



**REGIONAL DISTRICT OF BULKLEY-NECHAKO
SUPPLEMENTARY AGENDA**

Thursday, May 26, 2016

<u>PAGE NO.</u>	<u>ADMINISTRATION CORRESPONDENCE</u>	<u>ACTION</u>
2	Union of B.C. Municipalities – 2016/17 (Spring) Regional Community to Community Forum – Approval in Principle	Receive
	<u>CORRESPONDENCE</u>	
3-4	Patricia Jean Bekar Re: DVP A-05-16 7561466 Canada Inc. (HBH) Electoral Area "A" <i>(Please see pages 259-265 in May 26 2016 agenda)</i>	Receive
5-35	Replacement Hydrotechnical Assessment for 12852 Eagle Road Re: Floodplain Exemption A-07-16 Electoral Area "A" <i>(Please see pages 278-308 in May 26 2016 agenda)</i>	Receive
36-52	Memo Re: Covenant No. L16682 & No. K17309 Release Electoral Area "A"	Recommendation (Page 38)
	<u>NEW BUSINESS</u>	
	<u>ADJOURNMENT</u>	



**FIRST
NATIONS
SUMMIT**

**Regional Community
to Community Forum**

Administration provided
by UBCM and First
Nations Summit

Funding provided by the
Ministry of Community,
Sport & Cultural
Development

Please direct all
correspondence to:

Local Government House
525 Government Street
Victoria, BC, V8V 0A8

E-mail: lgps@ubcm.ca
Phone: (250) 356-2947

2

RECEIVED

MAY 24 2016

REGIONAL DISTRICT OF
BULKLEY NECHAKO

May 17, 2016

Corrine Swenson, Manager of Regional Economic Development
Regional District of Bulkley-Nechako
Box 820
Burns Lake, BC, V0J 1E0

**RE: 2016/17 (Spring) Regional Community to Community Forum –
Approval in Principle**

Dear Ms. Swenson,

Thank you for submitting an application for the 2016/17 (Spring) Community to Community (C2C) forum program. We have reviewed your submission and are pleased to advise you that your request has been approved in principle pending receipt of outstanding items.

To date, the date of the proposed event has not been forwarded to UBCM.

Upon satisfactory receipt of this outstanding item your application will be eligible for final approval and 50% of the grant will be released. The remainder of the grant will be available after the event is completed and a final report and financial summary has been received.

I would like to congratulate you for responding to this opportunity to build relations with neighbouring First Nations and/or local governments and encourage you to complete your application as soon as possible.

If you have any questions, please feel free to contact Local Government Program Services at (250) 356-2947 or lgps@ubcm.ca.

Sincerely,

Danyta Welch
Policy & Programs Officer

Patricia Jean Bekar

Page 1 of 2 pages

May 24, 2016 .

Regional District of Bulkley Nechako
PO Box 820,
Burns Lake, BC V0J 1E0

Dear Sir/Madam:

Re: Development Variance Permit Application

Further to your letter dated May 11, 2016 I confirm that I am the owner of District Lot 8019. With respect to the application to be heard on Thursday, May 26th, 2016 and I wish to OPPOSE the application on the following concerns:-

(a) This entire property is a viable valuable parcel of ranch land and you are proposing to reduce the minimum parcel area requirement of 16 ha of the Ag1 Zone to 8 ha without even consulting the Agricultural Land Commission. I am sure the ALR would want to know that the current owner of this property is trying to subdivide this property by means of small derivations from the local zoning thus circumventing the need to involve the Agricultural Land Commission until the damage is done and he has his mini playground ready for the pleasure of the rich who want to use their guns, recreational vehicles and aircraft to destroy this once vibrant and productive ranch and creating a noise issue for the surrounding neighbours.

(b) Why is this proposed as a "private" road? You can guarantee that these roads will be used by the public even "in error" as the general public will randomly "explore" the area once the road is in place and thus the liability issue should still paramount. Even if the "easements" or "private road" are noted on the property who is going to manage and ensure that insurance is in place and the basic safety standards are met. What if an "explorer" gets killed on those roads? Private property signs just add incentive to the young and restless to see how far onto the property they can get without getting caught.

(c) If a road has to be built then why not a "public" road built to the standards of a public road and thus at least providing some guarantee that the roads will be safe for whomever is travelling on them.

(d) Once the access is in place – be it private or public – there will be more housing development

on each lot and eventually those lots will be sold as individual lots. If not by the current owner then by his heirs.

(e) The creation of a road through or to each parcel also leads to an application down the road for further subdivision of the lots since a road through the lots have created a "natural" boundary for a subdivision – especially right through the middle of District Lot 6661 thus further destroying this valuable ranchland.

(f) There is currently a public access road through the top two parcels of land. **It is of paramount importance that any future development of these two properties NOT delete this road** as it is the only real access to my property at District Lot 8019 and to the landlocked Block C of District Lot 956. **Since there is already a provision for that public road** in place then why not expand on that road for the benefit of the other properties. A southerly turn at the property line between the two top properties would create a straight through access to all the other properties- all the current owner would need to do is connect Jolleymore Road through the northerly boundary of District Lot 6661 - thus eliminating the needs to go through the Middle of District Lot 6661 and preserve some use of that parcel of property. This would also limit the need for potential further division of the lots by way of the "proposed private" roads and yet give the access to the other properties as a public road which then meets the safety standards that should be required anytime that development is intended.

