

November 21, 2018

PLG File: 18-1644

Michael Lawrence
Natural Resource Officer
Chilliwack Field Unit, South Coast Region, Compliance and Enforcement Branch
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Re: Environmental Site Assessment Summary Letter
9857 McKinnon Crescent, Langley, BC & 22346 100 Avenue, Langley, BC

Dear Mr. Lawrence,

This letter is in response to an email correspondence received from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (MFLNRORD), on November 19, 2018, referencing "a potential *Water Sustainability Act (WSA)* contravention at 9857 McKinnon Crescent, Langley [Subject Property], where land clearing has allegedly impacted a watercourse on the property". As your November 19, 2018 correspondence points out, "the northern property is very wet...has a mapped watercourse running through it..., and borders a property to the north where a biologist has identified a wetland that...may extend onto [the Subject Property]". The purpose of this letter is to provide MFLNRORD with a summary of three (3) seasonal Environmental Site Assessments (ESA; Appendix A attached) and a one (1) additional site visit completed by Pacific Land Group (PLG) in 2018 within the Subject Property, to clarify environmental site characteristics and the identification of aquatic features described in your correspondence.

PLG's ESA reports were prepared in consideration of the TOL's zoning bylaw, best management practices (BMPs), environmental protection policies under the Riparian Area Regulation (RAR) guidelines, and in accordance with a confirmation letter from the Agricultural Land Commission (ALC), dated September 30, 2016 (within Appendix A attached). As the Subject Property is located within the Agricultural Land Reserve (ALR), the ALC letter states that for lower value watercourses within the ALR (i.e., ditches, unmapped water features, water features lacking hydrological connection), further evaluation by a Qualified Environmental Professional (QEP) is required to confirm stream classifications and determine appropriate protection measures and setbacks, if applicable.

The following two (2) supporting documents, summarizing on-site environmental conditions and recommendations for the Subject Property, are attached to this letter:

- PLG Final ESA Letter (August 23, 2018; Appendix A attached); and
- Email Correspondence from Rod Shead (September 10, 2018).

ESA Site Visits – February, May and August 2018

Following a recommendation from the Township of Langley's (TOL) Environmental Coordinator, Rod Shead, PLG's biologists performed three (3) seasonal site visits within the Subject Property to evaluate environmental conditions and determine the appropriate classification and setbacks (if applicable) of TOL's GeoSource and iMapBC mapped and unmapped aquatic features.

Prior to the Preliminary ESA (February 2018), PLG's biologists compared the aquatic features identified on TOL's GeoSource mapping and iMapBC and observed that information presented by the two databases was inconsistent with each other (i.e., several water features identified in one database were not identified in the other database). As a result, PLG performed due diligence by conducting several site visits over the course of 10 months to confirm the varying database results. PLG maintained communication with the TOL throughout the assessment period.

Five (5) aquatic resources within the Subject Property (i.e., Ditch 1, Ditch 2, Wetted Pool 1, Wetted Pool 2 and Wetted Pool 3) were evaluated during PLG's ESAs. PLG concluded that the three (3) unmapped on-site aquatic features (i.e., Wetted Pool 1, Wetted Pool 2 and Wetted Pool 3) were topographically isolated wetted depressions with lack of headwater input and off-site hydrologic connectivity. As a result of much observation, PLG confirmed that these wetted features are not considered streams under RAR due to lack of permanence, topographical isolation and lack of connectivity to off-site watercourses (e.g., the Fraser River) and therefore, not subject to development setbacks. In addition, based on GeoSource mapping and confirmation during the Preliminary ESA, Ditch 2 is considered to be a Class C roadside ditch. Ditch 2 appeared to be a constructed drainage ditch that receives flows during rainfall events and acts as a constructed stormwater control feature. Ditch 2 appears to be a "swale" with constructed sloped banks on both sides, and flow is directed east through an elevated culvert under McKinnon Crescent. Although Ditch 2 is not currently mapped on IMap, it is identified as a Class C ditch on TOL's GeoSource and no streamside setback is applicable.

Following submission of the Final ESA report, Rod Shead replied in email on Monday, September 10, 2018, that although other wetted/drainage features on the property (i.e., Ditch 2, Wetted Pool 1, Wetted Pool 2 and Wetted Pool 3) do not require protective setbacks, TOL staff concluded that Ditch 1 (located along the southern boundary of the property) requires protection in accordance with the provincial RAR [i.e., 2 m Streamside Protection and Enhancement Area (SPEA) from top of bank]. The owner is aware that they need to exercise diligence and ensure on-site works within the Subject Property comply with relevant TOL legislation.

Additional Site Visit – November 15, 2018

A detailed Riparian Areas Regulation (RAR) Assessment Report was prepared by ENKON Environmental Ltd. (ENKON) on July 31, 2017 which identified two (2) aquatic features within the neighbouring property (i.e., Unnamed Tributary and Unnamed Wetland), neither of which are identified on TOL's GeoSource mapping or iMapBC. A copy of the RAR report was made available to PLG by Rod Shead on November 14, 2018.

In response to receipt of the RAR report, and comments from Rod about concerns raised by neighbours regarding on-site earth works at the Subject Property, PLG's biologists performed an

additional due diligence site visit on November 15, 2018 to further evaluate on-site conditions within the Subject Property and investigate conditions within the neighbouring property to the north (22346 100 Avenue, Langley, BC).

The purpose of PLG's site visit on November 15, 2018 was to evaluate the features identified in the RAR report and determined that flows within Unnamed Tributary are surficial and non-permanent in nature. The Unnamed Tributary appeared to connect overland to a wetted area (i.e., Unnamed Wetland) within the same property; however, drainages were confirmed to be isolated, lack headwaters (receive 100 Avenue road runoff only), and do not connect to off-site watercourses (east of McKinnon Crescent, as identified on TOL's GeoSource and iMapBC). On-site observations during the November 15, 2018 visit are consistent with a topographic survey prepared for the neighbouring property (attached to the 2017 RAR report), which outlines isolated watercourse conditions and shows that the Unnamed Tributary picks up road water from 100 Avenue and flows south through the neighbouring property before continuing west and terminating within the Unnamed Wetland also located within the neighbouring property. During the additional site visit, a smaller non-connected pool was observed to the east of the Unnamed Tributary-Unnamed Wetland connection point (i.e., a low elevation spot within the Subject Property, as identified on the topographic survey). This smaller wetted pool within the Subject Property was not observed to be hydrologically connected to the aquatic features within the neighbouring property. These additional site visit findings are consistent with observations summarized in PLG's final ESA letter, which was accepted by the TOL via the September 10, 2018 email from Rod Shead.

Conclusion

The ESAs and additional site visit conducted by PLG provide supplementary information to further clarify site characteristics within the Subject Property and the appropriate boundaries of the aquatic features in question within the neighbouring property to the north of the Subject Property.

