified based on flow rates and are adjusted as needed based on operational reviews and feedback from the pipeline operators.

Request: 5.30 What preparation(s) of DRA will be used?

Response: 5.30 Enbridge is proposing to use both light DRA (LP™ 100 Flow Improver) and heavy DRA (EP™ 1000 Flow Improver) which are

manufactured using patented technology developed by Philips Specialty Products.

Request: 5.31 Will it be coated with partitioning agent? If so, which one(s)?

Response: 5.31 EP™ 1000 Flow Improver does not require a partitioning agent. LP™ 100 Flow Improver contains proprietary components which function as partitioning agents. All are classified non-hazardous.

Request: 5.32 Will it be coated/mixed with antioxidants, lubricants, plasticizes, wetting agents? If so, which one(s)?

Response: 5.32 Various components of LP™ 100 Flow Improver and EP™ 1000 Flow Improver serve these functions. Ethylene glycol is included in EP™ 1000 Flow Improver as a freeze-protecting agent. Please see Attachment 1 to Les Citoyens au Courant IR 5.32 for Safety Data Sheets.

Request: 5.33 Will particulate agents such as talc, graphite, tricalcium phosphate, calcined clays, magnesium stearate, silica, polyanhydride polymers, or others be used? If so, which one(s)?

Response: 5.33 Please see Attachment 1 to Les Citoyens au Courant IR 5.32.

Request: 5.34 Will surface-active or suspension agents be used? If so, which one(s)?

Response: 5.34 Both light DRA (LP™ 100 Flow Improver) and heavy DRA (EP™ 1000 Flow Improver) contain small amounts of surfactants. These surfactants do not impact any downstream processes (including desalting, demulsification, and all other refining processes). The chemical details of the non-hazardous, inactive components are proprietary. Please see Attachment 1 to Les Citoyens au Courant IR 5.32.

Request: 5.35 Provide MSDS for each substance used.

Response: 5.35 Please see Attachment 1 to Les Citoyens au Courant IR 5.32.

Request: 5.36

a) Will these products result in higher particulate matter inside the pipeline?

b) Could they precipitate out? Could they increase internal damage from sludge, thereby increasing microbeinduced corrosion (MIC), pitting, internal corrosion?

Response: 5.36 a - b) No. All components of both light DRA and heavy DRA remain fully dissolved in the crude oil at all times.

Request: 5.37 Will any of the products transported, including but not restricted to: diluents; adjuvants; partitioning agents such as talc, graphite, tricalcium phosphate, calcined clays, magnesium stearate, silica, polyanhydride polymers; DRA and their preparations; suspension or surface-active agents; result in higher agglomeration of weathered bitumen products in water thereby increasing the sinking potential of the higher-weight hydrocarbons in water?

Response: 5.37 None of the products that would be shipped on Line 9B, including dilbit, are considered to be a "true sinking oil" (i.e., oil that when un-weathered has a specific gravity in excess of 1.0). Only hydrocarbons with a specific gravity less than 0.94 (density of 940 kg/m^3) will be shipped on Line 9B. Nevertheless, Enbridge acknowledges that, in the unlikely event that oil (including dilbit) were to be spilled into a freshwater watercourse, a fraction of it could under certain conditions become entrained in the water column, and subsequently submerge or sink through sediment interactions.

The relevant fate and behavior mechanisms that affect this process are:

- The freshly spilled oil is a "floater" – that is, under still-water conditions 100% of the oil will be on the surface of the water, because it is less dense than the water. This is a two dimensional condition.
- As water moves in a stream or river, the natural turbulence associated with the flow may entrain a small portion of the oil (i.e., force surface oil into the water column) within the water column, below the surface. The oil is still less dense than water and is buoyant, but is being forcibly maintained within the water column by turbulence. This is a three-dimensional condition.
- Faster currents, steeper terrain, ice, surface disturbances, and higher bottom roughness along the bottom of the river will add more turbulence and entrain more oil.
- As the cross-sectional area of a river or stream channel increases (due to an increase in width or depth or both), the current slows, potentially allowing some portion of the

entrained oil to return to the surface. If the water stops flowing altogether, for example in a side bay or slough, some of the entrained oil could return to the surface.