(g) If you allow this property variation and the idea of "private" roads to several parcels of property then you would have to, in the spirit of fair play, open the door for all other ranch lands in the area to circumvent our Agricultural Land Commission by way of making small changes that eventually lead to the demolition of all our ranch land and create "inadvertent subdivisions".

In conclusion the idea of private road access to these lots **IS NOT REQUIRED** as it would be less expensive and less hazardous to the general public to use the existing public road already in effect and it would minimize the potential for further subdivision of these parcels as the new public road could traverse the property lines between all the lots thus preserving some idea that these lots could still be used as farms (unfortunately not a ranch) instead of playgrounds that eventually lead to further subdivision.

Thank you for allowing me an opportunity to protect MY ranchland investment for my family.



PATRICIA JEAN BEKAR

Report on

Hydrotechnical Assessment Telkwa River for Lot 2, Eagle Road Telkwa, BC

Prepared for
Jason and Laura Schreiber
For Submission to the Regional District of Bulkley Nechako

McElhanney Consulting Services Ltd.
www.mcelhanney.com

Bill Cheung, P.Eng, Project Manager
778-693-2200 | bcheung@mcelhanney.com

Revised May 20, 2016





Report on

Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

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1 INTRODUCTION

McElhanney Consulting Services Ltd. has been retained by Jason and Laura Schreiber to prepare a hydrotechnical assessment of the Telkwa River and overall floodplain recommendations for their property at Lot 2 Eagle Road in Telkwa, BC.



Figure 1: Location Plan

2 SCOPE OF WORK

2.1 GENERAL

The scope of work for this project is based on discussion with the BC Ministry of Transportation and Infrastructure and the Regional District of Bulkley Nechako. Also, based on the APEGBC document “Professional Practice Guidelines – Legislated Flood Assessments in a Changing Climate in BC” the assessment carried out in this report is classified as a Class 1 Assessment. The scope of work included the following:

1. Topographic and bathymetric survey of the Telkwa River in the vicinity of the property.
2. Site visit by hydrotechnical engineer.
3. Review of the available hydrological and climate information.
4. Review of climate change parameters.
5. Estimation of a 1 in 200 year design return period flood for the Telkwa River at the project location.
6. Estimation of design water levels based on hydraulic modelling.
7. Review of local geomorphology of the Telkwa River.
8. Recommendations for house location and elevation, septic system location and mitigative methods for addressing high water levels.

3 HYDROLOGY

3.1 SITE LOCATION AND HYDROLOGIC REGIME

The Schreiber Lot site is located on the Telkwa River, approximately 8 km southwest of Telkwa, BC. At the site location, the Telkwa River drains an area of 993 km² (Figure 1). The Water Survey of Canada (WSC) operates a stream gauge on the Telkwa River, located 23 km upstream of the Schreiber Lot (08EE020; Telkwa River below Tsai Creek), which drains an area of 367 km². Tributary contributions from Goathorn Creek (which joins the Telkwa downstream of the site) are also monitored by the WSC (08EE008; Goathorn Creek near Telkwa).



Figure 2: Drainage area of the Telkwa River upstream of the Schreiber Lot.

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Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

Analysis of peak flows at 08EE020 indicates that annual peak flows for the Telkwa River below Tsai Creek occur predominantly during the spring, associated with snowmelt events. In the 35-year record of annual peak flows, 8 peaks occurred in the fall/winter storm season, driven by rainfall or rain-on-snow events. These fall peaks tend to be quite large, indeed the three largest peak flows recorded for 08EE020 occurred in the fall. Similarly at 08EE008, 8 of 50 peak flow events have been recorded in the fall, though these are not as extreme relative to their springtime counterparts as they are at 08EE020.

3.2 HYDROLOGIC ANALYSIS AND DESIGN FLOWS

Two different methods were used to determine the magnitude of floods with return periods of 200, 10, and 2 years. The first method is a regional analysis, which seeks to derive a regional relationship of the form $Q_{Tr} = a * Area^b$, where Q_{Tr} is the flood magnitude corresponding to a return period of Tr , $Area$ is the drainage area of the stream, and a and b are regression parameters estimated from values of Q_{Tr} and $Area$ of gauges in the vicinity of the study area. The gauges used for regional analysis for the Telkwa River at Schreiber Lot are described in Table 1.

Table 1: WSC Gauges used in regional analysis for determining design flows for the Telkwa River at Schreiber Lot.

WSC Station ID	Name	Drainage Area (km ²)	Years of Record	Hydrologic Regime
08EE008	Goathorn Creek near Telkwa	125	50	8 fall peaks 42 spring peaks
08EE012	Simpson Creek at the mouth	13.2	36	5 fall peaks 31 spring peaks
08EE020	Telkwa River below Tsai Creek	367	34	8 fall peaks 27 spring peaks
08E8004	Kispiox River near Hazelton	1880	48	8 fall peaks 48 spring peaks
08ED004	Thautil Corner Creek near Morice Lake	4.22	13	1 fall peak 13 spring peaks

The second method assumes that tributary contributions to the Telkwa River downstream of 08EE020 can be accurately represented by flows from 08EE008, which, based on a survey of drainage basin topography downstream of 08EE020, appears to be reasonable.

