Molony, Anne TRAN:EX

From: Molony, Anne TRAN:EX
Sent: Wednesday, May 7, 2014 2:58 PM
To: 'Bill Wheeldon'
Subject: RE: 432 Powerhouse Road - RAR Assessment Draft/for your info

Hi Bill,

Thanks for a copy of the report, however, it does not specifically address the proposed driveway access nor does it speak to how the ditch is going to be crossed – suitable structure and mitigation factors. The report goes in to detail regarding the fence and footbridge but has no mention of the practices required to cross Timberlane Ditch. I require:

- A design plan showing the layout of the proposed extension/driveway
- An assessment from a qualified professional regarding the appropriate size of culvert and sediment mitigation factors

You cannot proceed with the extension of Timberland Road until these conditions have been met and approved.

Please contact me if you have any questions. The permit expires on May 30, 2014 and may require an extension if works are not completed by this date.

Sincerely,
Anne

Anne Molony
District Development Technician
Courtenay Area Office

From: Bill Wheeldon [mailto:s.22
Sent: Tuesday, May 6, 2014 5:37 PM
To: Molony, Anne TRAN:EX
Subject: Fwd: 432 Powerhouse Road - RAR Assessment Draft/for your info

Sent from my iPhone

Begin forwarded message:

> **From:** ROBERT STEEN <s.22 >
> **Date:** May 1, 2014 at 9:55:12 AM PDT
> **To:** Bill Wheeldon <s.22 >
> **Subject: Fwd: 432 Powerhouse Road - RAR Assessment Draft/for your info**
>
> Hi Bill Here is Dusty's report
>
> ----- Forwarded Message -----
> From: "Dusty Silvester" <s.22
> To: s.22
> Cc: s.22 "R Wong" <s.22 >
> Sent: Thursday, April 17, 2014 5:49:19 PM

Subject: 432 Powerhouse Road - RAR Assessment Draft

Bill,

Please find attached a draft copy of our RAR assessment report for both Lots A & 7. As directed, we have focused our attention on proposed fence and bridge installations. You will find enclosed recommendations to mitigate potential harm resulting from these project components as well as the calculated SPEA setback of "no-disturbance" around the creek. I anticipate this will catalyze further discussion as to how best proceed with your plans while acknowledging and abiding by best management practices given the sensitive nature of and scrutiny applied to the Morrison Creek riparian area.

Please note that in order to formally submit this assessment we will upload it to the online notification system where it will be automatically disseminated to the appropriate authorities – however, being that the lots are within the City and RD respectively: two separate uploads will be required to reach those respective municipalities. In support of future submission I will require the PID for Lot 7 (City of Courtenay) as it is not included in the provided site plan.

I look forward to your questions and comments. s.22
s.22 Tuesday of next week.

With regard,

Dusty Silvester, R.B.Tech.

Final_CurrentENV_blue

Unit H - 244 4th St.

Courtenay, BC

V9N 1G6

Riparian Areas Regulation: Assessment Report

Please refer to submission instructions and assessment report guidelines when completing this report.

Date: April 17, 2014

I. Primary QEP Information

First Name	Rupert	Middle Name		
Last Name	Wong			
Designation	R.P. Bio	Company	Current Environmental	
Registration #	705	Email	s.22	
Address	244 4th St. - Unit H			
City	Courtenay	Postal/Zip	V9N 1G6	Phone # 250.871.1944
Prov/state	BC	Country	Canada	

II. Secondary QEP Information (use **Form 2** for other QEPs)

First Name		Middle Name	
Last Name			
Designation		Company:	
Registration#		Email	
Address			
City		Postal/Zip	Phone #
Prov/state		Country	

III. Developer Information

First Name	William	Middle Name	
Last Name	Steen		
Company	n/a		
Phone #	250.338.5558	Email:	s.22
Address	432 Powerhouse Road		
City	Courtenay	Postal/Zip:	V9N 9L1
Prov/state	BC	Country	Canada

IV. Development Information

Development Type	Landscaping, including fencing, and bridge crossing		
Area of Development (ha)	0.02	Riparian Length (m)	200 m
Lot Area (ha)	1.70	Nature of Development	New
Proposed Start Date	Feb 01 2011	Proposed End Date	May 31 2011

V. Location of Proposed Development

Street Address	Lot A Plan 25007 DstLot 155 LndDst 15		
Local Government	Comox Valley Regional District	PID	002-849-402
Street Address	Lot 7 Plan 1241 DstLot 155 Comox District		
Local Government	City of Courtenay	PID	
Stream Name	Morrison Creek	Region	Vancouver Island
Stream/River Type	River	DFO Area	South Coast
Watershed Code	920-553200-94200-04800		
Coordinates	10U 353881 m E 5504791 m N		

Table of Contents for Assessment Report

Page Number

Section 1. Description of Fisheries Resources Values and a Description of the Development proposal

Description of Fisheries Resource Values

Morrison Creek is a highly valued and regionally significant 3rd order stream located on the east coast of Vancouver Island in Courtenay, BC. Morrison Creek flows for approximately 7.6 km in a northeasterly direction and drains a sub-basin area of approximately 890 ha. An estimated 60% (540 ha) of Morrison Creek watershed is located in headwater reaches characterized by 90 ha of wetland complexes. Headwater reaches provide cool, clean year-round water supply with relatively constant temperatures and flow that is ideally suited for fish production. Riparian habitat in the forested wetlands of the headwaters and the upper and middle watershed remain relatively intact and unfragmented compared to the lower portion of the watershed, which is undergoing increasing urbanization.

Morrison Creek is a major tributary to the Puntledge River and a highly productive anadromous fish stream supporting four Pacific salmon species (*Oncorhynchus gorbuscha*, *O. keta*, *O. tshawytscha*, and *O. kisutch*) and three trout species (*Salmo gairdneri*, *S. clarki clarki*, and *S. salar*). Anadromous fish distribution includes the entire length of Morrison Creek with some unconfirmed utilization in the uppermost headwater reaches. No fish were observed during the assessment process in the stream reach adjacent to the subject property.

The local streamkeepers group, Morrison Creek Streamkeepers (MCS), have data to support the existing FISS list, and are also an active steward of the SARA listed Morrison Creek Lamprey (*Lampetra richardsoni var. marifuga*)[1] and are presently collecting data to help characterize the habitat requirements of this species, which is endemic to Morrison Creek and not well understood. The Morrison Creek Lamprey was designated as Endangered by COSEWIC in 2000 and is protected under the federal *Species at Risk Act* (SARA)[2]. In general, it is known that Morrison Creek Lamprey require cool, flowing water over small gravel substrate for spawning and share habitat similar to what is required for spawning Coho. After emergence, juvenile lamprey burrow into soft sediments where they live for 3-7 years as filter feeding ammocete larvae before metamorphosing into free-swimming adults.

The stand structure of the existing riparian vegetation is characterized by a mixed young forest, which provides 70-90% canopy closure over the stream (Photos 1-2). Occasional mature trees occur in the riparian zone dominated by Douglas fir (*Pseudotsuga menziesii*), and grand fir (*Abies grandis*), with subdominant red cedar (*Thuja plicata*), hemlock (*Tsuga heterophylla*), red alder (*Alnus rubra*), and maple (*Acer macrophyllum*). While there is active self thinning of the young forest stand, recruitment of functional LWD to the Morrison Creek mainstem is limited. Other criteria for riparian condition that are functioning favorably include stream shading, and bank/channel stability provided by rooted vegetation. Shrub and herb species include salal (*Gaultheria shallon*), dull Oregon grape (*Mahonia nervosa*), swordfern (*Polystichum munitum*), salmonberry (*Rubus spectabilis*), nine bark (*Physocarpus capitatus*), and skunk cabbage (*Lysichiton americanus*).

The subject property is bounded by semi-forested private lands on all sides with access provided

[1] Morrison Creek Streamkeepers. Life history and background info on the federally endangered Morrison Creek lamprey. Retrieved on April 1 2014 from <http://www.morrisoncreek.org/mclamprey.php>.
[2] Species at Risk Public Registry. Species Profile. Morrison Creek Lamprey. Retrieved on April 1 2014 from <http://www.sararegistry.gc.ca/species/speciesDetails_e.cfm?sid=593>

by Timberlane Road to the east and Powerhouse Road to the west (Figure 2). The Morrison Creek mainstem flows year-round for an estimated 200 m through the northwest corner of Lot 7 and adjacent to the northern boundary of Lot A (Photo 1; Figure 2). There is a roadside ditch along Timberlane Road that collects stormwater flows from properties along the south side of the road including Lot A (Photo 3). The ditch flows northwest to connect downstream with Morrison Creek near the northern corner of Lot A (Figure 2). Near the confluence of the Timberlane Road ditch and Morrison Creek, there is a 1 m drop in the ditch which acts as an obstruction to fish passage (Photo 4). Although no fish may enter the Timberlane Road ditch, it does contribute flows and nutrients to downstream waters.

The average bankfull width of the Morrison Creek channel is 7.44 m with an average gradient of 4 %. The channel morphology is riffle-pool habitat with bed materials dominated by cobble and gravel substrates with some boulders and isolated accumulations of fines in areas subject to lower velocity flows (Photos 6). In general, substrates observed within the subject reach appear to be suitable to support salmonid spawning habitat. Average instream cover for fish was approximately 10% and is provided primarily by overhanging vegetation with other features in limited quantity that include LWD, boulders, and cutbanks. No triggers for slope stability were found on the subject property during the field assessment.

Description of the Development Proposal

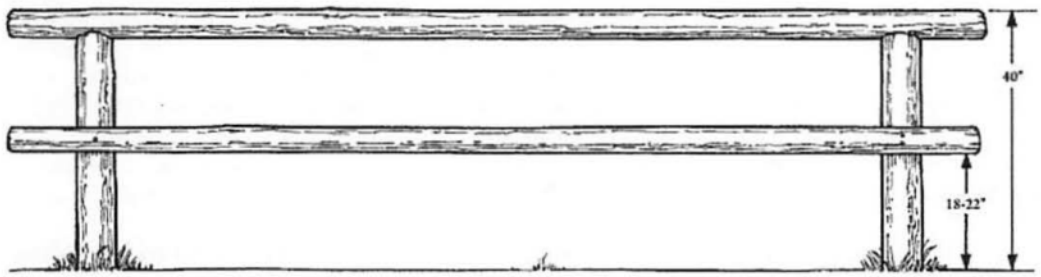
At the time of assessment (April 3 2014) construction on Lot A (in the Comox Valley Regional District) had progressed to pouring a foundation for a residential dwelling (Photo 4), and framing of a carriage house. This report was not solicited in response to the above works and is limited to the proposed installation of a fence with hand dug cast-in-place concrete post anchors. The alignment of the fence will be parallel to the future driveway off of Timberlane Road and may in part delineate a portion of the 22.3 m SPEA (Figure 2). During the site visit it was observed that sediment laden water was flowing from the construction footprint into the Timberlane Road ditch and from there in to Morrison Creek (Photo 3-4).

Proposed construction on Lot 7 (in the City of Courtenay) may also include a clear span bridge to provide pedestrian access to the north (left bank) of Morrison Creek, and a fence installation to delineate the northern property boundary which also resides on the north side of Morrison Creek. This fence would be dug by hand and may employ concrete anchors. Existing riparian vegetation along Morrison Creek provides an important animal migration corridor for species such as black-tailed deer and numerous avians including barred owls. It is of upmost importance that any fence structure installed near the creek does not impede animal migration trough this corridor.

