#### Spectra Energy Transmission

BC Pipeline and Field Services Divisions Fifth Avenue Place, East Tower Suite 2600, 425 - 1<sup>st</sup> Street S.W. Calgary, Alberta T2P 3L8

#### Rachel Kolber

Assistant General Counsel Director, Regulatory Law 403-699-1801 Direct 403-699-1585 Fax RSKolber@spectraenergy.com



February 10, 2016

Filed Electronically Original by Courier

Ms. Sheri Young Secretary of the Board **National Energy Board** 517 – 10<sup>th</sup> Avenue S.W. Calgary, AB T2R 0A7

Re: Westcoast Energy Inc., carrying on business as Spectra Energy Transmission (Westcoast)
Goodrich Extension Re-Injection Pipeline 2015 Reclamation Report

Order XG-W102-08-2010

National Energy Board (Board) File No.: OF-Fac-Gas-W102-2009-07 02

Dear Ms. Young:

Enclosed for filing with the Board is a reclamation report for the post-construction reclamation activities carried out on the Goodrich Extension Re-Injection Pipeline in 2015. The report is being provided in accordance with a commitment given in response to Informal Information Request No. 2 from the Board dated June 16, 2015 (A4L1T6).

The majority of the reclamation work carried out in 2015 was aimed at addressing the erosion and vegetation concerns identified in the fourth year post-construction environmental monitoring report. Reclamation activities included seeding, repairing culverts, disposing of refuse, and installing water breaks and cross berms.

Any questions with respect to this filing should be directed to Matt Mosher, Coordinator, Regulatory Facilities at (403) 699-1589.

Yours truly,

#### Original signed by

Rachel Kolber

**Enclosure** 

Acceptable	Requires Follow-up

6" Goodrich Re-injection Extension (Deactivated) — PL19400EX							'	, respective to the second sec		
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up	
	Infrastructure and Services - Culvert	Crushed culvert observed at <b>KP 0.54.</b>	Replace culvert and monitor in 2015 to ensure culvert is not affecting natural drainage patterns	N 6132029, E 560755	Crushed culvert; steep down drainage	Replace culvert.	Cut and reshaped culvert to allow flow.	No need to replace culvert; majority of culvert under roadbed was in good condition; only downstream end of culvert bent possibly from snowclearing equipment.	Monitor for flow and natural drainage patterns in Spring of 2016.	
0.00 - 1.00	Vegetation – Weeds	Low density of dandelions observed along access road at <b>KP 0.62</b> .	Control weeds and monitor in 2015.	N 6132186, E 560709	Good vegetation; no weeds observed	Do not treat weeds.  Dandelions are not noxious weeds; not listed in the BC Invasive Species List (EFlora, 2015) or the Invasive Plant Categories for NEBC (NEIPC, 2006)	None	Dandelion is not an invasive plant. No vegetation management required for Dandelion.	NA	
1.00 -2.00	Infrastructure and Services – Culvert and Refuse	Remnant geotextile fabric observed surrounding buried culvert at S6 channel at <b>KP 1.04</b> (Crossing #18).	Dispose of refuse appropriately.	NA	Did not access due to steep grade	Remove or repair silt fence.	Removed silt fence.	Silt fence no longer required.	NA	
	Vegetation Establishment / Soil Admixing	Moderate vegetation establishment from KP 1.26 to KP 1.42, KP 1.49 to KP 1.59, and from KP 1.90 to KP 1.92 likely due to soil admixing.	Monitor vegetation establishment in 2015.	N 6132648 E 560973	Low vegetation; rocky soil profile	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths and high percentage of coarse fragments present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.	
2.00 - 3.00	Vegetation Establishment / Soil Admixing	Low vegetation establishment from KP 2.02 to KP 2.39, at KP 2.54, and from KP 2.62 to KP2.68 likely due to admixing and coarse fragments.	Reseed in spring and monitor vegetation establishment in fall, 2015.	N 6133216 E 561577	Scattered vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths and high percentage of coarse fragments present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.	