Flood magnitudes for the 200, 10, and 2-year return periods were estimated for each gauge in Table 1 by fitting a Log-Pearson Type 3 distribution to each peak flow record (using the HydroTools Excel add-in, <http://www.dimensionengine.com/excel/hydrotools/>). A mixed-population analysis was carried out for

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all gauges except for 08ED004. In mixed-population analysis, each year's peak flow can be thought of as the result of randomly selecting a population (i.e., spring snowmelt floods vs. fall/winter storm floods), then randomly selecting a particular flood magnitude from that population. The probability of exceeding any particular flood volume (which is the inverse of the flood's return period) can be determined by combining the conditional probabilities of the flood volumes in each population, i.e.,

$$P\{F > x\} = P\{F > x \mid F \text{ is rainfall-driven}\} * P\{F \text{ is rainfall-driven}\} + P\{F > x \mid F \text{ is snowmelt-driven}\} * P\{F \text{ is snowmelt-driven}\},$$

Where F is the annual flood, and x is a threshold flood magnitude.

Seasonal maximum flows for the four gauges with mixed peaks were picked out from their daily flow records (i.e., for each year of record, the maximum daily spring flow and maximum daily fall flow were picked out). These were then converted to seasonal peak flows by applying a peaking factor derived from years of coincident annual maximum and annual peak flow records. In practice, the magnitude of each gauge's annual peak flow for each return period, T_r , was estimated by varying x in the above equation until $P\{F > x\}$ was equal to $1/T_r$.

Regional analysis results for the 200-year peak flows are shown in Figure 3. Regression parameters for each return period are shown in Table 2, along with the flows they predict for the Telkwa River at Schreiber Lot.

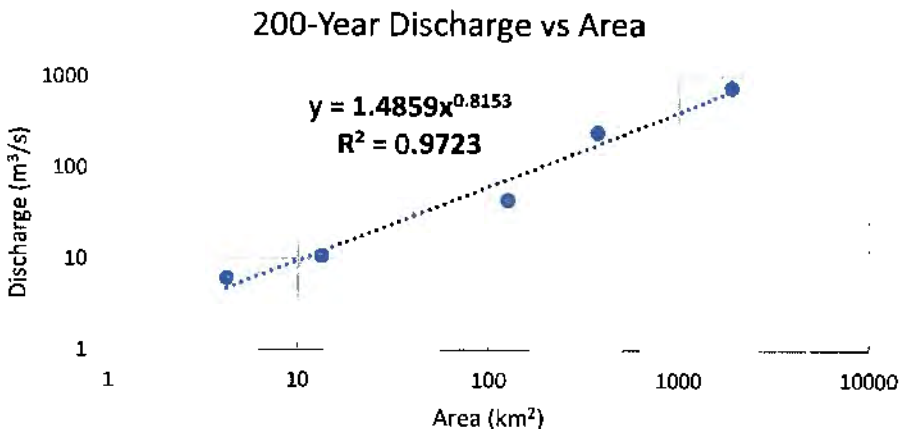


Figure 3: Regional analysis results for the 200-year peak flow event.

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The second method takes QTr for 08EE020 and adds to it QTr for 08EE008 after an adjustment for additional drainage area (a flow per unit area was calculated for 08EE008 then multiplied by the drainage area between 08EE020 and the Schreiber Lot, which is 626 km² (993 km² – 367 km²). These results are also shown in Table 2. Flows calculated using this method are 12-17% larger than those calculated from regional analysis. These flows were also calculated for a location downstream of the Schreiber Lot where previous floodplain mapping had been carried out in 1984. Drainage area upstream of cross-section 12 in this floodplain map was estimated at 1,203 km². Peak flows for this location are given in Table 2 in parentheses.

Table 2: Peak flows predicted for the Telkwa River at Schreiber Lot by two different methods. Regional analysis results are calculated from the equation $QTr = a * Area^b$, where the Area for this location is 993 km².

Return Period (Tr)	Regional Analysis			Area-weighting of 08EE020 and 08EE008
	a	b	Predicted Peak Flow (m ³ /s)	Predicted Peak Flow (m ³ /s)
200	1.49	.82	412 (482)	474 (549)
10	0.85	0.79	201 (234)	235 (277)
2	0.50	0.80	130 (151)	146 (170)

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A site visit was conducted to the Schreiber property on October 21, 2015 by Bill Cheung accompanied by Jason Schreiber. General site conditions were noted and photo documentation is provided below.

The site lies in the floodplain of the Telkwa River, with the proposed building site approximately 2 m higher than the water level at the time of the site visit. The site itself shows no evidence of erosive flows, although it is likely that during extreme high flow events there is likely inundation of the property. There is no evidence on the property of regular flooding events. The extreme flood limits are likely the back side of the property as it slopes back up toward the Coalmine Road.



Figure 4 - Telkwa River at Schreiber Property - looking upstream. Note that the sandbar at the far left is not the height of land of the property.

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Figure 5 - Looking back towards the property. Sandbar shown in the previous figure can be seen in the foreground, with additional bank height to the building site location.



Figure 6 - Looking across the Telkwa River at the opposite bank

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Figure 7 - Right bank of Telkwa River at Schreiber Property - looking downstream



Figure 8 - Standing at ground elevation, looking toward the building site in the background.

5 CLIMATE CHANGE ANALYSIS

Climate change is expected to have significant impacts on water resources in BC. The Pacific Climate Impacts Consortium (PCIC) provides a variety of tools for conducting climate change analysis within British Columbia. Here, we examine the data provided by PCIC's Regional Analysis Tool (RAT; <https://www.pacificclimate.org/analysis-tools/regional-analysis-tool>) for a custom region covering the Telkwa River drainage basin. Consensus (median) results from an ensemble of global climate models (GCMs) incorporating a range of different potential future emissions scenarios were obtained for precipitation, snowmelt, and snowfall.