Following the receipt of additional information, PLG concluded that flows within the neighbouring property are surficial and a result of storm events, lack significant headwaters, are ephemeral and non-permanent in nature, and lack hydrologic connectivity to aquatic features within the Subject Property and off-site. The wetted features previously evaluated within the Subject Property (9857 McKinnon Crescent, Langley) have been further evaluated, and overland flows within the Unnamed Tributary within the neighbouring property (22346 100 Avenue, Langley) appear to flow westward into a standing wet depression (i.e., Unnamed Wetland). Water from 100 Avenue naturally collects in these topographically low, seasonally saturated depressions, and the resulting wetted pools do not connect to any tributaries east of McKinnon Crescent. The mapped roadside ditches along the west side of McKinnon Crescent (i.e., TOL GeoSource Class C ditches that were not mapped on iMapBC) were constructed for rainfall and road drainage collection, and flow within the ditches is directed east through elevated culverts under McKinnon Crescent. The wetted pools within the Subject Property are not connected to Ditch 2 and are therefore not hydrologically connected to any off-site watercourses to the east of the Subject Property.

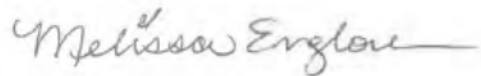
We respectfully request your review and consideration of the information summarized in this letter and its attachments, and trust that the information provided gives a clear overview of the

environmental conditions and aquatic features within the Subject Property to sufficiently address comments received from MFLNRORD.

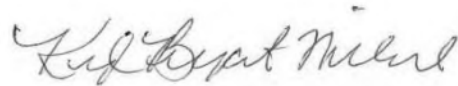
Should you require clarification, discussion, or further information regarding this correspondence, please do not hesitate to contact the undersigned at 604-501-1624 or via email at either melissa@pacificlandgroup.ca or kyla@pacificlandgroup.ca.

Sincerely,

PACIFIC LAND RESOURCE GROUP INC.



Melissa Englouen, B.I.T.
Junior Biologist



Reviewed by: Kyla Bryant-Milne, R.P.Bio, QEP
Biologist

ATTACHMENTS:

Appendix A: PLG Final ESA Letter (August 23, 2018)

Appendix B: Email Correspondence from Rod Shead (September 10, 2018)

Appendix A – PLG Final ESA Letter (August 23, 2018)

August 23, 2018

Our File: 18-1644

s.22

Attn: s.22

**Re: Final Environmental Site Assessment
9857 McKinnon Crescent, Langley, BC**

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Pacific Land Resource Group Inc. (PLG) is pleased to present this letter summarizing the findings of a Final Environmental Site Assessment (ESA) for the property located at 9857 McKinnon Crescent, Langley (Subject Property). This ESA has been prepared as a condition of a Preliminary Layout Approval (PLA) associated with the Township of Langley (TOL) file # 12-05-0014.

Two previous ESA visits were conducted in February and May 2018 respectively (Appendix A and B). Results of these assessments suggested a third and final "dry season" investigation should occur to reevaluate and confirm on-site watercourse conditions in summer assessment conditions (i.e., no precipitation for a minimum 30 days from follow-up assessment) to determine appropriate watercourse classifications and setbacks, if applicable. Results obtained during both February and May 2018 assessments has been considered as part of this final site evaluation.

PLG performed this final follow-up ESA in Summer 2018 to reevaluate and confirm on-site conditions in dry assessment conditions. The purpose of this final assessment was to confirm the wetland like conditions of Wetted Pool 1 and 3 to ensure that development setbacks are assigned appropriately. This Final ESA has been prepared in consideration of the TOL's zoning bylaw, the Agricultural Land Reserve (ALR) guidelines (as the property is located in the ALR), best management practices (BMPs), environmental protection policies under the Riparian Area Regulation (RAR) guidelines, and conditions of approval outlined in an agreement from the Ministry of Environment (MOE) and Federal Fisheries and Oceans Canada (DFO), dated June 10, 1996 (DFO Agreement; Appendix B attached).

A summary of follow-up and final ESA findings and recommendations has been provided below.

August 2018 – Final ESA

PLG's Senior Biologist Qualified Environmental Professionals (QEPs) conducted a final assessment within the Subject Property on August 8 and 19, 2018, to reevaluate the biophysical conditions of two (2) unmapped waterbodies (Wetted Pool 1 and 3) and identify any additional unmapped waterbodies within the Subject Property (Figure 3).

Figure 3. Aerial photo of the Subject Property (red outline), mapped watercourses and approximate location of unmapped features (blue outline) observed during final ESA.

August 2018 Results –

Ditch 1 – Results

Ditch 1

Ditch 1 was observed within a depression along the length of the southern boundary of the Subject Property (Photograph 1). Ditch 1 is confirmed to be a downstream continuation of the off-site watercourse located northwest of the Subject Property. Ditch 1 had a wetted width of approximately 1 m and was moist, with no flow at the time of the site visit. Riparian vegetation adjacent to Ditch 1 included a dominant mixture of Himalayan blackberry (*Rubus discolor*) and common grasses. Several alder trees were also noted along the north side of the ditch.



Photograph 1. View looking west at riparian vegetation of Ditch 1 within the Subject Property.

Based on follow-up ESA results and confirmation during a final field evaluation, Ditch 1 is considered to be a Class B watercourse under the TOL streamside protection bylaw. As a result of placement within the ALR, a setback of 2 m would be appropriate to ensure protection of the watercourse. It is understood that construction will occur away from this ditch and construction will not affect the integrity of this watercourse. No further recommendations are provided.

Wetted Pool 1 – Results

Wetted Pool 1 was observed during the final ESA and was located within the mid-eastern portion of the Subject Property (Figure 3). Wetted Pool 1 is currently not mapped on the TOL's GeoSource mapping and appeared to be a small, topographically and hydrologically isolated wetted area with no evidence of an inflow/outflow source (i.e., no hydrological connection to fish habitat) and no defined edges during the assessment. Although the ground around Wetted Pool 1 was saturated during the assessment, no pooling water was observed (i.e., water present during previous assessments appeared to have drained to ground). Wetted Pool 1 was confirmed to have likely formed as a result of stormwater runoff from the adjacent road (McKinnon Crescent) and overland flow from surrounding higher topography/ground alteration. Vegetation observed within the saturated area of Wetted Pool 1 included mostly Skunk cabbage (*Lysichiton americanus*), with surrounding and overhanging native vegetation consisting of Western red-cedar (*Thuja plicata*), Red alder (*Alnus rubra*), Black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*), Bracken fern (*Pteridium aquilinum*), Sword fern (*Polystichum munitum*), Horsetail (*Equisetum*) and grasses (*Poaceae*; Photograph 2). Non-native vegetation included Himalayan blackberry (*Rubus armeniacus*), ivy (*Hedera* sp.) and holly (*Ilex* sp.). Non-native Himalayan blackberry made up approximately 10% of the vegetation within and adjacent to Wetted Pool 1. The existence of Skunk cabbage during the assessment was confirmed to be due to the presence of significant canopy cover (i.e., overhanging vegetation) which contributes to a slow the evaporation rate from Wetted Pool 1.

The combination of retained moisture and saturated soils as a result of topography likely explains the presence of Skunk cabbage during the final assessment.