- In addition, some of the small portion of oil that is entrained in the water column may mix with suspended sediments, particularly on/near the river bed or river banks. These sediments are denser than water and are suspended by turbulence, or physical mixing. This entrained oil/sediment mixture may form aggregates with a higher density than the water, which could sink in low-flow or still-water areas. The fraction of the total oil volume that will not float depends on the amount of suspended sediments and flow conditions. In higher flow and more turbulent conditions, oil with a density less than water may be forcibly entrained and adhere to the bottom.

As described above, oil does not simply submerge or sink when spilled into a watercourse and if some portion of it does, it is frequently a temporary condition arising by way of entrainment with the result that the oil resurfaces. The factors that contribute to whether or not oil submerges or sinks are complex, can change rapidly, and apply to all crude oils, including dilbit.

Request: 5.38 What methods are proposed to monitor the amount of particulate matter within the hydrocarbon stream on the section from Ste-Justine-de-Newton and the north side of the Ottawa River?

Response: 5.38 All products are tested when initially received into the system to meet pipeline sediment and water content tariff limit (0.5 vol% combined sediment and water).

Request: 5.39 Is densitometry sufficient to measure the effect of particulate matter greater than 200 nm?

Response: 5.39 Densitometers are used to measure the density of the hydrocarbons transported to correct volumes during custody transfer measurement, or for hydrocarbon batch detection during transport in the pipeline.

Particulates (sediments) are measured as part of the sediment and water test during custody transfer receipt/delivery for crude oils. Sediment, which includes any solid inorganic particular matter, is found in any crude oil that has not been refined or upgraded (heavy or light) and is not restricted to diluted bitumen. Sediment in crude oil is measured as a percentage of the total volume of crude oil

received from a shipper (vol%). The tariff limit for Sediment and Water ("S&W") combined is 0.5 vol%, but that limit is not always reached.

Request: 5.40 Can it accurately assess the level of reagglomeration of DRA copolymers?

Response: 5.40 Please refer to response to Les Citoyens au Courant IR 5.21.

Request: 5.41 Where along this section of the pipeline is particulate matter measured?

Response: 5.41 Measurements are made upon receipt into the system (upstream of Sarnia) and upon delivery (Montreal).

Request: 5.42 Is there any monitoring of particulate matter within the main pipeline, or only before products enter the mainline?

Response: 5.42 Monitoring is done upon entry into the system. Regularly scheduled cleaning tool runs are used to prevent particulate build-up.

Request: 5.43 Are management/maintenance/prevention programs based solely on data coming from before the main pipeline? If so, how can they be sufficient for management of a product that is more particulate due to the very products required to modify its physical behavior and allow transport via pipeline?

Response: 5.43 Please refer to response to Les Citoyens au Courant IRs 5.41 and 5.42. The products to be shipped on Line 9 will be the same as those shipped on the Enbridge mainline, and all will be subject to the same tariff limits with respect to S&W.

Request: 5.44

a) With respect to both the hydrocarbon transported and the DRA solution being injected, what monitoring of temperature is in place at the DRA injection sites?

b) Downstream from the injection sites to ensure proper drag reduction?

c) At areas of turbulence such as valve sites, seams, pump sites, injector pump sites, curves in the pipeline, input and output pipes, where reagglomeration of DRA copolymers is likely to occur?

Response: 5.44

a) No dedicated temperature monitoring is utilized for DRA. In

Material Balance System ("MBS") the temperature effects on DRA performance are incorporated through compressibility and thermal expansion of the hydrocarbon transported.

b) Enbridge controls DRA injection rate set points, and monitors measured injection flow to ensure proper drag reduction. The DRA injection rates are adjusted as needed based on operational data.

c) Please refer to response to Les Citoyens au Courant IR 5.21.