All values provided by the RAT were converted into monthly-averaged rates of water input per day (mm/day), averaged over the basin. Daily liquid precipitation rates were calculated by subtracting snowfall from precipitation. Total water availability in the basin was calculated by summing snowmelt and liquid precipitation rates for each month. These monthly-averaged daily rates of water input under future climate conditions were then compared to historic rates of water input to derive relative changes in these amounts. The actual daily rates were not used in any calculations.

Table 3: Changes to total water availability for runoff (and for infiltration and evapotranspiration) derived from climate variables from the PCIC Regional Analysis Tool averaged over the Telkwa River drainage basin.

Table 3 shows the changes in total water available for surface runoff within the Skeena River basin for the 2050s and 2080s (relative to baseline 1961-1990 climatological values). This total water availability for runoff accounts only for projected changes in water sources (snowmelt and liquid precipitation) and ignores sinks (evapotranspiration). Changes to infiltration of water into soils and subsequently into the groundwater system are also not included.

Month/Season	Change in Water Availability (%) (Snowmelt + liquid precipitation)	
	2050s	2080s
January	84	120
February	79	121
March	36	69
April	11	2
May	-21	-35
June	-26	-34
July	-2	-4
August	-1	-4
September	15	21
October	33	46
November	40	58
December	63	102

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According to the ensemble GCM output, peak springtime water availability has historically occurred in May, and this continues through the 2080s, with peak water availability dropping by 21% and 35% relative to historic values. Fall peak water availability continues to occur in October, with increases of 33% and 46%. Trends in peak streamflows for the Telkwa River will depend on whether increases to fall peaks are adequate to compensate for decreases in spring peaks, resulting in a shift to a more storm-dominated peak flow regime (likely with higher, flashier peaks).

It is critical to note that a 33% increase in fall precipitation rates will not translate to a 33% increase in peak flows. Similarly, a 21% decrease in spring water availability will not necessarily lead to a 21% decrease in peak flows. Since these are derived from monthly-averaged water availability, they tell us nothing about the frequency of precipitation events, for example. A 33% increase in total precipitation volume may indicate that storms are arriving more frequently and that the intensity of these events is increasing by significantly less than 33%. Also, we have not accounted for any changes in water sinks such as evapotranspiration, as this information is not available from the PCIC RAT.

An analysis similar to the one conducted here was done for a gauge in the Fraser River Basin on the Salmon River near Prince George (08KC001). For this particular gauge, PCIC has available daily streamflow projections driven by GCMs (PCIC Station Hydrologic Model Output; <https://www.pacificclimate.org/data/station-hydrologic-model-output>). Seasonal peaks were picked out of the daily flow projections, and monthly averaged flows were also computed. It was found that increases in monthly streamflow in both the fall and spring were approximately equal to one half of the increases in monthly-averaged availability of water, but that changes to peak flow were roughly one-third of this magnitude. This would suggest likely decreases to peak spring flows for the Telkwa River at Schreiber Lot of 7% (2050s) and 11% (2080s), and increases to peak fall flows of 11% and 15%. While this is only based on the analysis of one station with available projected streamflow it may still serve as a useful adjustment for generating a likely future scenario.

Several different scenarios were evaluated to determine the sensitivity of peak flows in the Telkwa River to changes in climate variables, and to determine a likely range of possible future outcomes. A description of each scenario along with impacts to peak flows is presented in Table 4.

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Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

Table 4: Climate change scenarios evaluated for the Telkwa River at Schreiber Lot. Various combinations of changes to spring and fall peaks were evaluated to determine a range of likely outcomes.

Scenario	Changes Applied (for 2050s/2080s)	Rationale	2050s Impact	2080s Impact	
Sensitivity Analysis Scenarios	1	Spring: no change Fall: increase peaks by 11%/15%	Estimated changes to peak flows during the month of peak fall precipitation (October).	200-year: +11% 10-year: +1.8% 2-year: +0.1%	200-year: +13% 10-year: +2.4% 2-year: +0.5%
	2	Spring: decrease peaks by 7%/11% Fall: no change	Estimated changes to peak flows during the month of peak snowmelt (May).	200-year: +0.8% 10-year: -5.8% 2-year: -7.3%	200-year: -0.7% 10-year: -9.2% 2-year: -11%
	3	Spring: decrease peaks by 21%/35% Fall: increase peaks by 33%/46%	Projected changes to total water available in months of peak availability.	200-year: +42% 10-year: -0.4% 2-year: -17%	200-year: +74% 10-year: +14% 2-year: -21%
Refined (probable) Scenarios	4	Spring: decrease peaks by 10%/18% everywhere Fall: increase peaks by 16%/23%	Assume that projected monthly-averaged decreases in snowmelt rates are associated with fewer days of melt (and more days of zero melt) such that peak melt rates do not decrease as much as projected. Assume that increases to precipitation are associated with increased frequency of rainfall events (double frequency, halve magnitude).	200-year: +17% 10-year: -4.4% 2-year: -9.4%	200-year: +28% 10-year: -5.4% 2-year: -16%
	5	Spring: decrease peaks by 7%/11% Fall: increase peaks by 11%/15%	Adjustments to monthly changes based on analysis of peak flow projections at 08KC001.	200-year: +14% 10-year: -3.1% 2-year: -7.0%	200-year: +16% 10-year: -5.3% 2-year: -10%