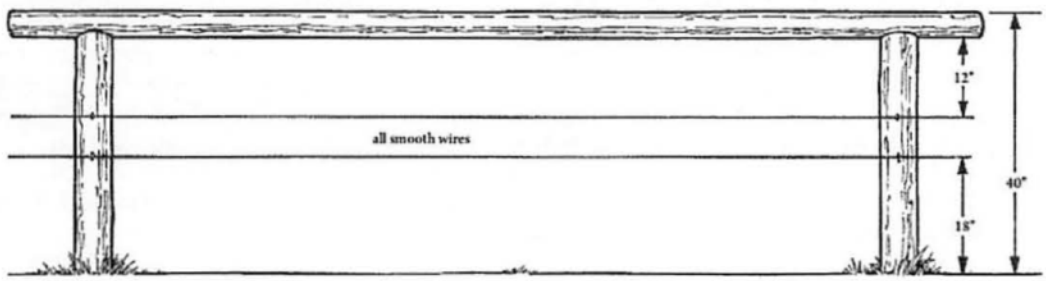
When designing the type and location of any fences near riparian areas planning should include consideration for maintaining daily and seasonal wildlife movement. Patterns can be partially identified by locating existing wildlife access trails. Property boundary fences must be designed so wildlife can easily cross and may include gaps where no panels exist. In addition, the property's topography must be considered where wildlife may be funneled in a particular area and fence heights that are more difficult to cross when placed across a steep slope or next to a depression. As the gradient of a slope increases so does the height an animal must jump to clear an obstruction. No fencing should be placed within flood plain areas or to the edge of steep slopes/embankments.

Examples of wildlife passage friendly fences are provided below. The ideal fence is very visible and allows wild animals to easily jump over or pass under. It is recommended that a short (maximum 1 m) split rail cedar fence be considered or if wire fencing must be used that it have a 0.6 m gap under it and include open sections where wildlife trails exist and be at least 6 m from hwm of the creek. Increased visibility using a toprail or smooth, coloured poly-wire can help ungulates and birds avoid or navigate fences.

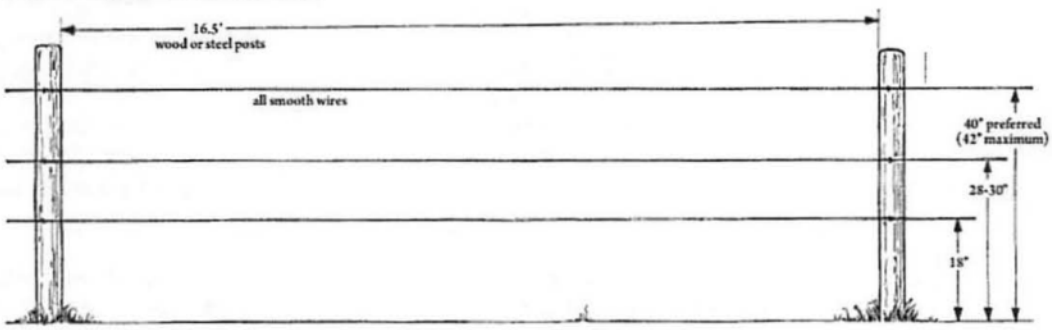
POST AND RAIL FENCE



POST AND WIRE FENCE



3-STRAND SMOOTH WIRE FENCE



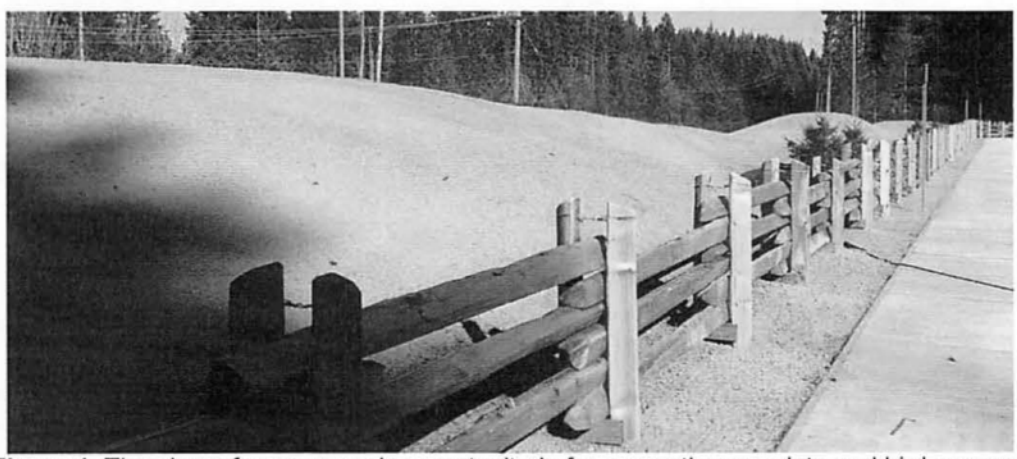


Figure 1. The above fence examples meet criteria for supporting ungulate and bird passage including high-visibilty, low height, and under passage. Gaps in fence panels are also recommended where animals are likely to migrate.

A clear-span bridge installation across Morrison Creek is proposed so that the landowner may gain access to a portion of the property on the north side of the creek. The northern portion of the property falls almost entirely within the calculated 22.3 m SPEA and as such should be maintained in a natural state. According to the RAR Implementation Guidebook (2006) "The vegetation in the SPEA provides the natural features, functions and conditions that support fish life processes. In this regard, the vegetation in the SPEA must be left in a natural, undisturbed state and activities that have the potential to damage it are not permitted in the SPEA."

It should be noted that activities not permitted in the SPEA include formal trail building and landscaping to create lawns or formal gardens. However, passive activities such as hiking, nature viewing, and access to water are considered compatible with protection of the SPEA. The installation of a pedestrian bridge to gain access to the north side of the property would likely have some impact on the SPEA by virtue of the machinery required to install the bridge (i.e. a hoe to excavate and prepare abutment pads and a crane to sling in abutments and the bridge deck) that would need to be repaired after installation. **Any modification of the SPEA related to the installation of a bridge structure must result in a net benefit to the SPEA and will require invasive plant and lawn removal and replacement with native vegetation plantings.** As trail construction is prohibited in the SPEA any access points to and from the pedestrian bridge must be made of high permeability biodegradable material such as bark mulch, other harder surfaces such as crush, pit-run, blue-chip, or comparable materials are not acceptable.

Bridge building activity necessitates the creation and submission of a Section 9 Notification under the Provincial *Water Act* at least 45 days prior to commencing the proposed change. In addition, a qualified environmental professional (QEP) should be hired to provide guidance on mitigating potentially harmful effects to the environment leading up to and during bridge installation activity as well as to provide recommendations for enhancing the SPEA during any invasive species removal or native vegetation planting activity. According to DFO review criteria, clear-span bridges do not require review or notification if there will be "no earth fill below the high water mark and no complete obstruction to fish passage during timing windows".

Potential impacts to aquatic habitats during bridge installation include the release of sediment or deleterious substances to downstream habitats and the loss or degradation of established riparian vegetation. In addition to consultation with a QEP, these potential impacts will be managed through the implementation of a variety of Best Management Practices listed in Section 4. The following Table 1 summarizes the recommendations made in this section to avoid/mitigate potential harm

Table 1. Recommendations and mitigation measures to avoid harm during proposed project works at 432 Powerhouse Road.

Work Component	Potential Harm	Mitigation/Recommendation
Fence design	Disrupt animal migration and/or cause entrapment	Design the fence according to recommendations for animal passage (Figure1): - Leave gaps in fence panels where existing animal migration routes are evident; - Maximum height 1 m (40"); - Provide sections that meet "under passage" requirement of 0.6 m (18"); - Fence should be easily visible including any wire used should be a bright colour. - No part of the fence will be located within the creek floodplain and should be setback 6 m from the HWM of the creek as determined by a QEP.
Fence construction	Release of deleterious substances from concrete leachate and erosion and sediment control related to install of fence and anchors.	- Follow BMPs for control of Concrete Leachate and Erosion and Sediment Control provided in Section 4.
Bridge installation	Erosion and sediment control and control of fuels and hazardous substances during bridge abutment excavation and installation.	- Consultation with QEP and other relevant professionals with respect to location and manner of installing bridge abutments. Location must be outside of HWM of the channel and no fill or other components should encroach within the channel. The site selected for install must be stable and cannot be undermined by hydraulic activity or other natural processes. - During installation a QEP should recommend site specific ESC measures that may include deployment of silt curtains, silt fencing, tarps, nets, sorbent booms, and other tools to reduce risk of harm to the aquatic environment. - High permeability biodegradable materials such as bark mulch may be used to provide access points to and from the bridge. Crush, pit-run, blue-chip, or comparable materials are not acceptable.
SPEA enhancement	Work that may disturb the SPEA (i.e. bridge installation, fences) should be countered with enhancement activity	- Any existing riparian vegetation disturbed by bridge or fence installation activity within the SPEA must be replaced with native species following work. - There is a high concentration of *Daphne laureola* within the SPEA that should be removed and replaced with a suitable assemblage of native species.
Site restoration	Deterioration of terrestrial or aquatic habitat	- Removal all waste materials from site and dispose of at appropriate facilities. - Ensure that all exposed soils within the SPEA have been re-vegetated with appropriate native vegetation to increase soil stability, prevent erosion, and reduce the probability of the establishment of invasive species. - Any overburden or removed vegetation not used in site restoration should be removed from the area.

Section 2. Results of Detailed Riparian Assessment

Date: April 17, 2014

Description of Water bodies involved (number, type): 1, Stream – 1, Ditch

Stream	1
Wetland	/
Lake	/
Ditch	1
Number of reaches	1
Reach #	1

Channel width and slope and Channel Type (use only if water body is a stream or a ditch, and only provide widths if a ditch)

	Channel Width(m)		Gradient (%)
downstream	9.5		-
	6.3		-
	6.5		-
	~~11.7~~	high	-
	7.2		3.0
	6.9		-
	8.0		-
	6.6		5.0
	~~5.5~~	low	-
	5.9		-
upstream	10.1		-
Ttl: - high/low	67.0		
mean	7.44		

I, Rupert Wong, hereby certify that:
a) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
b) I am qualified to carry out this part of the assessment of the development proposal made by the developer William Steen;
c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

	R/P	C/P	S/P
Channel Type	X		

Site Potential Vegetation Type (SPVT)

	Yes	No	
SPVT Polygons		X	Tick yes only if multiple polygons, if No then fill in one set of SPVT data boxes

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d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Polygon No: 1

Method employed if other than TR

	LC	SH	TR
SPVT Type			X

Zone of Sensitivity (ZOS) and resultant SPEA

Segment No:	1	South (right) bank						
LWD, Bank and Channel Stability ZOS (m)	22.3 m							
Litter fall and insect drop ZOS (m)	15.0m							
Shade ZOS (m) max	22.3 m	South bank	Yes	X	No			
Ditch	Justification description for classifying as a ditch (manmade, no significant headwaters or springs, seasonal flow)				n/a			
Ditch Fish Bearing	Yes		No		If non-fish bearing insert no fish bearing status report			
SPEA maximum	**22.3 m**							

Segment No:	2	North (right) bank					
LWD, Bank and Channel Stability ZOS (m)	22.3						
Litter fall and insect drop ZOS (m)	15.0						
Shade ZOS (m) max	n/a	South bank	Yes		No	X	
SPEA maximum	**22.3**						

Segment No:	3	Ditch (no fish)		
LWD, Bank and Channel Stability ZOS (m)	n/a			
Litter fall and insect drop ZOS (m)	2.0			
Shade ZOS (m) max	2.0	South bank	Yes	n/a
SPEA maximum	**2.0**	(For ditch use table3-7)		

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c) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and
d) In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation.