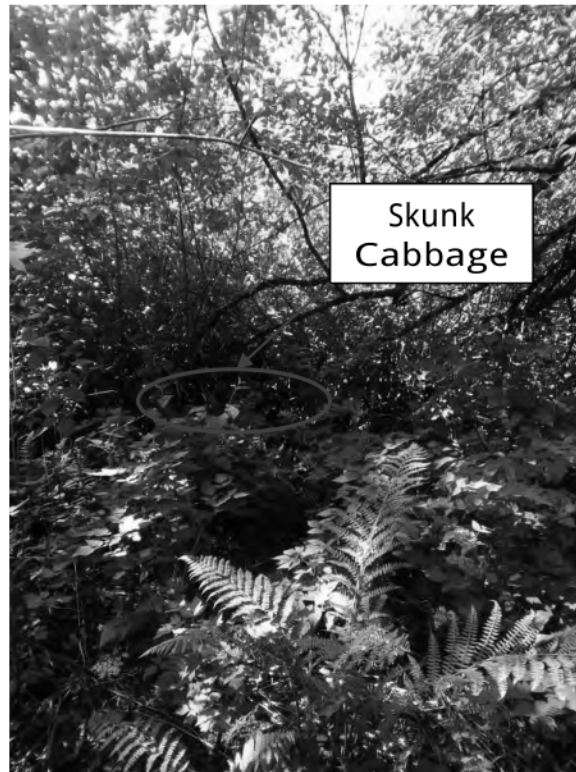
Photograph 2. View looking east at skunk cabbage and native vegetation within and around Wetted Pool 1 within Subject Property.

Based on follow-up ESA results and confirmation during a final field evaluation, Wetted Pool 1 is considered to be a topographically isolated wetted depression with a lack of hydrologic connectivity and no defined aquatic boundary that would indicate a wetland classification. As a result, no classification or streamside setback is applicable.

Wetted Pool 3 – Results

Wetted Pool 3 was observed during the final ESA and was located within the mid-central portion of the Subject Property, between Wetted Pools 1 and 2 (Figure 3). Wetted Pool 3 is currently not mapped on the TOL's GeoSource mapping and appeared to be a small, topographically and hydrologically isolated wetted area with no evidence of an inflow/outflow source (i.e., no hydrological connection to fish habitat) and no defined edges during the assessment. Although the ground around Wetted Pool 3 was saturated during the assessment, no pooling water was observed (i.e., water present during previous assessments appeared to have drained to ground). Wetted Pool 3 was confirmed to have likely formed as a result of stormwater runoff from the adjacent road (McKinnon Crescent) and overland flow from surrounding higher topography/ground alteration. Vegetation observed within the saturated area of Wetted Pool 3 included mostly Skunk cabbage (*Lysichiton americanus*), with surrounding and overhanging native vegetation consisting of Red alder (*Alnus rubra*), Black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*), Bracken fern (*Pteridium aquilinum*), Sword fern (*Polystichum munitum*), Horsetail (*Equisetum*) and grasses (*Poaceae*; Photograph 3). Non-native vegetation included Himalayan blackberry (*Rubus armeniacus*), ivy (*Hedera* sp.) and holly (*Ilex* sp.). Non-native Himalayan blackberry made up approximately 20% of the vegetation around Wetted Pool 3. The existence of Skunk cabbage during the assessment was confirmed to be due

to the presence of significant canopy cover (i.e., overhanging vegetation) which presumably slowed the evaporation rate from Wetted Pool 3. The combination of retained moisture and saturated soils as a result of topography likely explains the presence of Skunk cabbage during the final assessment.



Photograph 3. View looking south at skunk cabbage (red circle) and native vegetation within and around Wetted Pool 3 within Subject Property.

Based on follow-up ESA results and confirmation during a final field evaluation, Wetted Pool 3 is considered to be a topographically isolated wetted depression with a lack of hydrologic connectivity and no defined aquatic boundary that would indicate a wetland classification. As a result, **no classification or streamside setback is applicable.**

Conclusion

The following table identifies all on-site aquatic resources that were evaluated during the final assessment and would need to be considered prior to development within the Subject Property (Table 1). Table 1 provides a brief summary of the TOL's current GeoSource mapped stream classifications, standard DFO setbacks for ALR properties, QEP recommended final assessment classifications, and any relevant setbacks.

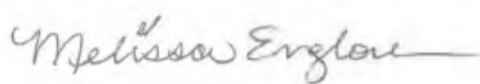
Table 1. Final Watercourse Classifications and Setbacks

Watercourse Name	GeoSource Classification	Standard DFO Setback for ALR Properties	Recommended Final Classification	Associated Setback	Notes
Ditch 1	Class B	-	Class B	2 m RAR setback	Current mapping classification identifies Ditch 1 as a Class B ditch. Under RAR criteria, a 2 m development setback is required for this watercourse.
Wetted Pool 1	N/A	15 m setback	None	N/A	Lack of defined aquatic boundary, no hydrologic connectivity observed during final assessment. Not considered a stream under RAR.
Wetted Pool 2	N/A	N/A	None	N/A	Lack of defined aquatic boundary, no hydrophytic vegetation communities observed during final assessment. Not considered a stream under RAR.
Wetted Pool 3	N/A	15 m setback	None	N/A	Lack of defined aquatic boundary, no hydrologic connectivity observed during final assessment. Not considered a stream under RAR.

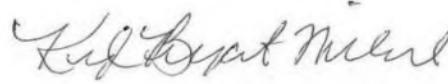
We trust that the information provided within this report is sufficient and gives a clear overview of the assessed area of the Subject Property and recommendations with respect to current environmental site conditions and applicable watercourse setbacks. Should you have any comments or questions regarding this correspondence, please contact the undersigned at (604) 501-1624.

Sincerely,

PACIFIC LAND RESOURCE GROUP INC.



Melissa Englouen, BIT
Junior Biologist



Reviewed by: Kyla Bryant-Milne, RPBio
Biologist

ATTACHMENTS:

Appendix A: Preliminary ESA Report (March 2, 2018)
Appendix B: PLG Follow-Up ESA Report (May 17, 2018)
Appendix C: DFO Agreement Letter (June 10, 1996)

Appendix A – Preliminary ESA Report (March 2, 2018)

March 2, 2018

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Re: Preliminary Environmental Site Assessment
9857 McKinnon Crescent, Langley, BC

Pacific Land Resource Group Inc. (PLG) is pleased to present this letter summarizing the findings of a preliminary Environmental Site Assessment (ESA) and preliminary recommendations for watercourse setbacks for a property located at 9857 McKinnon Crescent, Langley (Subject Property). The purpose of this preliminary ESA was to evaluate current on-site watercourse conditions and classifications based on the Township of Langley's (TOL) online mapping system (GeoSource), identify any unmapped watercourses, determine potential watercourse setbacks and determine whether there may be any potential development constraints. This report has been prepared in consideration of the TOL's zoning bylaw, best management practices (BMPs) and environmental protection policies under the Riparian Area Regulation (RAR) guidelines. Preliminary setback recommendations have been provided accordingly.

At this time, there is no development application associated with the Subject Property.

Legislation Review

As per a confirmation letter from the Agricultural Land Commission (ALC), dated September 30, 2016, the Subject Property is located within the Agricultural Land Reserve (ALR). For any watercourses and adjacent riparian areas within the ALR, typical TOL streamside protection criteria, as described in the zoning bylaw, do not apply. Under an agreement with Federal Fisheries & Oceans Canada (DFO) (June 10, 1996), "any watercourses/wetlands on the property which are not located within ravines... [are subject to a setback of] fifteen (15.0) horizontal metres from the high water mark of the stream/wetland". Both DFO and the TOL require a Qualified Environmental Professional (QEP) to conduct an ESA to confirm stream classification and determine appropriate streamside setback areas, if required.