Request: 5.45 Does the temperature monitoring system interphase with the dosage determination of DRA injection pumps to modulate dosage according to temperature? If so, how often? If not, how is dosage determined? How often is it reviewed/corrected?

Response: 5.45 DRA injection rates are specified based on flow rates and are adjusted as needed based on operational reviews and feedback from the pipeline operators.

Preamble: Line 9B reversal project proposal attachment 7, p. 50-51 states that "The addition of heavy crude products and the increased capacity on Line 9 is not expected to have any adverse effects, and the correlating impact on pipeline integrity due to metal loss can be managed based on the current integrity management systems. Metal loss in-line inspections (ILI) have been completed for Line 9B in 2012 and are currently under analysis. Further line assessments will incorporate the newest ILI data."

Request: 5.46 Does this mean that Enbridge has assessed the integrity of the pipeline based on past data alone?

Response: 5.46 The Pipeline EA developed for the Project was based on the most recent data available at the time and concluded that the line reversal will not require a modification to the current Integrity Management Plan for the corrosion, cracking or deformation programs. Analysis of the most recent ILI data is currently in progress.

Request: 5.47 Should not the 2012 data be included in the assessment before making conclusions about metal integrity?

Response: 5.47 The Pipeline EA prepared for the Project concluded that line reversal will not require a modification to the current Integrity Management Plan for the corrosion, cracking or deformation programs. Results of the 2012-2013 ILI program will be assessed as per Section 4 of the Pipeline EA in consideration of the new data

and will be used to determine the maintenance requirements of the pipeline as per CSA Z662.

Request: 5.48 If so, the data on which the assessment was made concerned a pipeline that had not yet transported any heavy crude products. Therefore, is not reflective of the rate of metal deterioration expected when these products will be transported in Line 9B. The critical factor upon which Enbridge concludes that its prevention programs need only include routine maintenance via in-line cleaning tools is the Froude number at which free water will be entrained in the light or sour crude oils. This decision does not take into account the particular nature of the products used to enable the transport of heavy crude products.

Response: 5.48 Heavy Crude oil was shipped on Line 9 in its original west to east configuration prior to reversal. Please refer to response to NEB IR 3.8.

Request: 5.49 How well does electro-protective coating work under waterways? (Please develop)

Response: 5.49 Enbridge does not utilize galvanic/sacrificial (assumed interpretation of “electro-protective”) coatings on Line 9B.

Request: 5.50 What monitoring systems are in place to ensure adequate alkalisation of the pipeline under the Ottawa River and all other streams and waterways the pipeline crosses between Ste-Justine-de-Newton and the north side of the Ottawa River? Is the entire pipeline of the said section under electro-protective coating?

Response: 5.50 Corrosion prevention is accomplished through a combination of a corrosion barrier coating system working in conjunction with cathodic protection ("CP"). Performance effectiveness of the coating and CP systems are qualified through monthly rectifier surveillance, system status notifications from scheduled remote monitoring interrogations, annual CP test station surveys and routine ILI metal loss programs. Adequate CP levels (polarization) are confirmed by measuring pipe-to-soil potentials and ensuring industry accepted criteria as outlined in NACE SP 0169 is achieved. Line 9 below the Ottawa River and other significant watercourse crossings within the subject region are also concrete coated.

Request: 5.51 Are at-risk areas monitored more frequently with respect to electro-protective coating?

Response: 5.51 Please refer to response to Les Citoyens au Courant IR 5.49.