Comments

A prescribed SPEA width of 22.3 m was calculated for the riparian assessment areas of Segments #1-2 based on the calculated zones of sensitivity (ZOS) for the various features, functions and conditions (FFC).

Zones of sensitivity determined for relevant features, functions and conditions of the riparian assessment area:

CHANNEL TYPE	CHANNEL WIDTH	SPVT	LWD	LITTER FALL	SHADE
RP	**7.44 m**	**TR**	**22.3 m**	**15.0 m**	**0-22.3 m**

The following formulas and data were used to calculate a 22.3 m SPEA width for both sides of Segments #1-2 on the subject property:

Channel Morphology:
Average bank full width (bfw) = 7.2 m
Average gradient = 4.0 %

Channel Type (based on avg. gradient and bfw) = **Riffle-pool**

Zones of Sensitivity:

1. LWD, Channel and bank stability (SPVT TR) = 3 x avg. bfw = 22.3 m
2. Litter Fall = 15.0 m
3. Shade = Shade ZOS 3 x avg. bfw = 22.3 m to the south
4. Food and Nutrients (SPVT TR) = 3 x avg. bfw = 22.3 m

Overall SPEA for Segments #1-2 = 22.3 m

A prescribed SPEA width of 2.0 m was calculated for the riparian assessment areas of Segment #3 (Ditch) based on the calculated zones of sensitivity (ZOS) for the various features, functions and conditions (FFC) as presented in Table 3-7 of the RAR Assessment Methods. Segment #3 is a constructed Ditch with no headwaters, and no fish access based on the presence of a 1 m vertical drop at the confluence with Morrison Creek.

Zones of sensitivity determined for relevant features, functions and conditions of the riparian assessment area:

CHANNEL TYPE	CHANNEL WIDTH	SPVT	LWD	LITTER FALL	SHADE
Ditch	**2.0 m**	**TR**	**n/a**	**2.0 m**	**2.0 m**

Overall SPEA for Segment #3 = 2.0 m

Section 3. – Figure 2. Site Plan

Lot 7 Powerhouse Road &
Lot A Timberlane Road
-
RAR Analysis

Legend

- Stream
- Stream Shade ZOS (0 - 22.3 m)
- Stream Litter ZOS (15 m)
- Stream SPEA (22.3 m) & LWD ZOS
- Ditch
- Ditch SPEA (2 m)
- Proposed Fence
- Proposed Bridge
- Property Boundary
- Riparian Assessment Area (30 m)
- Wetland

N

0 15 30 60
Meters

current ENVIRONMENTAL

Author: D. Silvester
Date: April 2014
Datum: NAD83
Projection: UTM
Orthophoto: 2012

All line work approximate.
For illustration purposes only.
Not for use or reproduction
without consent of author.

EDAS
ENT'D

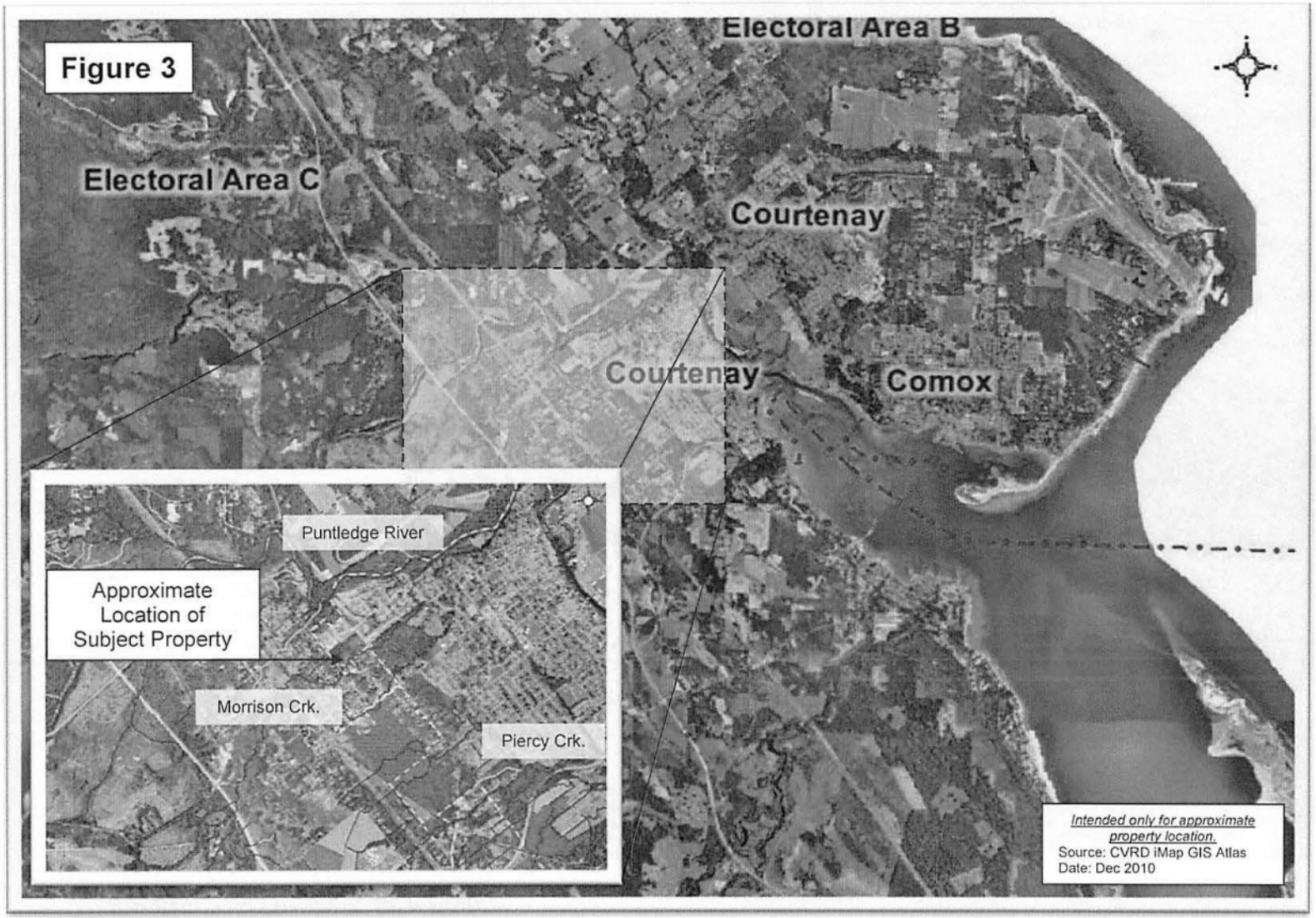
Figure 3
Electoral Area B
Electoral Area C
Courtenay
Courtenay
Comox
Puntledge River
Approximate Location of Subject Property
Morrison Crk.
Piercy Crk.
Intended only for approximate property location.
Source: CVRD iMap GIS Atlas
Date: Dec 2010

Section 4. Measures to Protect and Maintain the SPEA

1. Danger Trees	

I, Rupert Wong , hereby certify that:

e) I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
f) I am qualified to carry out this part of the assessment of the development proposal made by the developer William Steen ;
g) I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development p1roposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation

This assessment is in support of proposed fence and pedestrian bridge construction of the subject property only. A danger tree survey was not completed as part of this assessment because the type and location of the pedestrian bridge has not yet been finalized. It is strongly recommended the proponent solicit the services of a qualified arborist to asses any potential danger tree issues that may affect eventual development of the bridge crossing.

2. Windthrow	

I, Rupert Wong , hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
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This assessment is in support of proposed fence and pedestrian bridge construction of the subject property only. A windthrow survey was not completed as part of this assessment because the type and location of the pedestrian bridge has not yet been finalized. It is strongly recommended the proponent solicit the services of a qualified arborist to asses any potential windthrow issues that may affect eventual development of the bridge crossing.

3. Slope Stability	

I, Rupert Wong, hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
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All slope stability indicator features were confirmed absent. Typical topography within the SPEA is characterized by an approximate 15-20% grade descending from the historically developed top-of-bank to the south of the watercourse towards Morrison Creek. Results of the slope stability measures assessment are summarized in Appendix 1.

4. Protection of Trees	

I, Rupert Wong , hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
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It is recommended that a detailed 'Tree Retention Plan' be prepared by an ISA Certified Arborist once the exact footprint of the proposed bridge crossing has been determined. The Tree

Retention Plan should identify 'Tree Protection Areas' that contain the 'Critical Rooting Zones' of all trees proposed for retention. The plan should also contain tree management recommendations applicable to any tree pruning/clearing, land preparation and building phases of the bridge development process. The QEP retained to monitor other environmental factors should also ensure compliance with the Tree Retention Plan throughout the development process.

5. Encroachment	

I, Rupert Wong, hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
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The SPEA setback area will be clearly delineated using flagged stakes prior to the commencement of work. The developer is to contact the QEP three days prior to the commencement of construction activity for a pre-work meeting to discuss all measures and BMP's to protect aquatic resources.

6. Sediment and Erosion Control	

I, Rupert Wong, hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
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Specific measures to control sediment during construction of the bridge crossing and fence installation will include:
a) The project QEP is to be notified 3 days prior to beginning construction. The QEP will ensure appropriate mitigation measures are in place;
b) The 22.3 meter setback area is to be clearly delineated using stakes or flagging prior to construction;
c) Maintain/do not disturb all vegetation within the 22.3 meter setback area with the excetion of invasive species removal;
d) With the exception bridge construction work monitored by a QEP, no machinery is to enter riparian setback areas (22.3 m) at any time;
e) Where there is a potential for silt runoff in the proximity of existing watercourses, control devices will be installed prior to construction activities commencing as recommended by a QEP.

7. Stormwater Management	

I, Rupert Wong, hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
b. I am qualified to carry out this part of the assessment of the development proposal made by the developer William Steen ;
c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation

Stormwater management is not of concern to the project components as they are described in this report.

8. Floodplain Concerns (highly mobile channel)	

I, Rupert Wong, hereby certify that:

a. I am a qualified environmental professional, as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
b. I am qualified to carry out this part of the assessment of the development proposal made by the developer William Steen ;
c. I have carried out an assessment of the development proposal and my assessment is set out in this Assessment Report; and In carrying out my assessment of the development proposal, I have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation

Floodplain concerns include consideration for the placement of bridge abutments. The portion of the channel flowing through the northwest corner of the lot is characterized by a wide floodplain area and a meandering channel with areas of both sediment erosion and deposition indicative of a dynamic flow regime. The location and type of bridge abutments should be carefully determined by relevant professionals to ensure there is no negative long-term effect to the stream channel, its banks, and the structural integrity of the bridge and its abutments.

9. Fuels and Hazardous Materials

The accidental release of petroleum, oils, hydraulic fluids, lubricants, concrete additives, anti-freeze or other hazardous materials onto land surfaces or into waterbodies is an offence under the Federal Fisheries Act and may result in degradation of habitat quality and could be a threat to human health.