For lower value watercourses within the ALR (i.e., ditches, unmapped water features, water features lacking hydrological connection), water features require further evaluation by a QEP to determine appropriate protection measures and setbacks, if applicable. Under Provincial RAR guidelines, ditches are typically subject to a 2 m setback. Setbacks are determined following the completion of a detailed assessment by a QEP and are further approved by the Ministry of Forest, Lands and Natural Resource Operations (MFLNRO). For municipally mapped C Class watercourses, regardless of zoning, no setbacks are applied during construction. Standard BMPs

are required for infilling and drainage management at the time of development and construction.

TOL Classifications

The TOL classifies watercourses as follows:

- Class A (RED): Inhabited by salmonids year-round or potentially inhabited year-round.
- Class A(OD) (ORANGE): Inhabited (or potentially inhabited) by salmonids primarily during the over-wintering period when base flows are re-established, and has intermittent water supply that may dry up in summery months.
- Class A(OW) (MAGENTA): Inhabited by salmonids year-round, primarily during the over-wintering period with summer usage restricted by high temperatures and/or low dissolved oxygen levels.
- Class B (YELLOW): Significant food/nutrient value. No fish present.
- Class C (GREEN): Insignificant food/nutrient value. No fish present.

Background Information Review

Prior to conducting the on-site potential watercourse confirmation assessment, a review of online databases, which documents fish and wildlife habitat values on-site, was completed. The following databases were reviewed:

- The Township of Langley's online mapping system (GeoSource)
- DFO's Mapster
- Fisheries Information Summary System (FISS)
- Habitat Wizard

A background review of GeoSource identified the following on-site watercourse located within the Subject Property (Figure 1):

- 1) One yellow coded, open channel (Class B) ditch (Ditch 1) located along the entire southern boundary of the Subject Property.

In addition to the on-site watercourse, GeoSource identified the following watercourse located outside of the Subject Property (Figure 1):

- 1) One green coded, open channel (Class C) ditch (Ditch 2) located along approximately 85 metres of the eastern boundary outside of the Subject Property.

Figure 1. Aerial photo of the Subject Property (red outline) and watercourses, as per GeoSource.

Remaining background reviews (DFO's Mapster, FISS and Habitat Wizard) did not reveal any Species at Risk (SAR), significant fisheries values or sensitive habitat within the Subject Area.

Field Assessment

PLG's Biologist in Training (BIT) conducted an on-site assessment within the Subject Property on February 20, 2018, in order to assess the biophysical conditions of the GeoSource mapped watercourse within the Subject Property. As part of this assessment, GeoSource mapped off-site watercourses adjacent to the Subject Property and other unmapped watercourses within the Subject Property were also evaluated. During the on-site assessment, two (2) unmapped on-site waterbodies (i.e., Wetted Pool 1 and 2) were evaluated (Figure 2).

Figure 2. Aerial photo of the Subject Property (red outline) and unmapped watercourses.

Results –

Ditch 1 – Results

Ditch 1 was observed along the entire southern boundary of the Subject Property (Photograph 1). Ditch 1 is a downstream continuation of the off-site watercourse located northwest of the Subject Property. Ditch 1 had an approximate wetted width of 1 metre, with northwest-southeast flowing water observed at the time of assessment (Photograph 2). Most riparian vegetation adjacent to Ditch 1 was dormant and covered by snow at the time of assessment.



Photograph 1. View looking west at Ditch 1 within the Subject Property.

Resulting Setback

Under the TOL classification system, Ditch 1 is currently mapped as a Class B ditch. Under the RAR criteria, this watercourse is subject to a **2 m streamside setback**. However, upon completion of a recommended second field assessment, the QEP may consider declassification of the mapped Class B ditch to a Class C ditch. Further evaluation of this watercourse is recommended to confirm classification and setback, if applicable.

Ditch 2 – Results

Ditch 2 was an off-site watercourse approximately 85 metres in length along the eastern boundary of the Subject Property. Ditch 2 appeared to be a man-made ditch, likely for roadside drainage purposes and is approximately 0.5 metres wide (Photograph 2). Water present within Ditch 2 at the time of assessment was low and flowed in a south-north direction. No overhanging riparian vegetation was observed and the area was covered in snow during the assessment.



Photograph 2. View looking south at Ditch 2 outside of the Subject Property.

Based on GeoSource mapping and confirmed during a field evaluation, Ditch 2 is considered to be a Class C roadside ditch. As a result, no streamside setback is applicable.

Wetted Pool 1 – Results

Wetted Pool 1 was identified during the preliminary ESA running northwest-southeast within the northern portion of the Subject Property. Wetted Pool 1 is currently not mapped on GeoSource mapping. Water was present in Wetted Pool 1 with an approximate average wetted width of 2.5 metres at the time of assessment (Photograph 3). Wetted Pool 1 appeared to be a low-lying depression with evidence of shallow scouring in the western portion. A gradual slope to the north showed evidence of overland flow from higher areas. Substrate comprised of mud and leaf litter, consistent with adjacent overhanging riparian vegetation. Native riparian vegetation included Western red-cedar (*Thuja plicata*), Red alder (*Alnus rubra*), Black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*) and Sword fern (*Polystichum munitum*). Non-native riparian vegetation included Himalayan blackberry (*Rubus armeniacus*) and holly (*Ilex* sp.). Non-native Himalayan blackberry made up approximately 10% of the riparian vegetation along Wetted Pool 1.



Photograph 3. View looking west at Wetted Pool 1 within the Subject Property.

Snow cover and frozen conditions made it difficult to confirm Wetted Pool 1 classification and appropriate setback requirement. A follow-up ESA is recommended to determine if Wetted Pool 1 is hydrologically connected to any watercourses with fish potential/value and confirm if a setback applies. At this time, only preliminary assessment findings are associated with Wetted Pool 1.

Wetted Pool 2 – Results

Wetted Pool 2 was identified during the preliminary ESA within the mid-eastern portion of the Subject Property. Wetted Pool 2 is currently not mapped on GeoSource mapping. Frozen water was present in Wetted Pool 2 at the time of assessment (Photograph 4). Wetted Pool 2 appeared to be a large wetted pool area with no evidence of defined edges, except for the delineation from adjacent upward sloping southern and eastern areas. Vegetation observed within and adjacent to Wetted Pool 2 included a mixture of native grasses (*Poaceae*).



Photograph 4. View looking west at Wetted Pool 2 within the Subject Property.

Snow cover and frozen conditions made it difficult to confirm Wetted Pool 2 classification and appropriate setback requirement. A follow-up ESA is required to determine if Wetted Pool 2 is hydrologically connected to any watercourses with fish potential/value and confirm if a setback applies. At this time, only preliminary assessment findings are associated with Wetted Pool 2.

Conclusion

The following table identifies all on-site and off-site aquatic resources that were evaluated during the assessment, and would need to be considered prior to development within the Subject Property (Table 1). Table 1 provides a brief summary of the TOL's current GeoSource mapped stream classifications, default DFO setbacks for ALR properties, QEP recommended preliminary classifications, and any relevant RAR setbacks.