Acceptable Requires Follow-u		Acceptable		Requires Follow-up	
------------------------------	--	------------	--	--------------------	--

			6" Goodrich Re						
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up
2.00 - 3.00	Physical Environment – Erosion	Significant topsoil layer lacking from KP 2.02 to KP 2.39.	Prepare soil to be reseeded in spring, 2015 and monitor vegetation establishment in fall, 2015.	N 6133360 E 561619	Low vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths and high percentage of coarse fragments present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.
	Infrastructure and Services – Refuse	Silt fence remnants observed on small drainage at <b>KP 3.05.</b>	Dispose of refuse appropriately.	N 6134062 E 561819	Tributary; low vegetation on north slope; silt fence down	Seed; remove silt fence.	Broadcast seeded (refer to Appendix A). Silt fence removal was not included in detailed work plan due to human error.	Minimal topsoil depths present within soil profiles in adjacent undisturbed land.	Manually remove silt fence and monitor vegetation in Spring 2016; reseed, if required.
3.00 - 4.00	Vegetation Establishment / Soil Admixing	Low vegetation establishment from KP 3.07 to KP 3.22.  Moderate vegetation establishment from KP 3.24 to KP 3.31 and from KP 3.72 to KP 3.85 likely due to admixing.	Reseed in spring, 2015 and monitor vegetation establishment in fall, 2015.	N 6134354 E 561921	Tributary; low vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.
	Physical Environment – Erosion	10m section of rilling erosion observed along east side of ROW from <b>KP 3.72 to KP 3.85.</b>	Monitor erosion in 2015 and repair if unstable.	N 6134672 E 562164	Tributary; low vegetation on north slope; silt fence down	Seed; remove silt fence.	Broadcast seeded (refer to Appendix A). Silt fence removal was not included in detailed work plan due to human error.	Minimal topsoil depths present within soil profiles in adjacent undisturbed land.	Manually remove silt fence and monitor vegetation in Spring 2016; reseed, if required.
4.00 - 5.00	Physical Environment – Erosion	Sloughing of right-of-way observed (5m wide x 5m long x 0.6m deep) along high gradient at <b>KP 4.00.</b>	Monitor erosion in 2015 and repair if unstable.	N 6134808 E 562244	Small landslide into ditch	Re-work soil; install multi-flow break; seed.	Installed rock over area of landslide and installed water breaks upslope; broadcast seeded re-worked areas.	Installed rock and secured over area of landslide to prevent furure surficial movement due to continual seepage of groundwater into upper layer of soil profile. Installed 2 water breaks upslope from the area of previous landslide to prevent surface flow from eroding additional areas.	In Spring 2016, monitor water breaks and previous landslide for erosion; monitor vegetation and re-seed, if required.

Acceptable	Requires Follow-up
------------	--------------------

			6" Goodrich Re	-injection Extension (Deactivat	ted) – PL19400EX		•	noquito i ono ii ap		
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up	
	Physical Environment – Erosion	Eroded area (5m wide x 5m long x 0.10m deep) observed along high gradient at <b>KP 5.14</b> .	Monitor erosion in 2015 and repair if unstable.	Same area as above.	NA	Area not found; same as above.	None	Area not found. Photo from Triton's report is actually of the area observed along high gradient at <b>KP 4.00</b> (above).	NA	
	Physical Environment – Erosion	Good riparian vegetation establishment along unnamed tributary to Brazion Creek at KP 5.56 (Crossing #11) but some bank material beginning to degrade.	Monitor erosion in 2015 and repair if unstable.	N 6136178 E 561427	Creek; waddling and willow staking in good condition; no erosion	Monitor for erosion.	None	Creek; waddling and willow staking in good condition; no erosion.	NA	
5.00 - 6.00	Vegetation Establishment / Soil Admixing	Low to no vegetation establishment in rare ecosystem from KP 5.75 to KP 6.00.  Moderate vegetation establishment at KP 5.29 likely due to soil admixing.	Monitor vegetation establishment in fall, 2015.	NA	NA	Do not seed.  Monitor - Rare Ecosystem SBSwk2 from <b>KP 9.9 to KP 10.2</b> - do not seed to encourage natural regeneration and limit disturbance as per EPP.	None	Minimal topsoil depths present within soil profiles in adjacent undisturbed land. No work recommended in rare ecosystem to limit disturbance.	NA	
	Physical Environment – Rutting	Rutting (0.2m deep) observed from KP 5.57 to KP 5.94.	Repair rutting and monitor in 2015.	N 6136287 E 561254	Low vegetation	Do not seed.  Monitor - Rare Ecosystem SBSwk2 from <b>KP 9.9 to KP 10.2</b> - do not seed to encourage natural regeneration and limit disturbance as per EPP.	None	Minimal topsoil depths present within soil profiles in adjacent undisturbed land. No work recommended in rare ecosystem to limit disturbance.	NA	
6.00 - 7.00	Vegetation Establishment / Soil Admixing	Low to no vegetation establishment in rare ecosystem from KP <b>6.00 to KP 6.16.</b> Low vegetation establishment from KP <b>6.28 to KP 6.58, and KP 6.84 to KP 7.00</b> likely due to soil admixing.	Reseed in spring, 2015 and monitor vegetation establishment in fall, 2015.	N 6136440 E 561028	Scattered vegetation	1) Do not seed. Monitor - Rare Ecosystem SBSwk2 from KP 5.75 to KP 6.16 - not seeded to encourage natural regeneration and limit disturbance.  2) Seed from KP 6.28 to KP 6.58, and KP 6.84 to KP 7.00.	Broadcast seeded from KP 6.28 to KP 6.58, and KP 6.84 to KP 7.00 (refer to Appendix A).		Monitor vegetation in Spring 2016; reseed, if required (from KP 6.28 to KP 6.58, and KP 6.84 to KP 7.00.)	