Environmental protection procedures for handling and storage of fuels and hazardous materials shall include the following items:

a) A spill kit of appropriate capacity will be on hand at all times during construction.
b) All identified spills will be cleaned up immediately, and contaminated soils and vegetation will be removed for appropriate disposal.
c) Refuelling of equipment is to occur only at designated fuelling stations and located at least 30 m from all watercourses.
d) All fuel, chemicals, and hazardous materials will be clearly marked.
e) Pumps and jerry cans are to be placed on poly sheeting and sorbent pads to contain spills.
f) All equipment maintenance with the potential for accidental spills (e.g., oil changes, lubrications) will be done on a designated area at least 30 m from any watercourses. Tarps should be laid down prior commencement of work to facilitate clean up.
g) In the event of a spill, the following guidelines should be followed:
    - Spills need to be immediately reported to the biologist. Spills to the receiving environment are to be reported to the BC Provincial Emergency Program (1-800-663-3456) if they exceed the reportable limits (e.g. 100 litres of fuel or oil).
    - Apply sorbent pads and booms as necessary.
    - Dispose of all contaminated debris, cleaning materials, and absorbent material by placing in an approved disposal site.

Section 5. Environmental Monitoring

Attach text or document files explaining the monitoring regimen Use your "return" button on your keyboard after each line. It is suggested that all document be converted to PDF *before* inserting into the PDF version of the assessment report. Include actions required, monitoring schedule, communications plan, and requirement for a post development report.

The developer is to contact a Qualified Environmental Professional (QEP) three days prior to the commencement of construction work for an onsite meeting. The following tasks will be completed at the meeting:

- Ensure the setback area is clearly delineated;
- Review work plan;
- Ensure appropriate mitigation measures will be in place;
- Review all Measures to Protect the SPEA stated in this report and ensure appropriate equipment to satisfy the measures are on-site or available;
- Review emergency spill response plan (see above);
- Set up a contact system should a biologist be required on site in the event of sediment/erosion issues or some other type of risk to aquatic habitats that may arise during construction.

Immediately upon completion of the construction work, the proponent is to contact a QEP for a post-construction site inspection. Any deficiencies noted by the QEP are to be addressed by the proponent. A final post-construction report is to be submitted by the QEP to the BC RAR Notification System.

Section 6. Photos

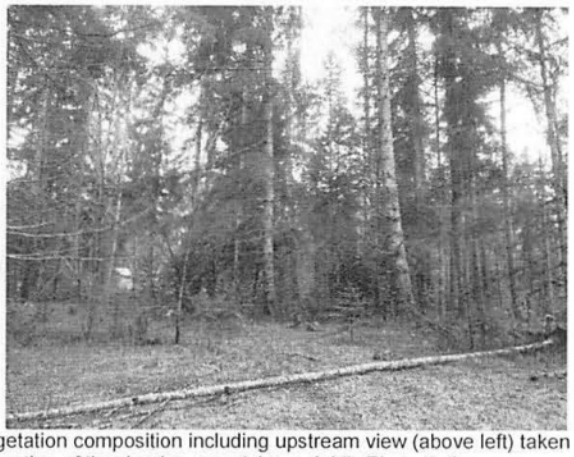

Photo 1 & 2. Morrison Crk. riparian areas showing general vegetation composition including upstream view (above left) taken from the northwest portion of the property and a terrestrial portion of the riparian area (above right). Photo 1 shows one possible location for proposed bridge construction. Bankfull width at this location is approx. 6.6 m.

Photo 3-4. View upstream (south) of the roadside ditch along Timberlane Road (above left). Note turbid water in ditch resulting from runoff through active construction site on Lot A (above right). Recommendations for check dam install to mitigate sediment laden water leaving the site have been made and are expected to be installed in the near future.

Photo 5. View of 1 m drop in ditch at confluence with Morrison Creek acting as an obstruction to fish passage. Note: yellow meter stick in centre of image showing depth of drop.

Photo 6. View to the north taken from near the northwest corner of the property showing a location on the left bank where active erosion (right of image) and sediment accumulation (left of image) are taking place.

TRA-2015-50324

Section 7. Professional Opinion

Assessment Report Professional Opinion on the Development Proposal's riparian area.

Date [April 17, 2014]

1. I/We Rupert Wong, R.P.Bio.

Please list name(s) of qualified environmental professional(s) and their professional designation that are involved in assessment.)

hereby certify that:

a) I am/We are qualified environmental professional(s), as defined in the Riparian Areas Regulation made under the *Fish Protection Act*;
b) I am/We are qualified to carry out the assessment of the proposal made by the developer William Steen, which proposal is described in section 3 of this Assessment Report (the "development proposal"),
c) I have/We have carried out an assessment of the development proposal and my/our assessment is set out in this Assessment Report; and
d) In carrying out my/our assessment of the development proposal, I have/We have followed the assessment methods set out in the Schedule to the Riparian Areas Regulation; AND

2. As qualified environmental professional(s), I/we hereby provide my/our professional opinion that:

a) [ ] if the development is implemented as proposed by the development proposal there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed, **OR**
(Note: include local government flex letter, DFO Letter of Advice, or description of how DFO local variance protocol is being addressed)
b) [X] if the streamside protection and enhancement areas identified in this Assessment Report are protected from the development proposed by the development proposal and the measures identified in this Assessment Report as necessary to protect the integrity of those areas from the effects of the development are implemented by the developer, there will be no harmful alteration, disruption or destruction of natural features, functions and conditions that support fish life processes in the riparian assessment area in which the development is proposed.

[NOTE: "qualified environmental professional" means an applied scientist or technologist, acting alone or together with another qualified environmental professional, if

(a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,
(b) the individual's area of expertise is recognized in the assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and
(c) the individual is acting within that individual's area of expertise.]

Appendix 1. Results of Slope Stability Assessment

CHECKLIST FOR SLOPE STABILITY				
Presence Known	**Presence Undetermined**	**Confirmed Absence**	**Indicator Feature(s)**	**Remark(s)**
			Bank and/or slope characteristics	
☐	☐	☒	Evidence of failure (e.g. scoured gullies, debris accumulations, erosion, tension fractures)	
☐	☐	☒	Revegetated landslide scars	
☐	☐	☒	Old bank protection works	
☐	☐	☒	Step-like benches or scarp formations	
☐	☐	☒	Exfiltration areas	
☐	☐	☒	Bedrock discontinuities (e.g. bedding planes, faults, fractures) that parallel slope or dip steeply out of the slope	
			Vegetation characteristics	
☐	☐	☒	Jack-strawed trees (trees tilted in various directions)	
☐	☐	☒	Linear strips of even aged timber	
☐	☐	☒	Vegetation in gully younger than adjacent forest	
☐	☐	☒	Wet site vegetation on slopes >50%	
			Soil characteristics	
☐	☐	☒	Shallow, wet, organic soil on slopes >50%	
☐	☐	☒	Mixed or buried soil profiles	
☐	☐	☒	Poorly developed soils relative to other comparable slopes	
☐	☐	☒	Poorly drained or gullied, fine-textured materials, 3 m deep on slopes > 50%	
☐	☐	☒	Poorly drained or gullied, coarse-textured materials on slopes > 50%	
☐	☐	☒	Poorly drained medium-fine grained material (e.g. lacustrine, marine and glaciofluvial deposits) >3 m deep on slopes	
☐	☐	☒	Ridged marine deposits	

Molony, Anne TRAN:EX

From: Molony, Anne TRAN:EX
Sent: Thursday, May 29, 2014 3:17 PM
To: 'Dusty Silvester'
Subject: RE: Timberlane Rd culvert/driveway installation - Environemntal Protection Plan

Hi Dusty,

Thank you for the report.

I did not see any recommendation for the appropriate culvert size for the driveway crossing (taking into consideration peak flows during rainfall events).

Can you please clarify.

Thanks,
Anne

Anne Molony
District Development Technician
Courtenay Area Office

From: Dusty Silvester [mailto:s.22
Sent: Thursday, May 29, 2014 2:42 PM
To: Molony, Anne TRAN:EX
Cc: s.22 s.22 ; 'ROBERT STEEN'; s.22 'R Wong'
Subject: Timberlane Rd culvert/driveway installation - Environemntal Protection Plan

Anne,

I have been asked to pass along an Environmental Protection Plan for proposed culvert/driveway installation along Timberlane Rd., Courtenay for William R. Steen's property at 432 Powerhouse Road. Please find the plan attached. If you have any questions or concerns please feel free to contact me.

Regards,

Dusty Silvester, R.B.TECH.

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V9N 1G6
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C s.22
W: currentenvironmental.ca

Memorandum

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w: currentenvironmental.ca

To: William Steen, Proponent
From: Rupert Wong, R.P.Bio
Dusty Silvester, R.B.Tech
Cc: Tobin Laughlin, Rock Creek Envr.

Date: May 27, 2014
Pages: 10
Project: 643-2

RE: ENVIRONMENTAL PROTECTION PLAN FOR CULVERT/DRIVEWAY INSTALLATION AT LOT A PLAN 25007 DSTLOT 155 LNDDST 15

This document prepared by Current Environmental Ltd. describes proposed mitigation measures for the protection of environmental sensitive areas related to the installation of a culvert and driveway access to Lot A Plan 25007 DstLot 155 LndDst 15. The culvert and driveway are proposed for installation in a ditch along Timberlane Road connected by surface water flows to Morrison Creek, an important fish bearing watershed. The ditch has been assessed to have a barrier to fish passage (~1 m vertical drop) at its confluence with Morrison Creek so there are no fish expected within the ditch; however, control of erosion and sediment are required to ensure there are no harmful effects to downstream fish bearing waters. The recommendations made in this document are based on existing information and are described under the subjects shown below.

SUBJECTS:

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1.0 ENVIRONMENTAL SETTING

Surface flows in the roadside ditch along the west side of Timberlane Road adjacent to the subject property are within the Morrison Creek watershed. Stormwater from the Lot A property along Timberlane Road and neighbouring property entre the ditch and are covey downstream to the ditch's confluence with Morrison Creek. Morrison Creek is a valuable, environmentally sensitive, and confirmed fish bearing watercourse that supports populations of four Pacific salmon species *Oncorhynchus gorbuscha*, *O. keta*, *O. tshawytscha*, and *O. kisutch*; three trout species *Salmo gairdneri*, *S. salar*, and the provincially blue listed Cutthroat Trout (*O. clarkii clarkii*) as well as the red-listed listed Morrison Creek Lamprey (*Lampetra richardsoni var. marifuga*). As such, potential environmental impacts to the subject ditch must be mitigated. It is a federal offence to cause serious harm to fish under Sections 35 and 36 of the *Federal Fisheries Act.*

A Riparian Areas Assessment of the property[1] identified a 2.0 m Streamside Protection and Enhancement Area (SPEA) along the Timberlane Road ditch and a 22.3 m setback on Morrison Creek where "the vegetation in the SPEA must be left in a natural, undisturbed state and activities that have the potential to damage it are not permitted in the SPEA". Provisions to the SPEA are made for providing access to a property, such as where a culvert/driveway installation are required; however, there should be no encroachment within the 22.3 m SPEA of Morrison Creek and vegetation clearing in the ditch should be limited to only what is necessary to support the driveway installation. The SPEA setbacks should be clearly marked and communicated to the contractor prior to the start of work.

2.0 PURPOSE

This document is intended to provide direction for proposed culvert/driveway installation works on the subject property in order to reduce the risk to environmental resources by satisfying the following objectives:

1. Outline Environmentally Sensitive Areas (ESA's) on and/or near the subject property;
2. Outline potential risks or impacts to identified ESA's on the site;
3. Summarize appropriate mitigation measures and Best Management Practices (BMP's) to minimize risk to ESA's.