Preamble: Le revêtement (coating) extérieur de Enbridge 9-B semble être un "Extruded Polyethylene with Asphalt Mastic", un type de revêtement généralement considéré comme électriquement isolant (shielding) et donc inhibant le bon fonctionnement de la protection cathodique. La protection cathodique est obtenue en injectant un courant dans une ou des électrodes située(s) le long du pipeline de façon à alcaliniser (c-à-d: élever le pH) le sol et l'eau en contact avec la surface métallique du pipeline, pour réduire / empêcher sa corrosion. Les revêtements isolants (shielding coatings) bloquent le passage de ce courant électrique sous le revêtement, ce qui fait que les infiltrations d'eau sous des cloques (blisters) du revêtement, ou sous le revêtement dans des zones où il s'est décollé de la paroi du pipeline, peut atteindre des pH neutres ou même acides, donc corroder le métal du pipeline. On peut dès lors à priori mettre en doute l'efficacité de la protection cathodique actuelle du pipeline B-9.

[Translation]

The exterior coating of Enbridge 9B seems to be an Extruded Polyethylene with Asphalt Mastic, a type of coating generally considered as electrically shielding and therefore inhibiting the proper functioning of the cathodic protection. Cathodic protection is obtained by injecting a current into one or more of the electrodes located along the pipeline so as to alkalinize (raise the pH of) soil and water in contact with the pipeline’s metal surface to reduce or prevent corrosion. Shielding coatings block this electric current from passing under the coating, meaning that water infiltrations under blisters in the coating, or under the coating in areas where it has become detached from the wall of the pipeline, may reach neutral or even acidic pH levels and therefore corrode the metal in the pipeline. This would appear to cast doubt on the effectiveness of the current cathodic protection of Line 9B.

Request: 5.52 Quels moyens la compagnie Enbridge met-elle en oeuvre pour vérifier l'efficacité de la protection cathodique du pipeline B-9 et / ou corriger le problème du shielding par le vieux revêtement du pipeline ?

[Translation]

5.52 What means is Enbridge applying to verify the effectiveness of the cathodic protection of Line 9B and/or to correct the problem of shielding by the pipeline’s old coating?

Response: 5.52 Enbridge understands that corrosion control using CP on tape

wrapped pipelines where disbondment has occurred can be problematic and relies primarily on its integrity programs for managing this threat. The integrity programs have provided more comprehensive and effective corrosion management strategies than could be achieved through application of CP alone. Enbridge has also recently been utilizing coupon technology for validating CP performance and is in the process of expanding this approach with a comprehensive coupon installation program.

6. Les volets sécurité, sûreté et plans d'urgence associés à la construction et à l'exploitation du projet proposé, notamment la planification des interventions et la prévention des dommages causés par des tiers :

[Translation]

The Safety, Security and Emergency Planning Associated with the Construction and Operation of the Proposed Project, Including Emergency Response Planning and Third Party Damage Prevention:

Request: 6.1 List the WHMIS classification of each and every substance that Enbridge proposes to use in the operation of this project.

Response: 6.1 Please refer to response to Les Citoyens au Courant IR 5.17.b.

Request: 6.2 List the clean-up facilities available to be on site of a spill, their available methods, their capacity, their response time.

Response: 6.2 Please refer to Mississaugas of the New Credit IR 17 for a description of available equipment. Please refer to response to Ontario IR 1.45a for response times. Please refer to response to Ontario IR 1.44.b.v for the ERP.

Quebec response will be primarily from Montreal, which is equipped with all the equipment necessary to initiate an emergency response including boats, skimmers, and booms.

Request: 6.3 Are they competent and equipped to clean up the materials in question, in view of the different behavior of each product with respect to solubility, volatility, distribution in the environment, interaction between molecules, aggregation, precipitation, persistence and toxicity?

Response: 6.3 Enbridge's ERP considers all types of crude oil product being transported on its system. In addition, Enbridge personnel are equipped and trained to handle all products transported by the pipeline.

Request: 6.4 In the last 10 years, on how many occasions have emergency spill procedures and protocols been rehearsed from A-Z by Enbridge staff and its contractors in Vaudreuil-Soulanges?

Response: 6.4 Enbridge conducts exercises regularly in the Rigaud area. These

exercises involve many local responders.

Request: 6.5 Have these protocols and procedures been analysed and verified for their adequacy by a government agency?

Response: 6.5 Enbridge's construction and operations manuals are filed with and are subject to audit by the National Energy Board ("NEB").