Acceptable	Requires Follow-up
------------	--------------------

			6" Goodrich Re-						
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up
6.00 - 7.00	Vegetation – Weeds	Low density of sweet clover observed at KP <b>6.58.</b>	Control weeds; monitor in 2015.	NA	NA	Do not treat weeds.  Sweet clover is not a noxious weed; not listed in the BC Invasive Species List (EFlora, 2015) or the Invasive Plant Categories for NEBC (NEIPC, 2006)	None	Sweet clover is not an invasive plant. No vegetation management required for Sweet Clover.	NA
	Vegetation Establishment / Soil Admixing	Low to no vegetation establishment from KP 7.00 to KP 7.10 due to soil admixing.  Moderate vegetation establishment from KP 7.22 to KP 7.54 due to soil admixing.	Reseed in spring, 2015 and monitor vegetation establishment in fall, 2015.	N 6136551 E 560843	Creek; no erosion; good vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths present within soil profiles in adjacent undisturbed land.	I Mighitar vegetation in Spring 71116, re-
7.00 - 8.00	Physical Environment  - Erosion/ Infrastructure and Services – Refuse	Drainage observed through ROW at KP 7.20 causing minor erosion. Remnant geotextile fabric observed within drainage.	Monitor erosion in 2015 and repair if unstable.  Dispose of refuse appropriately.	N 6136772 E 559952	Creek; minimal erosion; silt fence in water	Monitor for erosion; pick up fabric.	Fabric picked up. Stream bed re-graded and seeded.	Due to an internal company miscommunication, the contractor, using tracked equipment, not only removed the fabric but also re-graded the bed to the drainage, which was not required. No residual adverse effects are expected from the minor re-grading of the site.	Monitor tributary for erosion in Spring 2016.
	Physical Environment - Erosion/ Infrastructure	A large soil pile associated with a temporary work zone was identified as remaining at <b>KP 7.80</b> .	Recontour soil pile and monitor in 2015.	N 6136761 E 559359	Not a soil pile; part of undulating landscape; unlikely disturbed during construction.	Do not re-work soil.	None	No soil work required; part of undulating landscape; unlikely disturbed during construction.	NA
8.00 - 9.00	Physical Environment – Erosion	Tributary to Brazion Creek identified at <b>KP 8.14</b> with sloughing along the left bank.	Monitor erosion in 2015 and repair if unstable.	N 6136923 E 559124	Creek; no unnatural erosion present	Monitor for erosion.	None	Creek; no unnatural erosion present within RW. Erosion pictured in Triton's photo falls outside of RW.	NA