Table 1. Preliminary Classifications and Setbacks

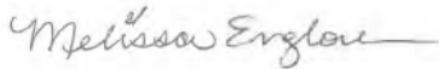
Watercourse Name	GeoSource Classification	Recommended Preliminary Classification	Associated Setback	Notes
Ditch 1	Class B	Unclassified Ditch (requires further investigation)	2 m setback	Current mapping classification identifies Ditch 1 as a Class B ditch. It is recommended that Ditch 1 be considered an unclassified ditch at this time, and requires further investigation to confirm classification and setback, if applicable.
Ditch 2	Class C	Class C	No Setback	Lack of overhanging riparian vegetation observed during assessment, not a watercourse.
Wetted Pool 1	N/A	TBD	TBD	Second assessment required to confirm classification and setback.
Wetted Pool 2	N/A	TBD	TBD	Second assessment required to confirm classification and setback.

PLG recommends one (1) follow-up ESA to be conducted in Spring 2018 (date TBD) to reevaluate and confirm on-site conditions in more favourable assessment conditions (i.e., no snow/frozen conditions). The follow-up ESA will confirm on-site aquatic resource classifications and associated setbacks, including a setback plan, for development purposes.

We trust that the information provided within this report is sufficient and gives a clear overview of the assessed area of the Subject Property and its development potential with respect to preliminary environmental setback conditions. Should you have any comments or questions regarding this correspondence, please contact the undersigned at (604) 501-1624.

Sincerely,

PACIFIC LAND RESOURCE GROUP INC.



Melissa Englouen, BIT
Junior Biologist



Reviewed by: Kyla Bryant-Milne, RPBio
Biologist

Appendix B – PLG Follow-Up ESA Report (May 17, 2018)

May 17, 2018

Our File: 18-1644

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Attn: s.22

**Re: Follow-Up Environmental Site Assessment
9857 McKinnon Crescent, Langley, BC**

Vancouver Office
Suite 1500 – 701 West Georgia Street
Vancouver, British Columbia
Canada, V7Y1C6

Surrey Office
Suite 212 – 12992 76 Avenue
Surrey, British Columbia
Canada, V3W 2V6

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info@pacificlandgroup.ca

Pacific Land Resource Group Inc. (PLG) is pleased to present this letter summarizing the findings of a follow-up Environmental Site Assessment (ESA) for the property located at 9857 McKinnon Crescent, Langley (Subject Property). This ESA has been prepared as a condition of a Preliminary Layout Approval (PLA) associated with the Township of Langley (TOL) file # 12-05-0014. Following a recommendation outlined in PLG's preliminary ESA report (Appendix A attached), the purpose of this follow-up ESA was to reevaluate and confirm on-site watercourse conditions in more favourable assessment conditions (i.e., no snow/frozen conditions) to determine watercourse classifications.

This report has been prepared in consideration of the TOL's zoning bylaw, the Agricultural Land Reserve (ALR) guidelines (as the property is located in the ALR), best management practices (BMPs), environmental protection policies under the Riparian Area Regulation (RAR) guidelines, and conditions of approval outlined in an agreement from the Ministry of Environment (MOE) and Federal Fisheries and Oceans Canada (DFO), dated June 10, 1996 (DFO Agreement; Appendix B attached). A summary of preliminary and follow-up ESA findings and recommendations have been provided below.

February 2018 – Preliminary ESA

A preliminary ESA was conducted on February 20, 2018 to evaluate the biophysical conditions of two (2) TOL GeoSource mapped watercourses (i.e., Ditches 1 and 2) and two (2) unmapped watercourses (i.e., Wetted Pools 1 and 2) identified during the assessment (Figure 1). A report was prepared by PLG, dated March 2, 2018, (Appendix A attached), with the purpose of providing a current assessment of the watercourse conditions within the Subject Property.

Figure 1. Aerial photo of the Subject Property (red outline), mapped watercourses and approximate location of unmapped watercourses during preliminary ESA.

February 2018 Results

Ditch 1 was a mapped, on-site Class B ditch; however, due to unfavourable site conditions during the assessment, the report recommended that a further assessment be completed by a Qualified Environmental Professional (QEP). The purpose of the follow-up assessment would be to reevaluate conditions to determine whether declassification to a Class C ditch would be appropriate. Ditch 2 was a mapped, off-site Class C ditch that appeared to be man-made, likely for roadside drainage purposes. Ditch 2 was confirmed to be a Class C ditch and thus, no streamside setback was applicable. The assessment revealed an unmapped wetted pool (Wetted Pool 1), which appeared to be a low-lying depression that collected overland flow from areas with higher topography as a result of land alteration.

A second unmapped wet pool (Wetted Pool 2) was observed and appeared to be a large wetted area with pooling water, no defined channelization and did not appear to be flowing off-site. As snow cover and frozen conditions made it difficult to determine the classification and setback requirement, if applicable, for Wetted Pools 1 and 2, a follow-up assessment for Spring 2018 was recommended.

May 2018 – Follow-Up ESA

PLG's Registered Professional Biologist (RPBio) and Biologist in Training (BIT) conducted a follow-up assessment within the Subject Property on May 15, 2018, in order to reevaluate the biophysical conditions of the two (2) unmapped waterbodies and identify any additional unmapped waterbodies within the Subject Property (Figure 2).

Copyright

Figure 2. Aerial photo of the Subject Property (red outline), mapped watercourses and approximate location of unmapped watercourses during follow-up ESA.

May 2018 Results –

Wetted Pool 1 – Results

Wetted Pool 1 was observed during the follow-up ESA and was located within the mid-eastern portion of the Subject Property (Figure 2). Wetted Pool 1 appeared to be an independent wetland (i.e., exhibited 'wetland like' features, lacked hydrologic connectivity, unable to provide fish habitat on or off-site) and is currently not mapped on the TOL's GeoSource mapping. Standing water was observed in Wetted Pool 1 at the time of assessment. The ground around Wetted Pool 1 was heavily saturated and water at this location appeared to drain to

ground (i.e., did not appear to travel off-site). Skunk cabbage (*Lysichiton americanus*) and a variety of hydrophytic vegetation were observed within the saturated area (Photograph 1). Substrate comprised of mud and leaf litter, consistent with adjacent overhanging riparian vegetation. Native riparian vegetation included Western red-cedar (*Thuja plicata*), Red alder (*Alnus rubra*), Black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*), Bracken fern (*Pteridium aquilinum*), Sword fern (*Polystichum munitum*), Horsetail (*Equisetum*) and grasses (*Poaceae*). Non-native riparian vegetation included Himalayan blackberry (*Rubus armeniacus*), ivy (*Hedera* sp.) and holly (*Ilex* sp.). Non-native Himalayan blackberry made up approximately 20% of the riparian vegetation along Wetted Pool 1.



Photograph 1. View looking east at skunk cabbage in Wetted Pool 1 within the Subject Property.

At the time of the assessment, Wetted Pool 1 appeared to lack connectivity and presented like an independent wetland (i.e., not being fed from upstream or downstream watercourses). Due to topographic changes, water collecting in Wetted Pool 1 appeared to be as a result of ground alteration to the north, south and east. Typically, wetlands are subject to a standard 15.0 m setback from high water mark (HWM), as per the DFO Agreement (Appendix B attached); however, due to a lack of connectivity observed during the assessment, construction setbacks may not apply to this particular water feature.