Request: 6.6 After a spill warning in the middle of the night during a winter blizzard, or in major traffic hold-ups on the 40 west highway, in what realistic delay and in the real world, can Enbridge fully deploy its booms and other equipment in the Ottawa River?

Response: 6.6 Enbridge is able to respond and begin to implement emergency response activities within 1.5 to 4 hours of an incident. Enbridge would use any and all means possible to access the area. Emergency crews would be able to access the area by water as well.

Request: 6.7 What independent studies exist on the possibility of cleaning up a diluted bitumen spill in a fast-flowing river such as the Ottawa river?

Response: 6.7 Enbridge is not aware of any specific independent studies relating to the cleanup diluted bitumen, or any other heavy crude, spill in a fast flowing river, such as the Ottawa River. Each incident is situation-specific, and cleanup methods depend on many factors such as the volume and type of product released, the location of the release, and climatic conditions at the time of the incident. In the event of a release Enbridge would work with the NEB and applicable regulators to implement a remedial plan to respond to the specific circumstances of the event.

Request: 6.8 Given its experience in the Kalamazoo River, one that is much smaller and with lesser flow and current than the Ottawa, what is Enbridge’s estimate of the percent of any spill that can be recovered before it gets to the downstream water treatment plants?

Response: 6.8 Every release is unique and recovery rate would depend on the volume and type of product released, the location of the release, the time of year, the flow rate of the river, and climatic conditions at the time of the incident.

Request: 6.9 How long can this be expected to take given both ideal and worst case scenarios?

Response: 6.9 Please refer to response to Les Citoyens au Courant IR 6.8.

Preamble: In/on water, diluted bitumen soon loses its lighter component, weathers and sinks in all types of water given some time (24 hours-2 months). This effect is increased by contact with particulate matter in water and normal ambient temperatures (Jeffrey W. Short, 2013). DRA sinks. Partitioning agents such as talc and graphite bind hydrocarbons and accelerate sinking (Brevet US 6576732, 2003). All this points to the fact that dilbit would sink in water and form a sludge on the bottom of the waterway.

Request: 6.10 Can cleanup response deal with hydrocarbon sludge in riverbeds and at the bottom of waterways?

Response: 6.10 Please refer to response to Les Citoyens au Courant 5.37. In the unlikely event of a release, Enbridge would have expertise and methodology in remobilizing and capturing submerged oil, and would work with the NEB and the other applicable regulatory agencies to ensure the appropriate remedial actions were applied given the specific circumstances of the event.

Preamble: The nature of the products transported and the proximity of the pipeline to the water table in the area between Ste- Justine-de-Newton and Pointe-Fortune suggests that a land spill would carry a high risk of contaminating the water table in view of all the minor and transient streams and waterways, and the porous nature of the soil.

Request: 6.11 What methods are available to monitor the contamination of the water table?

Response: 6.11 Groundwater monitoring wells are used to monitoring groundwater levels and groundwater quality.

Request: 6.12 What methods are available to decontaminate the water table if required?

Response: 6.12 Specific groundwater remedial measures implemented at a site would depend on many site-specific factors including the crude type, volume released, soil type and depth to bedrock, degree of bedrock fracturing, depth to groundwater, and aquifer characteristics. Potential methods may include, but not be limited to, in-situ bioremediation, chemical oxidation, air sparging, soil vapour extraction, pump and treat, multi-phase extraction, or natural attenuation.

Request: 6.13 If decontamination is possible, what time frame would be involved?

Response: 6.13 Yes, groundwater plumes can be remediated. Groundwater remediation timeframes are dependent on the remedial method(s) employed and site-specific characteristics, including the crude type, volume released, soil type and depth to bedrock, degree of bedrock fracturing, depth to groundwater, and aquifer characteristics.