3.0 BACKGROUND

General guidance for this plan has been taken from *DFO Measures to Avoid Causing Harm to Fish and Fish Habitat*[2], *Land Development Guidelines for the Protection of Aquatic Habitat*[3], *Environmental Best Management Practices for Urban and Rural Land Development in British Columbia*[4], and *Standards and Best Practices for Instream Works*[5]. As well, the mitigation measures and BMP's outlined herein are based on the experience of the project biologist and author.

[1] Current Environmental. April 17, 2014.
[2] http://www.dfo-mpo.gc.ca/pnw-ppe/measures-mesures/index-eng.html
[3] http://www.dfo-mpo.gc.ca/Library/165353.pdf
[4] http://www.env.gov.bc.ca/wld/documents/bmp/urban_ebmp/urban_ebmp.html
[5] http://www.env.gov.bc.ca/wld/documents/bmp/iswstdsbpsmarch2004.pdf

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4.0 Potential Construction-Related Impacts

4.1 Stormwater Management

Stormwater management BMP's will be incorporated to satisfy the *BC Water Quality Guidelines* for the protection of freshwater aquatic life for surface water flows generated from or flowing through the site (Section 5.2).

To meet this objective, work should be avoided during periods of precipitation and will ideally be scheduled for a period where the ditch is completely dry. If work must be done while there is water present, stormwater runoff will be managed through the use of a combination of check dams, and diversions including pumping as directed by a Qualified Environmental Professional (QEP).

No sediment laden water will be released to the aquatic environment of Morrison Creek under any circumstances. If turbid water must be pumped from the site, a suitable receiving area should be identified prior to the start of work that will allow water to infiltrate to ground.

4.2 Vegetation Removal/Grubbing and Earthworks

Ditch vegetation clearing can cause habitat degradation through the following impacts:

- Erosion of exposed soils and release to waterbodies, leading to damage of aquatic habitats. Post-disturbance soils are typically highly erodible, requiring that the management of sediment and drainage will be of the utmost importance for this project;
- Encroachment into prescribed aquatic setback areas (Figure 1);
- Mechanical or noise related disturbance of wildlife and birds;
  - particularly nesting birds (April 1 - July 31)
  - amphibians
  - small mammals
- Alteration or interruption of natural flow patterns, including groundwater;
- Direct mechanical destruction or injury of wildlife;
- Release of fuel and hydraulic fluid leaks or spills.

5.0 Measures to Mitigate Environmental Impacts

Mitigation measures proposed for the development are intended to minimize the net environmental impact of the proposed development as outlined below.

5.1 Environmental Monitoring Plan

A key element of this EPP is the involvement of a Qualified Environmental Professional (QEP) to oversee works to ensure that environmental impacts are minimized through implementation and maintenance of appropriate mitigation measures.

The amount of time the QEP will need to dedicate to the project will vary significantly with the timing and method of construction and the diligence and experience of the contractor. The QEP should be on site during all critical construction phases when work is in close proximity to surface waters and/or there is a potential risk to the environment.

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It is expected that the QEP will ensure that setbacks are clearly delineated prior to the start of work and will be present at the kickoff meeting preceding clearing/grubbing leading up to the culvert/driveway installation, and during any periods of precipitation to ensure that water quality guidelines are being met. Additional site visits will be conducted during and/or immediately following intense precipitation events (i.e. ≥ 25 mm in a 24hr. period). Once construction has proceeded beyond soil disturbances and/or during a completely "dry" period, site visits will likely not be required.

5.2 Identification and Delineation of Sensitive Areas

- Prior to construction, the setback boundary from Morrison Creek and the limits of ditch clearing must be clearly marked.
- No machinery access or spoil material storage of any kind is to occur within these areas without the consent of the QEP.
- Site plans clearly showing sensitive areas are to be distributed to crew personnel, particularly machine operators, and all personnel made aware of environmental concerns at a kick-off tailboard meeting.

5.3 Erosion and Sediment Control

Construction activities will be managed to ensure compliance with Sections 35 and 36 of the *Fisheries Act*. Water quality monitoring should focus on reduction of sediment generation and release to aquatic habitats. If required, water samples should be tested onsite for turbidity with handheld meters. Water quality monitoring should to be done as determined by the QEP on the basis of visual monitoring of water clarity, with turbidity measurements taken if deemed necessary, as well as following precipitation events in excess of 25 mm.

As a guideline, the BC Water Quality Guidelines[6] for the protection of aquatic life stipulate an acceptable increase of 8 NTU when background levels are between 8 and 80 NTU and a 10% increase when background levels exceed 80 NTU. In the event the established limit is exceeded, works should be suspended and the QEP should be consulted to determine whether additional impact mitigation measures are required.

Exposed surface soils observed on the site indicate a moderate potential to erode and suspend into surface waters. In addition, any exposed clay or similarly sized particles, if suspended, will not readily settle out and can cause construction delays if not handled appropriately.

The implementation and maintenance of sediment control measures and related equipment and supplies are the responsibility of the construction contractor, and will be designed, constructed, and maintained as required by the QEP. Construction activities will not commence until proper sediment control measures are in place. Regular inspection of sediment control measures during construction will ensure these are functioning and maintained as required.

Specific measures to control sediment during construction will include:

- No machinery is to enter setback areas (Figure 1) at any time without the permission of the QEP.

[6] http://www.env.gov.bc.ca/wat/wq/

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- Setback areas must be delineated prior to the commencement of construction work.
- Excavation will be stopped during significant rainfall events or whenever surface erosion occurs affecting a watercourse. This will be at the discretion of the QEP.
- As much as possible, divert clean surface water around active worksite areas.
- Where there is a potential for silt runoff in the proximity of existing watercourses, control devices will be installed prior to the commencement of construction activities.
- Filter fabric dams, rock check dams, settling ponds, geotextiles, French drains, interception ditches, isolation berms, and silt fencing will be used as needed on a site-specific basis to control erosion. Filtration should be accomplished using filter fabric keyed into substrates and banks, and elevated using stakes or straw bales (Photo 1). Silt fencing is not an acceptable mitigation technique to control erosion in flowing watercourses; however, it is useful for containing slumping areas and for use as baffles to slow water velocities.
- Disturbances to erodible surfaces are to be avoided to the greatest extent possible (i.e. minimize extent of disturbed areas and take an incremental approach to clearing). Clearing will take place immediately prior to earthworks to minimize the length of time that soils are exposed.
- Permanent exposed soil areas and erosion-prone slopes that may potentially erode into watercourses are to be top dressed with mulch and/or non erodible sand or geotextile (or a combination thereof) and hydroseeded immediately.
- The outlets and inlets of all culverts are to be armoured with rip-rap headwalls to prevent erosion and undermining of the structure.
- Silt laden waters that may enter a watercourse will be diverted or pumped to well vegetated areas for filtration. If required, discharge hoses are to be placed so as not to cause erosion. This is usually accomplished by laying poly sheeting and using large rocks or wood to dissipate discharge flows.
- Soil stockpiles will be placed a minimum of 30 m from Morrison Creek and in a location where erosion back into the ditch cannot occur and will not impede any drainage.
- Site re-vegetation measures are typically required to stabilize soils and stream banks and reduce erosion and the establishment of weed species. The measures, including hydroseeding, are to be implemented as directed by the QEP as construction is completed.

5.4 CLEARING AND GRUBBING

Clearing and grubbing is the removal of vegetation from an area.

- All areas to be cleared will be walked by the QEP and Construction Supervisor to identify any environmental resources that need to be protected (i.e. setback areas) prior to the start of work.
- As per the BC *Wildlife Act*, during the period between April 1 and July 31st, the EM must determine whether a migratory bird nest survey is required prior to clearing. If it is

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determined that a nest survey is required and an active nest is found, a minimum buffer must be set around the tree until the young have fledged from the nest.

- Grubbing and stripping limits will be marked in the field prior to the commencement of work.
- Vegetation identified for protection, (e.g., mature trees and potential wildlife trees) will be left intact and root systems undisturbed.
- The installation of appropriate surface drainage control should occur concurrent with clearing activities.
- Clearing activities will not remove any vegetation outside the authorized clearing limits.
- Grubbing will be suspended during and immediately after intense rainstorms that have resulted in excessive run-off.
- The grubbing and stripping of unstable or erodible soil will be limited to that which is absolutely necessary to satisfy the engineering requirements of the project. Where construction can be completed without grubbing and stripping, none shall occur.
- All stockpiles of grubbed material within the specified clearing limits will be located so as not to obstruct the access or work of others or natural drainage patterns.

5.5 Fuels and Hazardous Materials

The accidental release of petroleum, oils, hydraulic fluids, lubricants, concrete additives, anti-freeze or other hazardous materials onto land surfaces or into waterbodies may result in degradation of habitat quality and could be a threat to human health.

Environmental protection procedures for handling and storage of fuels and hazardous materials shall include the following items:

- A large spill kit will be on hand at all times during construction.
- Smaller spill kits are to be maintained on all machinery.
- All identified spills will be cleaned up immediately, and contaminated soils and vegetation will be removed for appropriate disposal.
- Refueling of equipment is to occur only at designated fueling stations and located at least 30 m from all nearby watercourses.
- All fuel, chemicals, and hazardous materials will be clearly marked.
- Fire extinguishers are to be located on all machinery.
- If accidental mixing of fuels, chemicals, and hazardous materials does occur, the waste product will be removed to an approved disposal/recycling facility.
- Pumps and jerry cans are to be placed on poly sheeting and sorbent pads to contain spills.

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- All equipment maintenance with the potential for accidental spills (e.g., oil changes, lubrications) will be done on a designated area at least 30 m from any watercourses. Tarps should be laid down prior commencement of work to facilitate clean up.
- Used oil, filters, and grease cartridge lubrication containers and other products of equipment maintenance will be collected and kept in a secure receptacle for later disposal.
- In the event of a spill, the following guidelines should be followed:
  - Spills need to be immediately reported to the EM and the construction supervisor. Spills to the receiving environment are to be reported to the BC Provincial Emergency Program (1-800-663-3456) if they exceed the reportable limits (e.g. 100 liters of fuel or oil).
  - The Construction Superintendent and Environmental Monitor will be responsible for coordinating clean-up and collecting all pertinent information.
  - Deploy on-site personnel to build containment dykes, or pump spilled contaminant into storage drums.
  - Apply sorbent pads and booms as necessary.
  - Dispose of all contaminated debris, cleaning materials, and absorbent material by placing in an approved disposal site.
  - Debrief all site personnel on the incident and take additional precautions to ensure that similar accidents will not recur.
  - There are to be daily, documented inspections of impact mitigation measures, fire prevention and spill recovery supplies and any equipment working in and around watercourses.

5.6 SUGGESTED EQUIPMENT AND SUPPLIES

The following is suggested supply list for environmental mitigation requirements of this project:

- 1- Large spill kit in waterproof container.
- Spill kits on all equipment
- 1 - 2" submersible pump with minimum 100 ft of discharge hose.
- 1 roll of plastic poly sheeting (6 mm)
- 1 roll of geotextile filter fabric
- Stakes - 2 to 3 ft in length; rebar is also good
- Access to mulch (hay, wood chips, compost, etc)
- 1 roll of silt fencing
- Shovels, sledge hammer, rakes
- Roll baling wire

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6.0 CLOSURE

This report was prepared exclusively for Robert Steen by Current Environmental Ltd. The quality of information, conclusions and estimates contained herein is consistent with the level of effort expended and is based on: i) information available at the time of preparation; ii) data collected by the author, technical personnel and/or supplied by outside sources; and iii) the assumptions, conditions and qualifications set forth in this report. This report is intended to be used by Robert Steen only, subject to the terms and conditions of its contract or understanding with Current Environmental Ltd. Use or reliance on this report by any third party is at that party's sole risk.