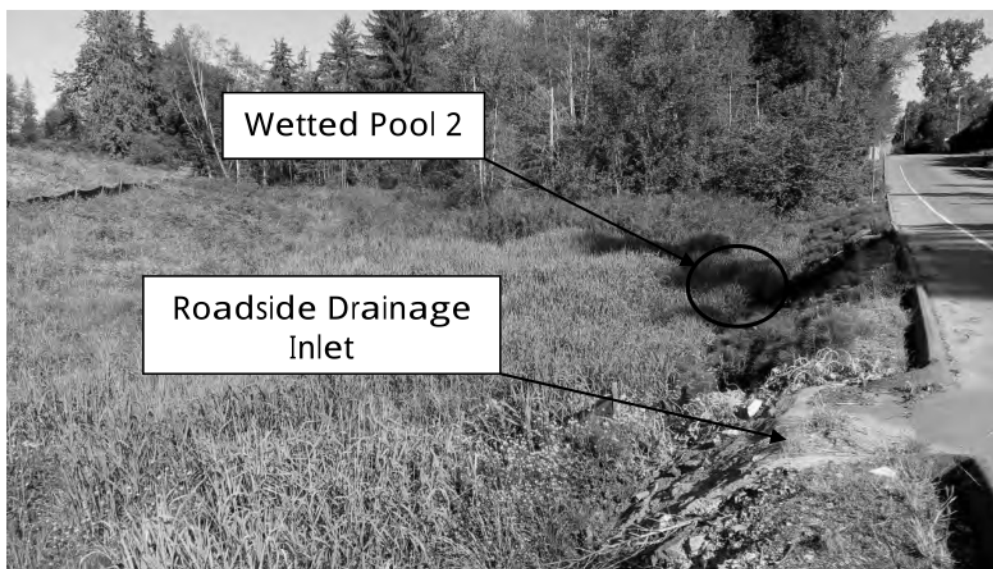
The Provincial *Water Sustainability Act (WSA)* has differing criteria for wetland setbacks and must also be considered prior to assigning a construction setback. A final follow-up ESA is recommended during Summer 2018 (i.e., dry conditions) to further evaluate Wetted Pool 1 and confirm lack of hydrologic connectivity, soil conditions and vegetation present during the driest season. Following the final follow-up ESA, construction setbacks, or lack of, will be confirmed at that time.

Wetted Pool 2 – Results

Wetted Pool 2 was identified during the follow-up ESA within the mid-eastern portion of the Subject Property, south of Wetted Pool 1 (Figure 2). Wetted Pool 2 is currently not mapped on the TOL's GeoSource mapping and appeared to be a small, topographically isolated wetted area with no evidence of an inflow/outflow source (i.e., no hydrological connection to fish habitat), no defined edges, and lack of hydrophytic vegetation (Photograph 2). Wetted Pool 2 has likely formed as a result of stormwater runoff from the adjacent road (McKinnon Crescent) and surrounding higher topography/ground alteration (Photograph 3). Vegetation observed within and adjacent to Wetted Pool 2 included a mixture of native grasses (*Poaceae*), Horsetail (*Equisetum* sp.) and buttercup (*Ranunculus* sp.).



Photograph 2. View looking west at Wetted Pool 2 within the Subject Property.



Photograph 3. View looking northwest at roadside drainage inlet and Wetted Pool 2 (black circle) within the Subject Property.

Based on preliminary ESA results and confirmation during a follow-up field evaluation, Wetted Pool 2 is considered to be a topographically isolated wetted depression with a lack of hydrologic connectivity and no defined aquatic boundary or hydrophytic vegetation that would indicate a wetland classification. As a result, no classification or streamside setback is applicable.

Wetted Pool 3 – Results

Wetted Pool 3 was observed during the follow-up ESA and was located within the mid-central portion of the Subject Property, between Wetted Pools 1 and 2 (Figure 2). Wetted Pool 3 appeared to be an independent wetland (i.e., exhibited 'wetland like' features, lacked hydrologic connectivity, unable to provide nutrients to fish habitat on or off-site) and is currently not mapped on the TOL's GeoSource mapping. Standing water was observed in Wetted Pool 3 at the time of assessment. The ground around Wetted Pool 3 was heavily saturated and water at this location appeared to drain to ground (i.e., did not appear to travel off-site). Skunk cabbage (*Lysichiton americanus*) and a variety of hydrophytic vegetation were observed within the saturated area (Photograph 4). Wetted Pool 3 exhibited characteristics of a wetland and appeared to be hydrologically separated from upstream and downstream water sources. Substrate comprised of mud and leaf litter, consistent with adjacent overhanging riparian vegetation. Native riparian vegetation included Red alder (*Alnus rubra*), Black cottonwood (*Populus trichocarpa*), Salmonberry (*Rubus spectabilis*), Bracken fern (*Pteridium aquilinum*), Sword fern (*Polystichum munitum*), Horsetail (*Equisetum*) and grasses (*Poaceae*). Non-native riparian vegetation included Himalayan blackberry (*Rubus armeniacus*), ivy (*Hedera* sp.) and holly (*Ilex* sp.). Non-native Himalayan blackberry made up approximately 10% of the riparian vegetation along Wetted Pool 3.



Photograph 4. View looking south at skunk cabbage (red circle) in Wetted Pool 3 (blue circle) within the Subject Property.

At the time of the assessment, Wetted Pool 3 appeared to lack connectivity and presented like an independent wetland (i.e., not being fed from upstream or downstream watercourses). Due

to topographic changes, water collecting in Wetted Pool 3 appeared to be as a result of ground alteration to the north, south and east. Typically, wetlands are subject to a standard 15.0 m setback from HWM, as per the DFO Agreement (Appendix B attached); however, due to a lack of connectivity observed during the assessment, construction setbacks may not apply to this particular water feature.

The Provincial *WSA* has differing criteria for wetland setbacks and must also be considered prior to assigning a construction setback. A final follow-up ESA is recommended during Summer 2018 (i.e., dry conditions) to further evaluate Wetted Pool 3 and confirm lack of hydrologic connectivity, soil conditions and vegetation present during the driest season. Following the final follow-up ESA, construction setbacks, or lack of, will be confirmed at that time.

Conclusion

The following table identifies all on-site aquatic resources that were evaluated during the follow-up assessment and would need to be considered prior to development within the Subject Property (Table 1). Table 1 provides a brief summary of the TOL's current GeoSource mapped stream classifications, standard DFO setbacks for ALR properties, QEP recommended follow-up assessment classifications, and any relevant setbacks.

Table 1. Follow-Up Classifications and Setbacks

Watercourse Name	GeoSource Classification	Standard DFO Setback for ALR Properties	Recommended Follow-Up Classification	Associated Setback	Notes
Ditch 1	Class B	-	Unclassified Ditch (requires further investigation)	2 m RAR setback	Current mapping classification identifies Ditch 1 as a Class B ditch. It is recommended that Ditch 1 be considered an unclassified ditch at this time, and requires further investigation to confirm classification and setback, if applicable.
Wetted Pool 1	N/A	15 m setback	Independent Wetland	TBD	Final assessment required to confirm <i>WSA</i> classification and setback, if applicable. Not considered a stream under RAR.
Wetted Pool 2	N/A	N/A	None	N/A	Lack of defined aquatic boundary, no hydrophytic vegetation communities observed during follow-up assessment. Not considered a stream under RAR.
Wetted Pool 3	N/A	15 m setback	Independent Wetland	TBD	Final assessment required to confirm <i>WSA</i> classification and setback, if applicable. Not considered a stream under RAR.