Acceptable	Requires Follow-up
------------	--------------------

			6" Goodrich Re	-injection Extension (Deactivated) – PL19400EX				Acceptable	Requires Follow-up
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up
8.00 - 9.00	Infrastructure and Services – Temporary Work Structures	Corduroy remaining along east side of right-of-way from <b>KP 8.56 to KP 8.73</b> limiting vegetation establishment.	Monitor for vegetation establishment in 2015.	N 6137250 E 558921	Trench crown and corduroy in low lying swamp	Blends into landscape; corduroy will decompose in wet environment.	None	EPP - Section 10: Rough Clean-up - Corduroy (1) - Corduroy installed on level or low lying depressions that is not likely to interupt drainage may be left in place.	NA
	Vegetation – Weeds	Low density of sweet clover observed at KP 8.23 and at KP 8.50.	Control weeds and monitor in 2015.	NA	NA	Do not treat weeds.  Sweet clover is not a noxious weed; not listed in the BC Invasive Species List (EFlora, 2015) or the Invasive Plant Categories for NEBC (NEIPC, 2006)	None	Sweet clover is not an invasive plant. No vegetation management required for Sweet Clover.	NA
	Vegetation Establishment / Soil Admixing	Low vegetation establishment from KP 8.48 to KP 8.54 likely due to soil admixing.  Moderate vegetation establishment from KP 8.19 to KP 8.48 likely due to soil admixing.	Reseed in spring, 2015 and monitor vegetation establishment in fall, 2015.	N 6137250 E 558921	Area of low vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.
9.00 - 10.00	Physical Environment – Trench Crown	Trench crown observed from <b>KP 9.19 to KP 9.44</b> ; does not appear to affect drainage across the right-of-way.	Install breaks in trench crown and monitor in 2015.	N 6137431 E 558644	Scattered vegetation	Seed. Do not install breaks in trench.	Broadcast seeded (refer to Appendix A).	Minor crown in trench is not causing drainage or erosion issues. Minimal topsoil depths present within soil profiles in adjacent land. Minimize disturbance to established vegetation on right-of-way.	Monitor vegetation in Spring 2016; reseed, if required.
	Vegetation Establishment / Soil Admixing / Course Fragments	Low to moderate vegetation establishment from KP 9.00 to KP 9.44 and from KP 9.76 to KP 9.85 due to admixing.  Course Fragments at KP 9.17 limits vegetation establishment.	Prepare (till) topsoil layer, reseed spring 2015 and monitor fall, 2015.	N 6137856 E 558032	Small area with low vegetation	Seed	Broadcast seeded (refer to Appendix A).	Minimal topsoil depths and high percentage of coarse fragments present within soil profiles in adjacent undisturbed land.	Monitor vegetation in Spring 2016; reseed, if required.

Acceptable	Requires Follow-up
------------	--------------------

			6" Goodrich Re	-injection Extension (Deactivat					
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up
9.00 - 10.00	Vegetation – Weeds	Low density of sweet clover observed at <b>KP 9.67</b> .	Control weeds and monitor in 2015.	NA	NA	Do not treat weeds.  Sweet clover is not a noxious weed; not listed in the BC Invasive Species List (EFlora, 2015) or the Invasive Plant Categories for NEBC (NEIPC, 2006).	None	Sweet clover is not an invasive plant. No vegetation management required for Sweet Clover.	NA
	Physical Environment  – Trench Crown	Trench crown observed from <b>KP 10.66 to KP 10.85</b> affecting drainage across the right-of-way.***See below KP 10.66 to KP 10.80	Install breaks in trench crown and monitor in 2015.	N 6138636 E 557714	Erosion rills across slope; trench crowned.	Regrading required with installation of additional cross berms to direct water of RW: seed.**See below**.	Cross berms installed; broadcast seeded (refer to Appendix A).	Cross berms installed to decrease flow velocity of surface run-off; soil work minimized to decrease disturbance to existing vegetation.	Monitor cross berms for erosion and monitor vegetation in Spring 2016; reseed, if required.
10.00 - 11.00	Vegetation Establishment / Soil Admixing	Moderate vegetation establishment at <b>KP 10.00</b> likely due to soil admixing.	Reseed in spring, 2015 and monitor vegetation establishment in fall, 2015.	NA	NA	Do not seed.  Monitor - Rare Ecosystem SBSwk2 from <b>KP 9.9 to KP 10.2</b> - do not seed to encourage natural regen and limit disturbance as per EPP.	None	Minimal topsoil depths present within soil profiles in adjacent undisturbed land. No work recommended in rare ecosystem to limit disturbance.	NA
	Vegetation – Weeds	Low density of sweet clover observed along left bank of Brazion Creek at <b>KP 10.01</b>		NA	NA	Do not treat weeds.  Sweet clover is not a noxious weed; not listed in the BC Invasive Species List (EFlora, 2015) or the Invasive Plant Categories for NEBC (NEIPC, 2006)	None	Sweet clover is not an invasive plant. No vegetation management required for Sweet Clover.	NA
	Physical Environment – Erosion	Erosion channel observed along east side of trench crown from KP 10.66 to KP 10.80.***	Monitor erosion in 2015 and repair if unstable.	NA	NA	**Same area as described above**  KP 10.66 to KP 10.80 falls within KP  10.66 to KP 10.85	NA	NA	NA