Current Environmental Ltd.

Rupert Wong, R.P.Bio. & Dusty Silvester, R.B.Tech.

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7.0 PHOTO

Photo 1. View downstream of appropriate rock check dams used to filter sediment and reduce flow velocities.

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8.0 FIGURES

Figure 1. Site plan of subject property from Riparian Areas Regulation assessment showing calculated SPEA setbacks for Morrison Creek (red line) and the ditch along Timberlane Road (Purple line).

Molony, Anne TRAN:EX

From: Dusty Silvester <s.22
Sent: Monday, June 2, 2014 9:56 AM
To: FrontCounter BC FLNR:EX
Cc: Molony, Anne TRAN:EX; 'ROBERT STEEN'; s.22
s.22
Subject: Section 9 Notification - Driveway/culvert Installation Timberlane Road, Courtenay
Attachments: 432Powerhouse_Section9N_140602.pdf

Front Counter,

Please find attached a Water Act Section 9 Notification for the installation of two driveway culverts intended to provide access to a residential property on Timberlane Road. The crossings intersect a roadside ditch with surface water connection to Morrison Creek.

If you require further information please feel free to contact me.

Dusty Silvester, R.B.TECH.

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EDAS ENT'D

BRITISH COLUMBIA

Ministry of Forests, Lands, and Natural Resource Operations

Approval Application or Notification for Changes In and About a Stream Under Section 9 of the *Water Act* and Part 7 of the Water Regulation

*Incomplete or inaccurate forms do not constitute **Notification** & will not be accepted.*
Proceeding with works after submission of an incomplete or inaccurate form would be a violation of the Water Regulation

☐ **APPROVAL APPLICATION** ☒ **NOTIFICATION[1] (see USERS' GUIDE)**

1. Applicant Information (also complete sections 6 and 7)

Name: William R. Steen		
Address: 432 Powerhouse Road.		
City: Courtenay	Province: BC	Postal code: V9N9L1
Phone:250-338-5558	e-mail: s.22	

2. Location of Works

Street Address of Works (or nearest town): 432 Powerhouse (Timberlane Road Access)		
Stream Name: Roadside Ditch (Timberlane Road)		Flows Into: Morrison Creek
Location on Stream: 30 m upstream of Timberlane Road ditch confluence with Morrison Creek		
Reference Landmarks: Terminus of Timberlane Rd at Morrison Crk		Amount of disturbance in m^2: 36 (18 m^2 x 2)
Multiple Sites: YES / NO: Yes		Number of sites: 2
Latitude:49°40'43"	Longitude: 125°01'29"	Elevation: 46 m ASL
Legal description of property where work is proposed: Lot A Plan 25007 DstLot 155 LndDst 15		

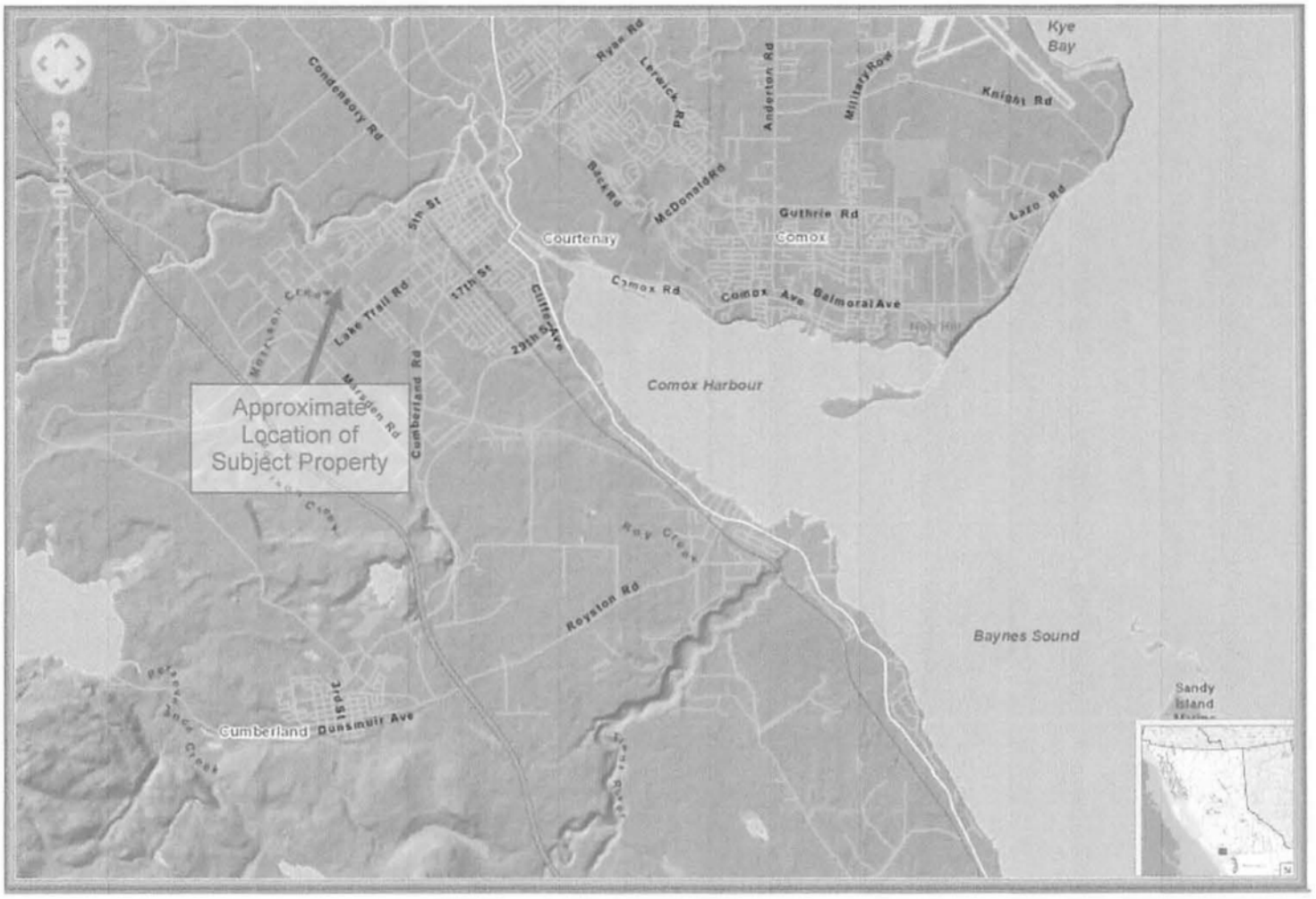

Figure 2. Key map showing the approximate location of the site near the City of Courtenay.

4. Proposed Timing for Work	
Start (day/month/year): June 2, 2014	Finish (day/month/year):July 1, 2014

FOR OFFICE USE ONLY	
Date Received:	Water File Number:
	Client Number:
	Application Number:
	Amount Received:
	Receipt Number:

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5. Type of Works

Requires Approval:

- ☐ Bank Erosion Protection [E]
- ☐ Bridge Installation/maintenance/removal (other than clear span) [E]
- ☐ Stream Diversion [QP] Diversion berm structure plan required
- ☐ Large Debris Removal – by machine [QP] plan required
- ☐ Gravel Removal [QP]
- ☐ Other: Provide details in space below

*Provide culvert dimensions:

Length:

Width:

Diameter:

[E] Professional Engineer may be required
[QP] Qualified Professional may be required

Requires Notification:

- ☒ Installation*/maintenance/removal of road crossing **culvert** (*follow Forest Practices Code Stream Crossing Guidebook)
- ☐ Construction/maintenance/removal of a **clear span bridge**
- ☐ Construction/maintenance of a **pipeline crossing**
- ☐ Construction/maintenance/removal of a **pier or wharf**
- ☐ Cutting of **annual vegetation** in a stream channel
- ☐ Repair/maintenance of existing **dike** or **erosion protection w**
- ☐ Construction/maintenance of **storm water outfalls**
- ☐ Control of **Eurasian Watermilfoil** or other **aquatic vegetatior**
- ☐ Construction/maintenance of **ice bridge, winter ford or snow**
- ☐ Maintenance of minor and routine nature by a public utility
- ☐ Removal of a **beaver dam** (As authorized under the Wildlife A
- ☐ Small debris removal – by hand
- ☐ Construction of a **temporary ford**
- ☐ Construction of a **temporary diversion** around a worksite

The following require Notification and may only be undertaken by the Crown in right of either Canada or British Columbia, or their Agents:

Federal/Provincial

- ☐ Construction/maintenance/removal of a flow or water level **measuring device**
- ☐ Construction/removal of a **fish fence** or **screen**, **fish or game guard**
- ☐ Restoration/maintenance of **fish habitat**

The following require Notification and may only be undertaken by the Crown in right of either British Columbia, or a Municipality, or their Agents:

Provincial/Municipal

- ☐ Restoration/maintenance of a **stream channel**
- ☐ Clearing of an obstruction from a bridge or culvert during a flood emergency[1]
- ☐ Construction or placement of **erosion protection works or flood protection** works during a flood emergency[2]

[1] Some activities fitting the description for Notification may be reviewed by Ministry/Agency staff, who may decide that an Approval is required.

[2] Must be completed under direction of the Crown. No notification is required prior to undertaking works, but a description of changes must be submitted to a habitat officer within 72 hours of the change.

[QP] QP means a professional who through suitable education, experience, accreditation and knowledge may be reasonably relied on to provide advice within their area of expertise.

Detailed Description of Work to be Performed (continue on next page):

Total area disturbed by proposed works (all sites): 36 m^2

Description of Works

Proposed installation of two 0.450 m Ø culverts under new driveway alignments providing access to the property at Lot A Timberlane Road that will require the permanent alteration of approximately 36 m^2 of an existing vegetated ditch. The existing ditch conveys surface water flows from its drainage along Timberlane Road downstream to Morrison Creek.

Environmental Setting

Surface flows in the roadside ditch along the west side of Timberlane Road adjacent to the subject property are within the Morrison Creek watershed. Stormwater from the Lot A property along Timberlane Road and neighbouring property enter the ditch and convey flows downstream to the ditch's confluence with Morrison Creek. There is an approximate 1 m vertical drop at the confluence of the ditch with Morrison Creek that excludes the possibility of fish passage into the ditch alignment.

Morrison Creek is a valuable, environmentally sensitive, and confirmed fish bearing watercourse that supports populations of four Pacific salmon species *Oncorhynchus gorbuscha*, *O. keta*, *O. tshawytscha*, and *O. kisutch*; three trout species *Salmo gairdneri*, *S. salar*, and the provincially blue listed Cutthroat Trout (*O. clarkii clarkii*) as well as the red-listed listed Morrison Creek Lamprey (*Lampetra richardsoni var. marifuga*). As such, potential environmental impacts to the subject ditch must be mitigated. It is a federal offence to cause serious harm to fish under Sections 35 and 36 of the *Federal Fisheries Act.*

Summary of Mitigation Measures

The subject ditch along Timberlane Road flows seasonally and was observed to be dry at the time of assessment on May 29, 2014. Culvert installation work will be timed to coincide with a period of dry weather; however, if the ditch is wetted during the desired installation window an environmental monitor will isolate the work site (as required) using sand bag and poly coffer dams and will pump water around the work area. If pumping is required clean water will be discharged back to the ditch downstream of the work area and any sediment laden water will be discharged to natural vegetated depressions where the water will infiltrate or be filtered before release offsite.