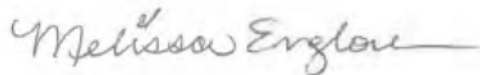
PLG recommends one (1) final follow-up ESA to be conducted in Summer 2018 (date TBD) to reevaluate and confirm on-site conditions in dry assessment conditions. The purpose of this final assessment is to confirm the wetland like conditions of Wetted Pool 1 and 3 to ensure that development setbacks are assigned appropriately. The final follow-up ESA will ensure

compliance with the TOL's zoning bylaw, the ALR guidelines, BMPs, RAR guidelines and DFP Agreement, and confirm on-site aquatic resource classifications. A plan will be prepared as part of the final assessment, identifying applicable construction setbacks (where appropriate) for development purposes.

We trust that the information provided within this report is sufficient and gives a clear overview of the assessed area of the Subject Property and recommendations with respect to current environmental site conditions. Should you have any comments or questions regarding this correspondence, please contact the undersigned at (604) 501-1624.

Sincerely,

PACIFIC LAND RESOURCE GROUP INC.



Melissa Englouen, BIT
Junior Biologist



Reviewed by: Kyla Bryant-Milne, RPBio
Biologist

ATTACHMENTS:

Appendix A: PLG Preliminary ESA Report (March 2, 2018)

Appendix B: DFO Agreement Letter (June 10, 1996)

Appendix C – DFO Agreement Letter (June 10, 1996)



Our File: 72000-00/96.03.008

June 10, 1996

Corporation of the Township of Langley
4914 221 Street
LANGLEY BC V3A 3Z8

Attention:
Director of Community Development

Dear Sir:

Re: Conditions of Approval by BC Environment, Fish and Wildlife Management and Federal Fisheries and Oceans for Subdivision of Rural Properties

BC Environment, Fish and Wildlife Management and Federal Fisheries and Oceans have no objections to the subdivision of rural properties, subject to the following conditions:

1. For low density/single family developments:

With regard to any ravines on the property, the entire ravine plus fifteen (15.0) horizontal metres inland from the top of the bank is to be left in a totally undisturbed, naturally vegetated state. With regard to any watercourses/wetlands on the property which are not located within ravines, there is to be no disturbance whatsoever within fifteen (15.0) horizontal metres from the high water mark of the stream/wetland. Please note that if the development is proposed within the 1 in 10 year floodplain, the fifteen (15.0) metre setback must be measured from the 1 in 10 year boundary line rather than from the high water mark of the stream/wetland. Such areas are also to be left in a totally undisturbed, naturally vegetated state. No dumping, landfill or vegetation removal shall be permitted.

For high density/multi-family developments:

With regard to any ravines on the property, the entire ravine plus thirty (30.0) horizontal metres inland from the top of the bank is to be left in a totally undisturbed, naturally vegetated state. With regard to any watercourses/wetlands on the property which are not located within ravines, there is to be no disturbance whatsoever within

thirty (30.0) horizontal metres from the high water mark of the stream/wetland. Please note that if the development is proposed within the 1 in 10 year floodplain, the thirty (30.0) metre setback must be measured from the 1 in 10 year boundary line rather than from the high water mark of the stream/wetland. Such areas are also to be left in a totally undisturbed, naturally vegetated state. No dumping, landfill or vegetation removal shall be permitted.

The above specified setbacks apply to all streams, wetlands and ditches which are fish habitat as defined by the Federal Fisheries Act, i.e. either have fish populations present, or supply food, water and nutrients to fish populations located downstream. If there is any questions as to whether a watercourse or ditch is fish habitat, please contact BC Environment, Fish and Wildlife Management for advice.

2. The specified leavestrip areas noted in comment one are to be protected by a MoELP restrictive covenant and registered against the title of the property affected as a priority agreement according to our standard covenant format.
3. A permanent fence must be constructed at the leavestrip boundary between the development area and the leavestrip area prior to the start of site development.
4. The fence must be constructed of livestock fencing with treated 4-5 inch posts and be a minimum of 1.2 metres in height. The fence must be posted with small metal signs indicating that the area is protected by a section 215 covenant for preservation of sensitive fish and wildlife habitat. Further information regarding sign requirements is attached. Pedestrian gate access is permitted provided the gateway is no more than 60 cm (24 inches) in width. Livestock and pets are not to be penned within the area protected by a restrictive covenant.
5. All work must be undertaken and completed in such a manner as to prevent the release of silt, sediment or sediment-laden water, raw concrete or concrete leachate, or any other deleterious substances into any ditch, watercourse, ravine or storm sewer system.
6. The standards for sediment and erosion control outlined in the jointly published BC Environment/Fisheries and Oceans Canada "Land Development Guidelines For the Protection of Aquatic Habitat" must be adhered to.
7. Construction and excavation wastes, overburden, soil, or other substances deleterious to aquatic life must be disposed of or placed in such a manner so as to prevent their entry into any watercourse, ravine, floodplain or storm sewer system.
8. Section 35 of the Wildlife Act provides for protection of birds and their eggs and their nests during annual nesting activities. Land clearing must not be undertaken during the period of April 1 through July 31 to avoid possible contravention of the Act.

9. Any proposal to work in or adjacent to any watercourse must be approved by BC Environment Planning and Assessment and the Department of Fisheries and Oceans Canada. In this regard, plans (4 copies) of the proposed work must be forwarded to Brian Clark, Planning and Assessment, BC Environment for distribution to the reviewing agencies. Work is not to proceed until written approval from Planning and Assessment is received.
10. **Please note that the above comments only apply to subdivision of rural properties, not to any rezoning proposals on rural property.**


Unless otherwise specified, this letter shall remain valid in perpetuity for the above named areas. The fisheries agencies will notify you if we require a change of approval conditions. Such changes would be due to legislation, regulation, or guideline changes within DFO or MoELP.

Developments of the type specified do not need to be referred to the fisheries agencies for review and approval provided the proposal adheres to the above conditions of approval. However, if there are any questions please contact our offices. It would be appreciated if you would refer to our file number when making enquiries regarding proposals of this type.

Sincerely,



Brian Clark, R.P.Bio.
Manager, Planning & Assessment
Lower Mainland Region
BC Environment



Bruce Reid, R.P.Bio
Head, Land Use Section
Habitat Management Unit
Fraser River Division
Department of Fisheries and Oceans

Appendix B – Email Correspondence from Rod Shead (September 10, 2018)

Melissa Englouen

From: Kyla Milne
Sent: Monday, September 10, 2018 10:44 AM
To: Rod Shead
Cc: Laura Jones; Melissa Englouen
Subject: Re: 18-1644 9857 McKinnon Crescent Langley

Good morning Rod,
Thank you for taking the time
To review our file.