Acceptable	Requires Follow-up

			6" Goodrich Re-i						
Pipeline Location (KP)	Issue(s)	Triton Notes	Triton Recommendations October 2014	SET Environment UTM	SET Environment Notes July 2015	SET Environment Recommendations Summer 2015	SET Reclamation Work Completed	Justification for Type of Work Completed	Recommendations for Follow-up
11.00 - 12.00	Infrastructure and Services – Culvert	Crushed culvert observed at <b>KP 11.69</b> .	Replace culvert and monitor in 2015 to ensure culvert is not affecting drainage along road through the ROW.	N 6139199 E 557633	NA	Replace culvert	Culvert not found.	NA	Look for culvert again in Spring 2016.
	Physical Environment - Erosion	Minor erosion observed along drainage to culvert (Crossing #2) from <b>KP 11.75 to KP 11.80</b> .	Repair eroded area if unstable.	N 6139199 E 557633	Depression in ditch is a culvert inlet.	Monitor for erosion.	None	Monitoring resulted in minimal erosion taking place. Erosion does not warrant soil work and disturbance.	Monitor ditch for erosion in Spring 2016.
11.00 - 12.00	Vegetation – Weeds	High density of sweet clover observed from <b>KP 11.00 to KP 11.24</b> .  Low density of scentless chamomile observed at <b>KP 11.6</b> 2.	Control weeds and monitor in 2015.	N 6139199 E 557633		Sweet clover & narrowleaved hawksbeard are not noxious weeds; they are not listed in the BC Invasive Species List (EFlora, 2015).  Narrowleaved hawksbeard is listed as a Category 3 Secondary Invasive Plant (NEIPC, 2006).  Plan for chemical treatment of noxious weeds in Spring 2016	None	No vegetation management required for Sweet Clover.  Monitor Scentless Chamomile and Narrow-leaved Hawksbeard to determine level of treatment.	Scentless chamomile is a noxious weed & requires control. Monitor Scentless Chamomile in Spring 2016 & plan for treatment, if present.  Monitor Narow-leaved Hawksbeard to determine level of treatment. (Requirement to contain them is usually site specific, NEIPC, 2006.)
	Vegetation – Weeds	Low densities of sweet clover, dandelion, and narrow-leaved hawks beard associated with access road at KP 11.64.	Control weeds and monitor in 2015.	N 6139199 E 557633	Scentless chamomile observed along access road to wellsite.	Sweet clover & narrowleaved hawksbeard are not noxious weeds; they are not listed in the BC Invasive Species List (EFlora, 2015). Narrowleaved hawksbeard is listed as a Category 3 Secondary Invasive Plant (NEIPC, 2006).  Plan for chemical treatment of noxious weeds in Spring 2016	None	No vegetation management required for Sweet Clover.  Monitor Scentless Chamomile and Narrow-leaved Hawksbeard to determine level of treatment.	Scentless chamomile is a noxious weed & requires control. Monitor Scentless Chamomile in Spring 2016 & plan for treament, if present.  Monitor Narow-leaved Hawksbeard to determine level of treatment. (Requirement to contain them is usually site specific, NEIPC, 2006.)