Results of climate change analysis indicate that extreme peak flows (200-year return periods) can be expected to increase by approximately 15% by the 2050s and 20-30% by the 2080s. The lower peak flows (with return periods of 10 and 2 years) are expected to exhibit decreases similar in magnitude to those of the springtime peak flows. The increase in large peak flows is associated with the shift in

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hydrologic regime from mostly snowmelt-driven peak flows in the present climate to mostly rainfall-driven flows in the future. The hydrologic record at 08EE020 clearly indicates that current fall peaks, while relatively rare, are quite extreme, so even a small increase in the frequency of fall peaks occurring as annual peaks will result in increases to these peak flows. The lowest peaks (2-year return period or less) will continue to be associated mostly with springtime peak flow events or relatively minor fall precipitation events. The 10-year peaks exhibit a smaller increase than the 2-year events, as these will be comprised of a blend of springtime and fall/winter peak events.

6 HEC-RAS ANALYSIS

Four bathymetric cross sections of the Telkwa River were combined with topographic survey of the property to create cross sections that could be used in the US Army Corp of Engineers HEC-RAS (Hydrologic Engineering Centre River Analysis System) modelling program. A site plan has been included in Appendix A. This software is industry-standard for analysis of floodplains and 1 dimensional water surface profiles. The cross sections cover an overall length of approximately 130 metres of the Telkwa River, with the longest cross section having a length of 340 metres.

Each cross section is shown on the following pages with stationing references within the HEC-RAS program.

Other information shown on the cross section plots include the variance of the stream and overbank roughness coefficients, or Manning's "n" values across the channel. Starting at Section 1000, it was observed that a side channel was present on the left bank of the main channel (looking downstream). The Manning's "n" for the main channel was set at 0.030 while the left overbank and right overbank values were set at 0.050 and 0.10 respectively. These reflect the size of material found in the river channel as well as the level of growth of vegetation on the overbanks.

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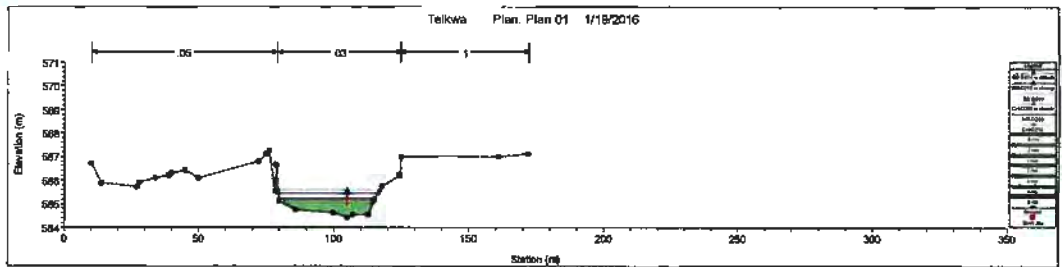


Figure 9: Cross Section 1000 - Furthest Downstream

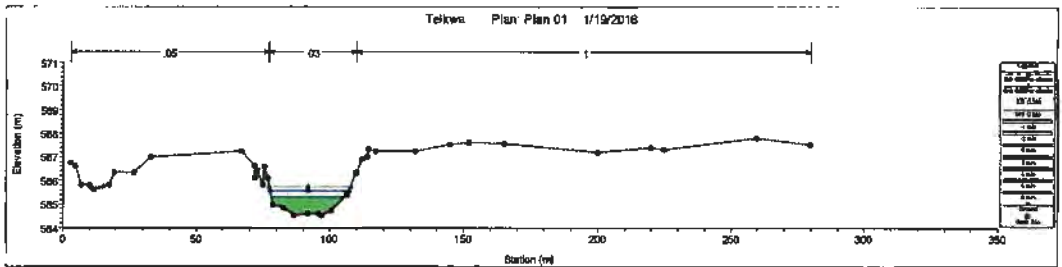


Figure 10: Cross Section 1048

Cross Section 1048 is the cross section at the proposed house location. The house is expected to be located at approximately Station 155, 30 m away from the top of bank of the Telkwa River. Uncategorized base flow of 20 cu.m/s shown on cross sections

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Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