I'll be in touch if we have any questions.
Kyla

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On Mon, Sep 10, 2018 at 10:38 AM -0700, "Rod Shead" <rshead@tol.ca> wrote:

Hi Kyla,

Staff have reviewed the information provided and agree with your conclusions that only Ditch 1 requires protection in accordance with the provincial RAR (i.e. 2m SPEA from top-of-bank). Other wetted/drainage features on the property (Ditch 2, Wetted Pool 1, Wetted Pool 2 and Wetted Pool 3) do not require protective setbacks.

With respect to Ditch 1, the Township will require the RAR determined SPEA width of 2 metres to be protected in a Restrictive Covenant (RC) as part of subdivision. The RC is more to protect the drainage functions associated with the channel. Accordingly, the ditch TOB will need to be surveyed so a plan can be prepared for the RC document.

Call if you have any questions.

Rod Shead, RPBio, PAg
Development Planning
Environmental Coordinator II
Township of Langley 20338-65 Avenue, Langley, BC V2Y 3J1
604.533.6090 ext. 3436 | rshead@tol.ca | www.tol.ca

From: Kyla Milne <kyla@pacificlandgroup.ca>
Sent: Tuesday, August 28, 2018 8:51 PM
To: Rod Shead <rshead@tol.ca>
Cc: Laura Jones <Laura@pacificlandgroup.ca>; Melissa Englouen <Melissa@pacificlandgroup.ca>
Subject: Re: 18-1644 9857 McKinnon Crescent Langley

Good afternoon Rod,

Earlier this summer we discussed one of our files at 9857 McKinnon Crescent. You directed us to a 1996 MOE/DFO Agreement for properties located in the ALR.

We completed three seasonal assessments on the property to confirm the development setbacks associated with several water features located on the property. Our Planning Department will be submitting the attached report to your Planning Department as part of a PLA and to the Building department as part of a BP application, for the Subject Property. We wanted you to have a copy in your files in case any of your colleagues have any questions.

Please let us know if you have any questions.

I can be reached anytime at 604-996-7666.

Thanks

Kyla

Kyla Bryant-Milne. RP.Bio, P.Biol, B.Sc
Environmental Specialist



■ Surrey | 212 – 12992 76 Avenue, Surrey, British Columbia, V3W 2V6
□ Vancouver | 1500 – 701 West Georgia Street, Vancouver, British Columbia, V7Y 1C6

T: 604 501 1624 ext 234 | kyla@pacificlandgroup.ca | pacificlandgroup.ca

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December 20, 2018

File: Cloverdale 20D\108487 9857 McKinnon Crescent

REGISTERED MAIL

s.22

s.22
Dear

Re: ADVISORY-Unauthorized Works in and about a stream at 9857 McKinnon Crescent, Langley

On November 16, 2018 the Ministry of Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD) was notified that changes in and about a stream on the above mentioned property (the "property") occurred without authorization under the *Water Sustainability Act*.

On November 16, 2018, Michael Lawrence, a FLNRORD Natural Resource Officer, conducted a site inspection and the following was observed:

- A large portion of the land on the property has been cleared. The southern portion of the property has been entirely cleared (excluding the area around the house) and clearing of the northern portion of the property is ongoing (as of November 16, 2018).
- A watercourse was observed on the eastern side of the property, draining under McKinnon Crescent
- A watercourse was observed along the northern part of the property
- A watercourse was observed running NW to SE along the southern edge of the property
- A watercourse was identified and flagged by the QEP of 22256 100 Avenue along the northern property boundary
- The clearing of land had encroached into the flagged area of the northern boundary and debris lay in the aquatic and riparian area of the flagging
- A machine bridge was created with approximately 15 felled trees, with evidence of machine tracks on either side
- The northern portion of the property had a mix of vegetation and the soil was saturated and appeared to be a wetland

A second site inspection was conducted by Michael Lawrence on November 27, 2018 and the following was observed:

Ministry of Forests, Lands,
Natural Resource Operations and
Rural Development

Water Authorizations
South Coast Natural Resource Region
Website: www.gov.bc.ca/water

Suite 200, 10428 - 153 St
Surrey BC V3R 1E1
Phone: (604) 586-4400
Fax: (604) 586-4434

- Turbid conditions were observed in neighbours surface water ponds located on 22256 100 Avenue and 9839 McKinnon Crescent
- Additional clearing was observed in the potential wetland area
- Surface water from the NW corner of the property was flowing onto neighbouring properties to the west and carrying sediment laden water

Historical evidence suggests that this property was once an area of wetland connected to a stream network based on the following:

- Provincial stream data indicating a mapped stream connected to ponds on the eastern side of McKinnon Crescent, crossing under the road and through the property and to a small pond on the neighbour's property
- Historical satellite imagery indicating the ponds and wetted area on the property
- Land Title Covenant (Doc#Z127433) dated June 9, 1986 describing setback from a Slough on the property
- Riparian Area Regulation Assessment report conducted by Enkon Environmental (July, 2017) identified a portion of the property as a wetland

On December 19, 2018, a site visit was conducted by FLNRORD Water Officers, Emma Webster and Sandra Jensen, and Habitat Officer Kendra Morgan, and the following was observed:

- The majority of the northern end of the property had been cleared
- Presence of vegetation indicative of wetlands, including hart hack, bull rushes, tall rush and skunk cabbage
- Topographic features and vegetation signifying natural channels in several areas of the property
- A natural watercourse with clearly defined features was observed on the northern property boundary and appeared to originate from a natural watercourse from 22346 100 Avenue
- The natural watercourse on the northern boundary flowed west to the ponding area at the NW corner of the property and was connected to the watercourses on the neighbours property
- A natural watercourse and wetted features were observed around the culvert area along McKinnon Crescent. Water was flowing from this wetted area through the culvert to the ponds on the east
- Woody debris was present in the aquatic and riparian areas of the watercourses

Based on the above information, the property is therefore classified as a stream under the *Water Sustainability Act*.

Under Section 106(2)(b)(ii) of the *Water Sustainability Act*, it is a general offense to make changes in and about a stream without lawful authority.


Consequently, you are advised to undertake the following actions:

1. Continue to monitor Erosion and Sediment Control (ESC) measures implemented by McTavish Resource and Managements Consultants Ltd.
2. Hire a Qualified Environmental Professional (QEP) to immediately implement additional ESC measures
 - a) in the area around the natural watercourse on the northern boundary that continues to the northwest corner
 - b) all the wetted areas that are connected to the culvert
 - c) remove any debris within the aquatic and riparian areas that have been disturbed.
3. Immediately hire a QEP to prepare a Restoration Plan to restore the wetlands back to previous conditions, including connectivity.
4. Provide the Stream Restoration Plan mentioned in clause 2 above, to the undersigned by January 20, 2019 for review and written approval by the Water Manager.

Note: no works other than the Erosion and Sediment Control measures specified in 1 and 2 above are authorized to proceed until written confirmation from the Water Manager is provided to the Landowner.

If you have any questions in this regard, please do not hesitate to contact Emma Webster
FLNRORD Surface Water Protection Officer, via email at Emma.Webster@gov.bc.ca.

Regards,



Emma Webster, B.Sc., P.Geo
Surface Water Protection Officer

cc: Michael Lawrence, FLNRORD Natural Resource Officer
Kendra Morgan, FLNRORD Aquatic Biologist
Rod Shead, Township of Langley Environmental Coordinator
Melissa Englouen, Pacific Land Group Junior Biologist