Request: 6.14 Prior to transport, will clean-up crews and all other potential interveners on a spill site, as well as local hospitals and medical centers, be notified of all products involved (bitumen, diluents, adjuvants, fillers, DRA preparation, lubricants, others) in order to be properly prepared to respond to a spill with respect to their safety, the safety of the local and downstream population, and in the elaboration of the general clean-up plan and procedure?

Response: 6.14 Through Enbridge's Public Awareness Program ("PAP") emergency responders are made aware of what products are transported in the pipeline and their potential impacts. If an incident were to occur the MSDS would be forwarded to the hospitals.

Request: 6.15 Will they be provided with the appropriate MSDS and ratios of the hydrocarbon mixture?

Response: 6.15 Please refer to response to Les Citoyens au Courant IR 6.14.

Request: 6.16 Dans l'historique de la ligne 9b, combien de fuites ont été détecté par des résidents locaux et combien par les systèmes automatisés d'Enbridge (en proportion / pourcentage) ?

[Translation]

6.16 In the history of Line 9B, how many leaks have been detected by local residents and how many by Enbridge's automated system (as a proportion or percentage)?

Response: 6.16 All releases were identified by either local Enbridge personnel or third parties. The June 1978 release was before the implementation of the Computational Pipeline Monitoring system, and was identified by a third party.

Request: 6.17 En cas de déversement, est-ce que les intervenants sont tous des

employés d'Enbridge ?

[Translation]

6.17 In case of a spill, are the responders all Enbridge employees?

Response: 6.17 No. Enbridge has retained the services of a number of general and specialized contractors to assist Enbridge crews in the event of an incident.

Request: 6.18 Est-ce qu'il y a des compagnies sous-contractantes ?

[Translation]

6.18 Are there any subcontracting companies?

Response: 6.18 Please refer to response to Les Citoyens au Courant IR 6.17.

Request: 6.19 Qui s'occupe de l'entretien, sur place, (accessibilité, déneigement, désherbage) des stations de pompage, des valves, bornes de millage, panneaux d'avertissement etc. ?

[Translation]

6.19 Who handles on-site maintenance (access, snow clearing, weeding) of pumping stations, valves, distance markers, warning signs, etc.?

Response: 6.19 Enbridge personnel perform all site maintenance except for spraying for weeds. Enbridge hires local weed control companies to perform that work.

Request: 6.20 En cas de fuite majeur / déversement, y'a-t-il un plan d'intervention et d'évacuation pour aider les fermiers à protéger leurs animaux ?

[Translation]

6.20 In case of a major leak or spill, is there a response and evacuation plan to help farmers protect their animals?

Response: 6.20 Depending on the circumstances of the incident, Enbridge would work with the local landowners to ensure domestic and wild animals were kept away from the incident. If the incident impacted animal feeding grounds or drinking water, Enbridge would ensure that the animals were properly taken care of at another location away from the incident site.

Request: 6.21 Qui (quelle compagnie) évacue les animaux de ferme ?
[Translation]

6.21 Who (which company) evacuates farm animals?

Response: 6.21 Enbridge would use a contractor that followed regulations governing the handling and transport of farm animals.

Request: 6.22 À partir de quel moment jugez-vous qu'il soit nécessaire d'évacuer des lieux touchés par un déversement / une fuite ?

[Translation]

6.22 From what moment do you consider it necessary to evacuate the areas affected by a spill or leak?

Response: 6.22 Enbridge, in consultation with the munucipality's emergency response departments, would make that decision and would have the police and fire departments lead the evacuation.

Request: 6.23 Qui ordonne une évacuation et où est localisée la personne prenant cette décision ?

[Translation]

6.23 Who orders an evacuation, and where is the person making this decision located?

Response: 6.23 The Enbridge on scene commander in consultation with the City emergency response representative(s) would make that decision and have the police and fire departments lead the evacuation.

Request: 6.24 Est-ce que le service d'intervention pour une fuite « grave » est équipé de masques pour les résidents ?

[Translation]

6.24 Is the response service for a serious leak equipped with masks for residents?

Response: 6.24 No. Residents would be evacuated if necessary.