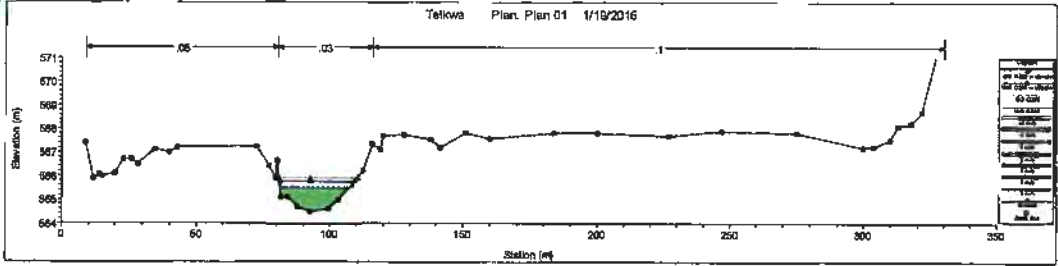


Figure 11 Cross Section 1096

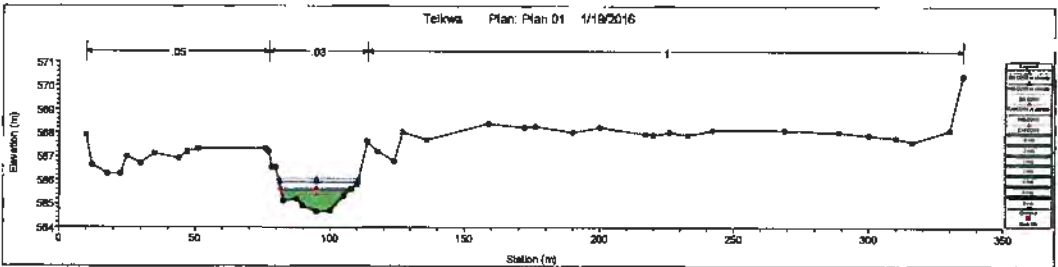
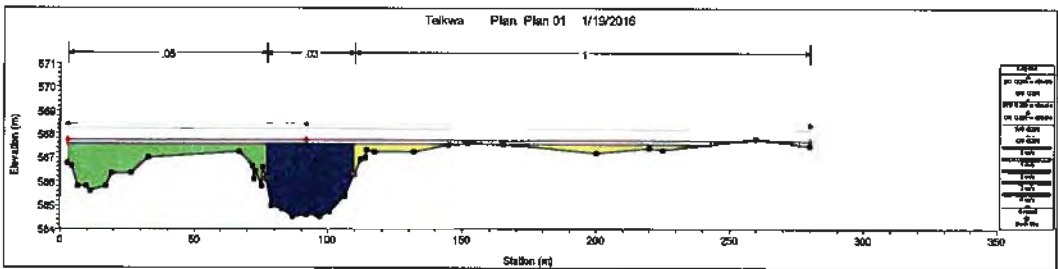
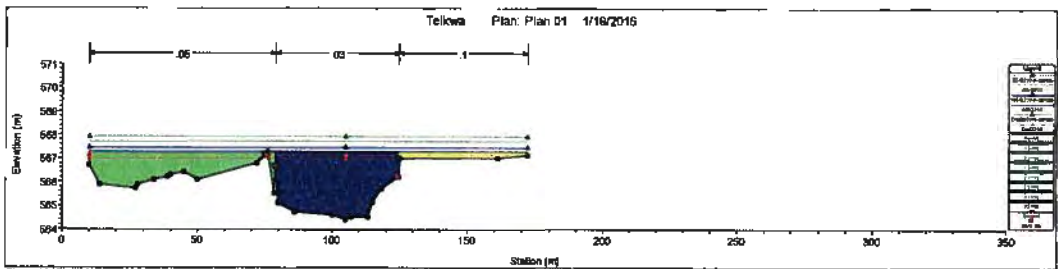


Figure 12 Cross Section 1130

Based on the hydrology prepared in the previous section, a 1 in 200 year design flow of 412 cu.m/s was selected for the Telkwa River. A second design flow of 478 cu.m/s, representing the effect of 18% increased flow due to climate change as stated in Table 4 Scenario 5.

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The following cross sections show the calculated water surface elevations at the four locations. The different colours represent variance in velocities across the entire channel, with the higher velocities shown in the main channel and lower velocities in the overbank areas.



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Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

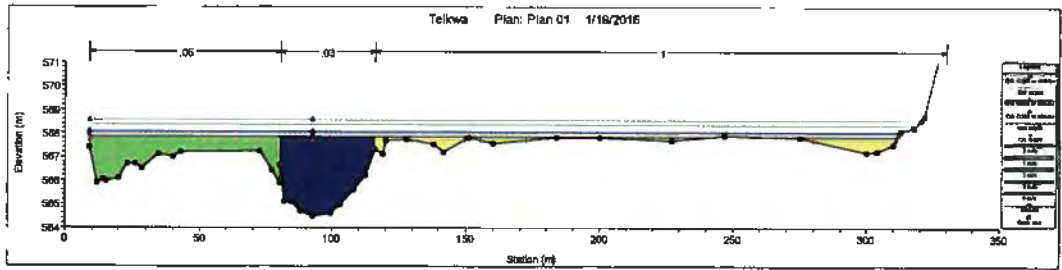


Figure 15: Cross Section 1086 at 412 and 478 cu.m/s

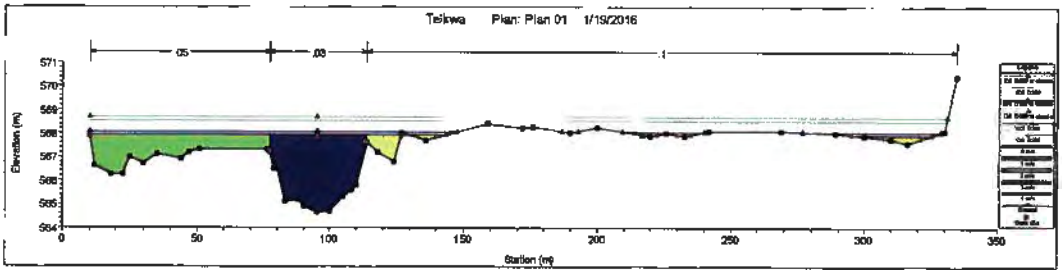


Figure 16: Cross Section 1130 at 412 and 478 cu.m/s

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Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

In addition to the cross section plots shown above, detailed information at each cross section is available as program output from HEC-RAS.

The following table shows the water surface elevations and channel velocities for each of the cross sections. W.S. Elevation is the Water Surface elevation for the cross section.