The subject ditch is non-fish bearing as a result of a 1 m vertical drop near its confluence with Morrison Creek. If water is present in the ditch at the time of installation an oil absorbent boom will be set up downstream of the work site at the start of construction as needed. These measures will remain in place throughout the duration of the work.

Prior to construction, the setback boundary from Morrison Creek and the limits of ditch clearing will be clearly marked. No machinery access or spoil material storage of any kind is to occur within these areas without the consent of the QEP.

In support of Erosion and Sediment Control (ESC), water quality monitoring will be done as determined by the QEP on the basis of visual monitoring of water clarity, with turbidity measurements taken if deemed necessary, as well as following precipitation events in excess of 25 mm. As a guideline, the BC Water Quality Guidelines[1] for the protection of aquatic life stipulate an acceptable increase of 8 NTU when background levels are between 8 and 80 NTU and a 10% increase when background levels exceed 80 NTU. In the event the established limit is exceeded, works should be suspended and the QEP should be consulted to determine whether additional impact mitigation measures are required.

An Environmental Protection Plan (EPP) appended to this Notification contains a complete description of mitigation measures.

[1] http://www.env.gov.bc.ca/wat/wq/

6. Land Ownership

Please check one of the following:

☐ The applicant is the owner of the property.

☒ The property is Crown land.
Tenure/licence number: MOT Road #00644 Timberlane Road

☐ The property is owned by the following Landowner (i.e. Landowner is different from applicant):

Landowner's Name:		
Address:		
City:	Province:	Postal code:
Phone:	e-mail:	

Do you have the Landowner's written approval to enter the land(s) to complete the works? ☐ Yes ☐ No

Note: a) Ownership of all parcels of land on which the proposed works will occur must be identified, b) do not attach the written approval with the application, but keep it for your files as you may be asked to produce it during an inspection or audit.

7. Who is doing the Work?

Contact information for company designing and supervising construction of the work (if different from applicant):

Company Name: Rock Creek Environmental		
Contact Name: Tobin Laughlin	Professional Affiliation: PL, IN, MP, PIR, PIC	
Address: Box 3147		
City: Courtenay	Province: BC	Postal Code:V9N 5N4
Phone: 250-897-1661	e-mail: rockcreekenviro@shaw.ca	

Contact information for company undertaking the construction (if different from applicant):

Company Name:		
Contact Name:		
Address:		
City:	Province:	Postal Code:
Phone:	e-mail:	

8. Statement of Intent

By submitting this application form, I declare that the information contained on this form is complete and accurate information. I have read, understood and will meet the requirements to construct works and changes in and about a stream in accordance with Section 9 of the *Water Act* and Part 7 of the Water Regulation including, for Notifications, Terms and Conditions as specified by a Habitat Officer of the Ministry of Forests, Lands, and Natural Resource Operations.

With respect to a Notification, in accordance with Part 7 of the Water Regulation, Section 40(1), I declare that I have submitted my application 45 days prior to the commencement of any work by me, or anyone employed by me. I understand that I will be receiving a confirmation of receipt of the application by the Ministry of Forests, Lands and Natural Resource Operations (including confirmation of the applicable dates for the 45 day period) and that, unless I receive a response from a Habitat Officer within this 45 day notification period, I understand that I should not commence any activities until the 45 day notification period has passed. I understand that it is an offence under the *Water Act* to make changes in and about a stream without authority.

SIGN HERE Signed: X W. R. Steen Application Date: May 30/14 day/month/year

9. Submission Instructions

Send the completed form along with the following attachments to the local office in which the proposed works are located. Addresses for local offices are listed on the instruction sheet.

Please note that if you are providing a Notification, no fees are required. However, a fee of $130.00 is required if you are submitting an application for an Approval. The $130.00 Approval application fee is not refundable. Payment for the Approval fee may be made at FrontCounter BC offices with a credit card.

If the proposed works require an Approval, prior to proceeding further with this application please ensure that this project will be able to proceed under the Federal *Fisheries Act*.

Required Attachments for both Notifications and Approvals:

☒ Sketch plan (mandatory)

☒ Key location map (mandatory)

☐ Engineering drawing (mandatory for works requiring approval noted with [E])

☐ For works requiring an Approval **only**, a cheque, money order or deposit by credit card for $130 payable to: Minister of Finance. The fee is non-refundable.

No fee is required for a Notification.

10. Responsibilities

You are required to comply with all applicable federal, provincial and municipal laws and regulations. If you anticipate that the planned work may result in harmful alteration, disruption or destruction of fish habitat you should send a copy of your completed Notification/Approval Application directly to the nearest office of Fisheries and Oceans Canada. Review and comment by DFO may necessitate changes to the proposed works.

Has a copy of this notification/approval application been sent to Fisheries and Oceans Canada (check one)?

YES ☐ NO ☒

EDAS ENT'D

Molony, Anne TRAN:EX

From: ROBERT STEEN s.22
Sent: Tuesday, December 2, 2014 4:48 PM
To: Molony, Anne TRAN:EX
Subject: Re: Permit 2014-00402 - Timberlane Road

Hi Anne: Regarding the outstanding items, Lorne Steel ,Landscape architect, will be attending to those matters.. Regarding the complaints I talked to Bill Wheeldon. There has NEVER been water running across timberlane Rd. If you look at the situation it is impossible unless the ditch is overflowing which can't happen. Regarding the road it is impossible for debris to be tracked down from the construction site because of the ditch between the site and the road. This "lady" has been impossible since the commencement of construction because we have "disturbed her privacy". I refrained from calling the police one dry day when she decided to blow street dust off the road onto our freshly painted carraige house.
Bill Steen

----- Original Message -----
From: "Anne TRAN Molony:EX" <Anne.Molony@gov.bc.ca>
To: "Bill Wheeldon s.22 <s.22 , 's.22
.s.22
Sent: Tuesday, December 2, 2014 3:09:43 PM
Subject: FW: Permit 2014-00402 - Timberlane Road

Hi Bill,

To date I have not received confirmation of the outstanding works listed below. Please advise on the status of each item.

In addition, I have recently received the following complaints:
- the road is not being kept clean of mud and debris which is being tracked from the construction
- during storm events water is running across Timberlane Road down into the neighbouring property below because the newly installed driveway culverts are not large enough to manage the water and are overflowing

Please also advise on these two issues.

Thank you,
Anne

Anne Molony
District Development Technician
Courtenay Area Office

-----Original Message-----
From: Molony, Anne TRAN:EX
Sent: Tuesday, August 19, 2014 2:11 PM
To: 'Bill Wheeldon (s.22
Subject: Permit 2014-00402 - Timberlane Road

Hi Bill,

I was out reviewing the secondary driveway on Timberlane Road this morning. There are few outstanding items that need rectifying, specifically:
- the vegetation was supposed to be left intact along the ditchline, this has been removed and requires grass seeding along with all other areas within the right-of-way with exposed soils
- the headwalls on the driveway culverts are raised well above grade, these need to be infilled/contoured - what are the driveways going to be finished with?
- there is a white pipe (see attached photo) exiting into the ditch, no water may be diverted from within the bounds of the property into the ditch, ditches are in place to manage road water, not property owner's perimeter drains, etc. - this pipe requires removal

Please let me know when these details have been taken care of and I will come out to re-inspect.

Thanks,

Anne Molony
District Development Technician
Courtenay Area Office
Ph: 250-334-6969 Cell: 250-218-1605
Email: Anne.Molony@gov.bc.ca

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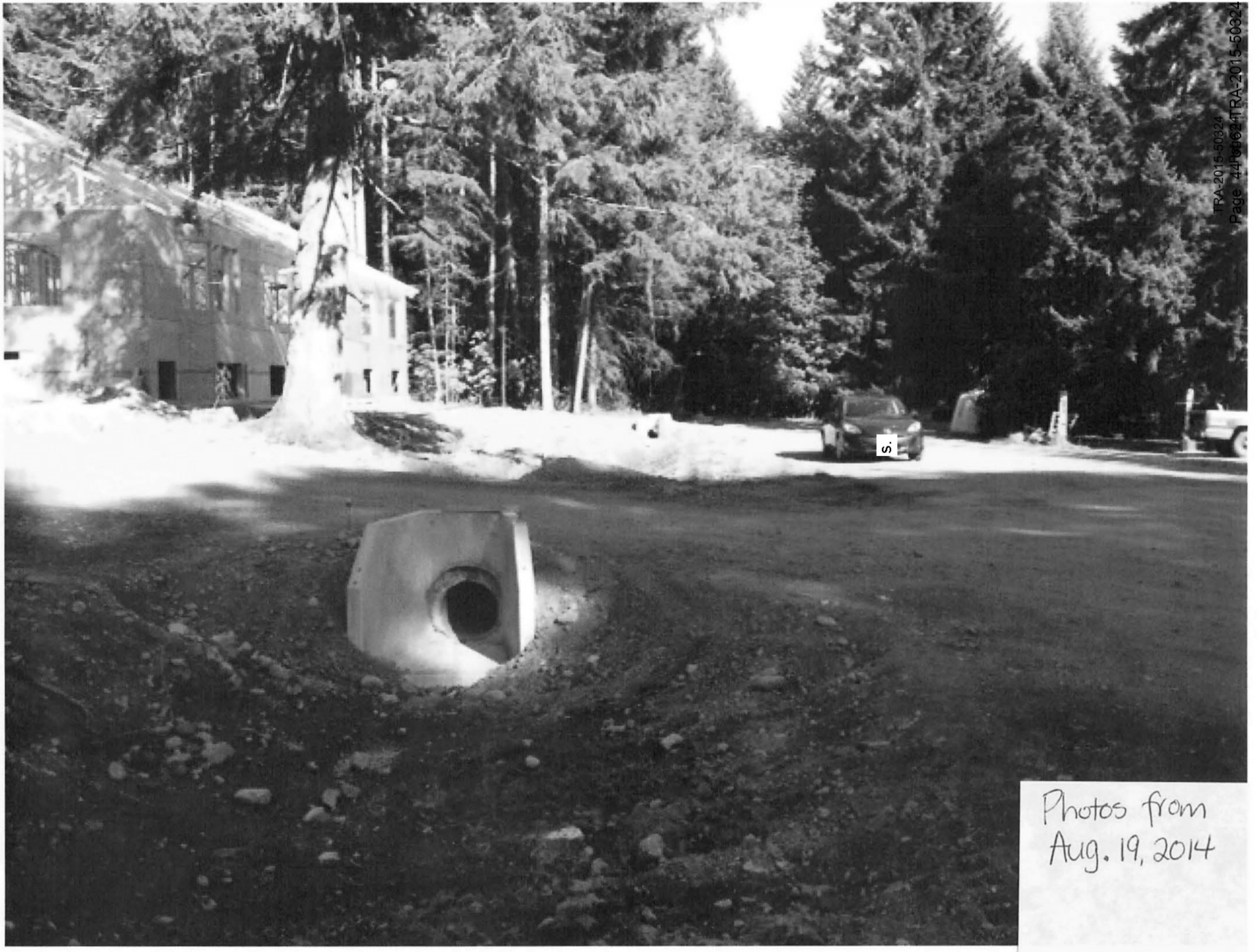

Photos from
Aug. 19, 2014

TRA-2015-50324

TRA-2015-50324

TRA-2015-50324

TRA-2015-50324

Molony, Anne TRAN:EX

From: ROBERT STEEN s.22
Sent: Monday, December 8, 2014 2:21 PM
To: Molony, Anne TRAN:EX
Subject: Re: Permit 2014-00402 - Timberlane Road

Thanks Anne: I guess for you records you should have our current Courtenay address: 432 Powerhouse Rd. Courtenay BC V9N 9L1 Bill Steen

----- Original Message -----
From: "Anne TRAN Molony:FX" <Anne.Molony@gov.bc.ca>
To: "ROBERT STEEN" <s.22
Sent: Monday, December 8, 2014 1:32:39 PM
Subject: RE: Permit 2014-00402 - Timberlane Road

Thank you for your reply, I have attached a copy of the permit.