Request: 6.25 S'il y a un déversement, avant que l'eau ne soit testée, quel est le plan pour l'approvisionnement en eau à la population ?

[Translation]

6.25 If there is a spill, before the water is tested, what is the plan for supplying the local population with water?

Response: 6.25 Enbridge is committed to ensuring the safety of the public in the unlikely event of an incident. Protection of drinking water sources is a priority for Enbridge. If a water source became compromised or was expected to have been compromised, Enbridge would provide a safe, temporary supply of drinking water to all affected individuals. Enbridge would comply with any local or provincial regulations concerning the provision of temporary water supplies. Water would be provided to livestock or livestock would be moved to a more suitable location.

Preamble: "Any (oil) tanker built after July 6, 1993, must be double hulled to operate in Canadian waters. A double hull is a type of hull where the bottom and sides of a vessel have two complete layers of watertight hull surface. Tankers that are not double hulled are being gradually phased out. And, for large crude oil tankers, the phase-out date for single hulled vessels—like the Exxon Valdez—was 2010, which means that all large crude tankers operating in our waters today are double hulled."

Reference : http://actionplan.gc.ca/en/initiative/supporting-responsible-energy-development

Request: 6.26 How can you justify that the 9b, a single-walled, 40 years old pipeline that is crossing many important rivers, which millions of Quebecers rely on for their daily water supply, is safe?

Response: 6.26 Over Enbridge's long history of operating thousands of kilometers of pipelines, Enbridge has maintained a strong record for safety and reliability. Enbridge builds and maintains its pipeline system as a long life asset. Enbridge operates a comprehensive Integrity Management Program that includes the use of advanced internal inspection tools to ensure that the pipeline is inspected and maintained and can continue to safely operate as long as the pipeline is required. These programs encompass all tools, technologies and strategies needed to ensure that the pipeline has the necessary strength and operating capability to operate safely.

Request: 6.27 Why do pipelines carrying heavy crude oil not rule under same regulations?

Response: 6.27 The NEB regulates Enbridge Line 9 in accordance with the requirements of the *National Energy Board Act* and all applicable regulations.

Request: 6.28 Is it technically possible for Enbridge to instate a double-hull in all sections of the pipeline 9b that is crossing a river?

Response: 6.28 Enbridge maintains that the Line 9B pipeline is safe to operate as proposed in the Application without modifications to the Line 9B pipeline.

8. Les activités de consultation et les effets potentiels du projet proposé sur les propriétaires fonciers qui sont touchés ainsi que sur l'utilisation des terres :

[Translation]

Consultation Activities and the Potential Effects of the Proposed Project on Affected Landowners and on Land Use:

Request: 8.1 Est-ce que la compagnie Enbridge a expliqué son projet aux résidents des villages traversés par le pipeline dans la région entre Ste-Justine de Newton et Pointe-Fortune ?

[Translation]

8.1 Did Enbridge explain its project to residents of the villages through which the pipeline runs in the area between Sainte-Justine de Newton and Pointe-Fortune?

Response: 8.1 Yes, Enbridge has carried out several different consultation activities in order to engage stakeholders who may be impacted by the Project or who may have an interest in the Project. As part of the Application Enbridge filed a consultation report that details contact with all Project stakeholders (including mailings of letters, notices, brochures and face-to-face meetings) since the consultation program was launched on May 17, 2012. In addition, Attachment 1 to NEB IR 1.15 provides an update on all consultation activities that occurred between November 6, 2012 and March 19, 2013.

Enbridge has hosted six open houses in Quebec. In October 2012, prior to filing the Project application with the NEB Enbridge held an open house in Montreal East and Mirabel. More recently Enbridge held four community open houses in Quebec between April 24 and 25, 2013: Sainte-Anne-des-Plaines, Mirabel, Saint-

André-d'Argenteuil and Rigaud. These open houses were planned in response to requests from communities for Enbridge to hold more open houses. Enbridge is also aware that there has been growing interest in the Project and has responded accordingly with 19 more open houses planned and extensive additional outreach to city and town councils, conservation groups, local new media, citizen groups, and individuals. Each open house was advertised in local newspapers in the two weeks prior to the event. Attendance ranged from 25 to 79 individuals, the majority of whom were interested citizens.