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
1	1130	Q200	412.00	564.65	567.93	567.80	568.49	0.003537	3.61	170.46	167.02	0.73
1	1130	Q200 w climate	478.00	564.65	568.06	567.94	568.69	0.003815	3.88	195.97	226.87	0.76
1	1096	Q200	412.00	564.50	567.87	567.68	568.36	0.002984	3.44	206.37	290.38	0.67
1	1096	Q200 w climate	478.00	564.50	568.04	567.92	568.53	0.002906	3.54	258.74	303.70	0.67
1	1048	Q200	412.00	564.55	567.56	567.56	568.18	0.003774	3.85	178.12	228.72	0.76
1	1048	Q200 w climate	478.00	564.55	567.74	567.74	568.36	0.003636	3.96	223.89	268.56	0.75
1	1000	Q200	412.00	564.40	567.26	566.94	567.68	0.003001	3.16	187.12	162.00	0.66
1	1000	Q200 w climate	478.00	564.40	567.42	567.13	567.88	0.003005	3.31	214.00	162.00	0.67

Figure 17: HEC-RAS Summary Table

Also, further detail can be shown for the cross section that is located at the house location.

Plan: Plan 01 Telkwa 1 RS: 1048 Profile: Q200 w climate					
E.G. Elev (m)	568.36	Element	Left OB	Channel	Right OB
Vel Head (m)	0.63	Wt n-Val	0.050	0.030	0.100
W.S. Elev (m)	567.74	Reach Len. (m)	48.00	48.00	48.00
Crit W.S. (m)	567.74	Flow Area (m2)	78.89	92.40	52.60
E.G. Slope (m/m)	0.003636	Area (m2)	78.89	92.40	52.60
Q Total (m3/s)	478.00	Flow (m3/s)	97.17	365.45	15.38
Top Width (m)	268.56	Top Width (m)	74.00	33.00	161.56
Vel Total (m/s)	2.14	Avg. Vel. (m/s)	1.23	3.96	0.29
Max Chl Dpth (m)	3.19	Hydr. Depth (m)	1.07	2.80	0.33
Conv. Total (m3/s)	7927.6	Conv. (m3/s)	1611.5	6061.0	255.1
Length Wtd. (m)	48.00	Wetted Per. (m)	76.42	33.47	162.07
Min Ch El (m)	564.55	Shear (N/m2)	36.80	98.42	11.57
Alpha	2.69	Stream Power (N/m s)	13405.80	0.00	0.00
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	3.83	4.94	1.74
C & E Loss (m)	0.05	Cum SA (1000 m2)	3.43	1.88	5.02

Figure 18. Cross Section details at Station 1048 for flow including climate change (478 cu.m/s)

Report on

Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

This table shows that the main channel conveys the majority of the flow during a flood (365 cu.m/s) , with the left overbank carrying 97 cu.m/s and only 15 cu.m/s flooding over the right bank. Also, the velocity on the right overbank is expected to be 0.29 m/s.

At Cross Section 1048, the expected water surface elevation at the Q200 plus climate change flow is 567.74 m, which is slightly higher than the existing ground elevation of 567.62 m at one of the higher locations near the proposed building site. This elevation of 567.74 m is the Designated Flood Level for this property.

7 REVIEW OF CHANNEL GEOMORPHOLOGY

One of the important aspects to consider when reviewing a potential building site is not only to review the water levels velocities during peak flood situations, but to assess the potential for lateral movement of the channel due to aggrading bedload, log jams, bank erosion etc. The science of the study of the configuration of landforms and the development of topography is called geomorphology.



Figure 19: Site Plan showing old channel across from property

Report on

Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

The Telkwa River in the vicinity of Lot 2 is relatively well-confined by its banks, and also has some channels that are activated during high flow, as can be seen in Figure 14. These side channels relieve the pressure of the main channel during flood events. As well, the banks of the Telkwa River remain well-vegetated and the channel itself does not show evidence of large bedload movement events or debris flows.

The potential for the Telkwa River to jump its banks and flow outside its primary channel is also a concern that needed assessment. At location "A" shown in Figure 14, a site reconnaissance carried out during the site visit confirmed that there is sufficient height of land at this location such that the Telkwa River could not breach its right bank during high water, and flow is expected to continue in the main channel. Typically these locations on the outside of bends are where new channels develop during high water, but at this location there is a low possibility of this occurring. At the cross section through the proposed house location, the elevation of the natural boundary of the Telkwa River as determined by measurement of the average rooting depth along the river is at elevation 566.86m. With a 1 in 200 year water surface elevation of 567.74, the estimated depth above the natural boundary during a flood event is 0.88m. Including the freeboard recommendation of 0.6 m, the recommended building elevation will be 1.48m above the natural boundary.

The Lot 2 property is also located on the inside of the bend, which tends to have lower bank velocities and therefore a lower chance of bank erosion.

8 MITIGATION RECOMMENDATIONS

The following recommendations are based on the 1 in 200 year flow including climate change analysis.

1. The flood construction level (FCL) for this property should be set at an elevation of 568.34, which is the Designated Flood Level plus an additional 0.6 m of freeboard. Main floor elevations, septic system manholes, perforated pipe and all electrical and mechanical devices shall be located above this elevation.
2. Buildings on the property should not be located closer than 30 m from the top of bank of the Telkwa River.

Report on**Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road**

3. Buildings shall be raised to the FCL using either engineered fill or structural means, and shall comply with the FCL determined in this report. Should engineered fill be the means used to raise the building footprint, a bearing capacity and general global stability check should be undertaken to ensure that placement of fill will not induce instability. If structural means are to be used (ie. Concrete foundation walls etc.) then this would not be required.
4. The property owners will be responsible to apply for an "Application for Amendment to a Plan or Bylaw, Permit or Floodplain Exemption" from the RDBN.