Anne Molony
District Development Technician
Courtenay Area Office

-----Original Message-----
From: ROBERT STEEN [mailto s.22
Sent: Wednesday, December 3, 2014 12:22 AM
To: Molony, Anne TRAN:EX
Subject: Re: Permit 2014-00402 - Timberlane Road

Hi Anne: Can you send me a copy of the permit. I don't seem to ahve a copy.
Bill

----- Original Message -----
From: "Anne TRAN Molony:EX" <Anne.Molony@gov.bc.ca>
To: "Bill Wheeldon s.22 " <s.22 >, "s.22
<s.22
Sent: Tuesday, December 2, 2014 3:09:43 PM
Subject: FW: Permit 2014-00402 - Timberlane Road

Hi Bill,

To date I have not received confirmation of the outstanding works listed below. Please advise on the status of each item.

In addition, I have recently received the following complaints:
- the road is not being kept clean of mud and debris which is being tracked from the construction
- during storm events water is running across Timberlane Road down into the neighbouring property below because the newly installed driveway culverts are not large enough to manage the water and are overflowing

Please also advise on these two issues.

Thank you,
Anne

Anne Molony
District Development Technician
Courtenay Area Office

-----Original Message-----
From: Molony, Anne TRAN:EX
Sent: Tuesday, August 19, 2014 2:11 PM
To: 'Bill Wheeldon (s.22
Subject: Permit 2014-00402 - Timberlane Road

Hi Bill,

I was out reviewing the secondary driveway on Timberlane Road this morning. There are few outstanding items that need rectifying, specifically:
- the vegetation was supposed to be left intact along the ditchline, this has been removed and requires grass seeding along with all other areas within the right-of-way with exposed soils
- the headwalls on the driveway culverts are raised well above grade, these need to be infilled/contoured - what are the driveways going to be finished with?
- there is a white pipe (see attached photo) exiting into the ditch, no water may be diverted from within the bounds of the property into the ditch, ditches are in place to manage road water, not property owner's perimeter drains, etc. - this pipe requires removal

Please let me know when these details have been taken care of and I will come out to re-inspect.

Thanks,

Anne Molony
District Development Technician
Courtenay Area Office
Ph: 250-334-6969 Cell: 250-218-1605
Email: Anne.Molony@gov.bc.ca

Molony, Anne TRAN:EX

From: ROBERT STEEN <s.22
Sent: Tuesday, December 9, 2014 9:53 AM
To: Molony, Anne TRAN:EX
Subject: flooding at 474 Timberlane

Hi Anne: I am sure you have heard the latest. I talked to my contractor this am about this. s.22
s.22
BUT Bill Wheeldon is disappointed with the Ministry becaause we have wanted to clean this ditch out from the beginning of our project but have been denied this for "environmental" reasons. Can you arrange for someone in authority to look at the situation and if necessary break the rules and have a crew in there asap to clear the ditch right down to the creek. Hopefully someone doesn't start a suit.
Bill Steen

Molony, Anne TRAN:EX

From: ROBERT STEEN s.22
Sent: Tuesday, December 9, 2014 7:05 PM
To: Molony, Anne TRAN:EX
Subject: Timberlane

HI Anne: For your info: s.22 It will be interesting to see who they are going after. May be you should talk to Dusty about this ditch.
Bill

Molony, Anne TRAN:EX

From: ROBERT STEEN <s.22
Sent: Thursday, December 11, 2014 4:44 PM
To: Molony, Anne TRAN:EX
Subject: Re: Permit - 2014-00402 - Flooding at 474 Timberlane

Hi Anne: Bill Wheeldon will phone you tomorrow. My statement regarding overflow was with regard to the part of the road we built not the lower part with the old small culvert that I understand we had to leave and is still there.
Bill

----- Original Message -----
From: "Anne TRAN Molony:EX" <Anne.Molony@gov.bc.ca>
To: 's.22 " <s.22
Cc: s.22
s.22
Sent: Thursday, December 11, 2014 4:21:08 PM
Subject: Permit - 2014-00402 - Flooding at 474 Timberlane

Hello Bill,

I'm following up on the flooding that has taken place at 474 Timberlane Road.

On December 2, 2014 I sent you an email stating the following: "I have recently received the following complaints ... during storm events water is running across Timberlane Road down into the neighbouring property below because the newly installed driveway culverts are not large enough to manage the water and are overflowing..." (I subsequently measured the culverts and they are 400mm, whereas, within the Section 9 document it states the driveway culverts were to be 450mm).
To which you replied on the same day "...There has NEVER been water running across Timberlane Rd. If you look at the situation it is impossible unless the ditch is overflowing which can't happen."

There has been no history of 474 Timberlane Road experiencing severe flooding issues, this changed on Tuesday December 9, 2014 with the basement of the residence flooding.

As the permit holder you are responsible for ensuring the conditions within your permit are adhered to, this includes proper construction of the extension to Timberlane Road (which is not yet complete) and ongoing maintenance. You are responsible for drainage as stated under Condition #22 "Permittee to be responsible for all future drainage problems as they pertain to said works" and under Condition #47 "Permittee is responsible for maintaining positive drainage in the area covered by this permit."

I have cc'd the property owner, Martin Hubbard, on this email.

Sincerely,

Anne Molony
District Development Technician
Courtenay Area Office
Ph: 250-334-6969 Cell: 250-218-1605
Email: Anne.Molony@gov.bc.ca

Molony, Anne TRAN:EX

From: ROBERT STEEN <s.22
Sent: Thursday, December 11, 2014 4:52 PM
To: Bill Wheeldon
Cc: Molony, Anne TRAN:EX
Subject: mini culvert

Hi Bill: When you talk to Anne be sure that she knows about the mini culvert down below our larger one, which I believe is their responsiblity not ours.
Bill

2014-00402

Molony, Anne TRAN:EX

From: ROBERT STEEN <s.22
Sent: Wednesday, January 21, 2015 12:05 PM
To: Molony, Anne TRAN:EX
Subject: Timberlane ditch

Hello: Anne: I propose to check with Ms Morrison at the Victoria Ministry claims office to recover the cost ($4,106.55) of clearing and "the environomental upgrading" of the road ditch approaching Morrison Creek on Timberlane. Bill Wheeldon tells we had already upgraded our culverts from 16 in to 18 in. I got $300 for the ones we had to take out. Can you help me with this claim or shall I go directly?
Bill Steen

Molony, Anne TRAN:EX

From: Molony, Anne TRAN:EX
Sent: Monday, January 26, 2015 1:41 PM
To: 'ROBERT STEEN'
Subject: RE: Cost of Timber;ane ditch

You will need to take that up with our claims department, I'm not sure exactly what it is you are trying to claim.

Anne Molony
District Development Technician
Courtenay Area Office

-----Original Message-----
From: ROBERT STEEN [mailto: s.22
Sent: Monday, January 26, 2015 1:40 PM
To: Molony, Anne TRAN:EX
Subject: Cost of Timber;ane ditch

Hello Anne: Have you considered my proposed claim for the cost of fixing the timberlane ditch?
Bill Steen

Molony, Anne TRAN:EX

From: ROBERT STEEN s.22
Sent: Friday, February 6, 2015 10:32 AM
To: Molony, Anne TRAN:EX
Cc: Dusty Silvester
Subject: Re: Timberland Road

Hello Anne: Dusty Silvester, "Current Environmental" will be finalizing the job.
Bill Steen

----- Original Message -----
From: "Anne TRAN Molony:EX" <Anne.Molony@gov.bc.ca>
To: "ROBERT STEEN" <s.22
Sent: Thursday, February 5, 2015 4:20:39 PM
Subject: Timberland Road

Hi Robert,

I was out looking at the end of Timberlane Road and noticed that you have placed rock in the ditch.

What is your intention with the other portion of the ditch? When do you anticipate you will complete the outstanding works?

Thanks,

Anne Molony

District Development Technician

Courtenay Area Office

Ph: 250-334-6969 Cell: 250-218-1605

Email: Anne.Molony@gov.bc.ca

Molony, Anne TRAN:EX

emailed copy of this document to Kellie Gillette, claims, on Feb. 13, 2015.

From: Dusty Silvester <s.22
Sent: Wednesday, February 11, 2015 10:36 AM
To: Molony, Anne TRAN:EX
Cc: 'ROBERT STEEN'
Subject: RE: Permit 2014-00402 - Timberlane Road
Attachments: PA160038.JPG

Anne,

As I believe you are aware, an undersized culvert was removed from the downstream section of a ditch along the west side of Timberlane Road and was treated with shot-rock armouring over geotextile in Dec. 2014. We recommended this approach to the landowner as there were flooding concerns identified that were affecting the neighbouring property to the east that appeared to be, in part, intensified by the presence of the undersized culvert. Following culvert removal the ditch was re-graded to match the downstream channel profile, which is protected under the SPEA of Morrison Creek and remains vegetated, as it appears to effectively convey flows through the ditch line. Shot-rock and geotextile were used in the downstream portion of the ditch line as the work was done during the winter (the timing is rationalized as emergency works to protect property) and efforts were needed to armour exposed soils to mitigate erosion and downstream sedimentation. During the progress of work in Dec. turbid water in the ditch was pumped to a nearby vegetated area for infiltration before release back to the Creek.

The upstream portion of the ditch fronting the subject property along Timberlane (see attached photo) still requires treatment and has been identified for being seeded with an appropriate grass seed and mulch mix. Seeding will be done this spring to ensure that the seeds will have the best opportunity for survival and to avoid being washed downstream by winter rains before germination can occur.

Please let me know if any further explanation is required. My company will be undertaking the seeding of the exposed ditchline, and if you like I can contact you when the work is complete: likely in April but timing is weather dependent.

Respectfully,

Dusty Silvester, R.B.Tech.

current ENVIRONMENTAL

Unit H - 244 4th St.
Courtenay, BC
V9N 1G6
P: (250) 871-1944
C: s.22
W: currentenvironmental.ca

From: Molony, Anne TRAN:EX [mailto:Anne.Molony@gov.bc.ca]
Sent: February-11-15 9:39 AM
To: 'Dusty Silvester (s.22
Subject: Permit 2014-00402 - Timberlane Road

Hi Dusty,

EDAS ENT'D

I received your message regarding Timberlane Road, can you please send me an email outlining what works are being completed and an approximate completion date so I can put a copy on the file.

Thanks,
Anne

Anne Molony
District Development Technician
Courtenay Area Office
Ph: 250-334-6969 Cell: 250-218-1605
Email: Anne.Molony@gov.bc.ca