These open houses provided an opportunity for guests to review and take home Project communication material (i.e. fact sheets), speak directly with Enbridge subject-matter experts and for Enbridge to listen and learn about the interests of its stakeholders.

Request: 8.2 Est-ce que Enbridge a donné ce mandat aux conseils municipaux qu'ils ont rencontrés ?

[Translation]

8.2 Did Enbridge given this mandate to the municipal councils it met with?

Response: 8.2 Yes, Enbridge has engaged 48 municipal, provincial and federal government authorities from Quebec, resulting in 208 consultation engagement activities ranging from Project related letters, emails, phone calls, personal meetings and presentations, each focused on providing information and responding to, questions and issues related to the Project.

Preamble: Certains fermiers et propriétaires fonciers de notre région dont les terrains sont traversés par le pipeline ont signé en 1975 un droit de servitude avec Interprovincial Pipelines, ceci basé sur une certaine utilisation définie du pipeline.

[Translation]

Some farmers and landowners in our area owning lands through which the pipeline runs signed an easement in 1975 with Interprovincial Pipelines based on a certain defined use of the pipeline.

Request: 8.3 Avez-vous le droit légal de changer l'utilisation de l'oléoduc 9B sans soumettre une nouvelle évaluation de risque à ces propriétaires et sans signer un nouveau droit de servitude avec eux ?

[Translation]

8.3 Do you have the legal right to change the use of Line 9B without submitting a new risk assessment to these owners and without signing a new easement with them?

Response: 8.3 An assessment of project risks is part of the review process by the NEB. This project does not require the signing of new easements with directly affected landowners.

Request: 8.4 Les propriétaires de terres traversées par le pipeline 9b sont-ils tous en accord avec le nouveau projet proposé ?

[Translation]

8.4 Are the owners of the lands through which Line 9B runs all in agreement with the new proposed Project? Do you have proof of such agreement with each of the owners?

Response: 8.4 Enbridge's public consultation program was designed and implemented to ensure all potentially affected parties, including landowners, were engaged early and were provided with detailed and timely information respecting the Project. This requirement to consult on the Project is not a requirement to obtain agreement from all potentially affected parties. It is an obligation to ensure that these parties have had sufficient opportunity to respond with comments, questions or concerns and, if they chose, to meet in person with Enbridge representatives to discuss issues or obtain further information. Enbridge has met that obligation.

Request: 8.5 Ont-ils été consultés un-à-un par Enbridge? Avez-vous une preuve?

[Translation]

8.5 Have they been consulted one-on-one by Enbridge? Do you have proof?

Response: 8.5 Please refer to response to Les Citoyens au Courant IR 8.1.

Request: 8.6 Les propriétaires de terres traversées par le pipeline 9b reçoivent-ils une compensation quelconque pour l'utilisation de leur terrain?

[Translation]

8.6 Do the owners of lands though which Line 9B runs receive any compensation at all for the use of their land?

Response: 8.6 Enbridge compensated the original landowner for the easement and temporary working space at the time the original easement was obtained and pipeline constructed.

Landowners receive compensation when Enbridge requires access to their property for the purpose of ongoing operations and maintenance. As well, compensation will also be provided if an above ground appertunance is added to their lands.

Request: 8.7 Sont-ils compensés lors des travaux d'excavation (ou autres travaux) ayant lieu sur leur terrain?

[Translation]

8.7 Are they compensated for the excavation work (or other work) taking place on their land?

Response: 8.7 When Enbridge requires access to a landowner's property for maintenance or to excavate, Enbridge pays compensation for crop loss and inconvenience.

Enbridge also compensates landowners if any above ground appurtenance is added to the landowner's property.