Report on

Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

9 CLOSURE

McElhanney Consulting Services Ltd. (McElhanney) has prepared this document in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering and science professions currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this document. No warranty, expressed or implied, is made.

The required "APEGBC Flood Hazard and Risk Assurance Statement" has been included as Appendix B of this document.

This document, including all text, data, tables, plans, figures, drawings and other documents contained herein, has been prepared by McElhanney for the sole benefit of Jason and Laura Schreiber and BC MOT and RDBN for assessment purposes for Lot 2, Eagle Road, Telkwa, BC.

We certify that the land located at **Lot 2, District 221, Range 5, Coast District, Plan 10623** may be used safely for the purpose of a **Residential Single-Family Dwelling** without an undue risk of hazards.

We also acknowledge that the Regional District of Bulkley-Nechako may rely upon the engineer's recommendations for development and use of the property when making a decision on any approvals related to the development or use of the property.

It represents McElhanney's professional judgement based on the knowledge and information available at the time of completion. McElhanney is not responsible for unauthorized use or modification of this document. All third parties relying on this document do so at their own risk.

Prepared by:

McElhanney Consulting Services Ltd.



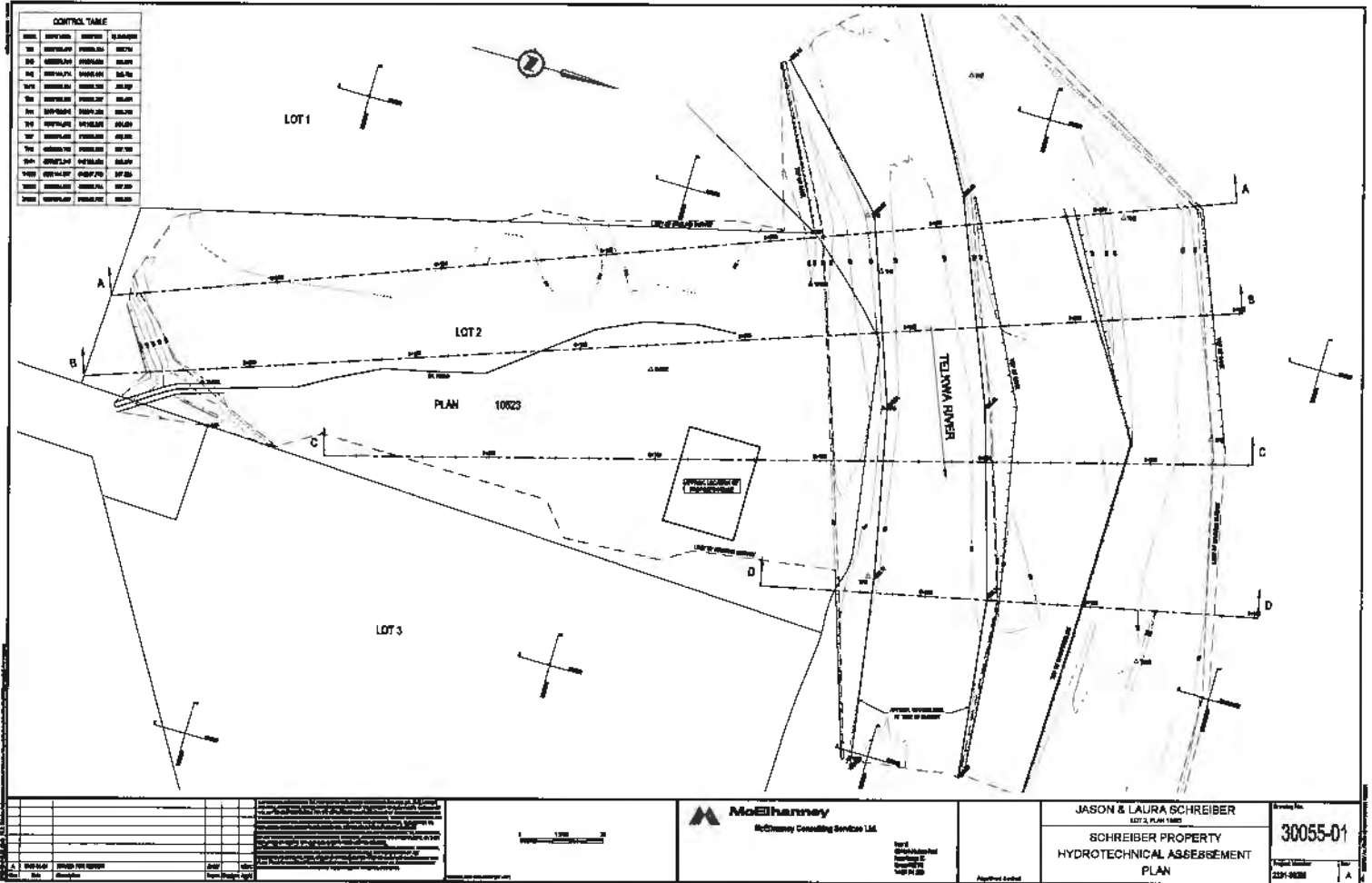
 William Cheung, P.Eng.
 Senior Hydrotechnical Engineer

Report on

Hydrotechnical Assessment – Telkwa River for Lot 2 Eagle Road

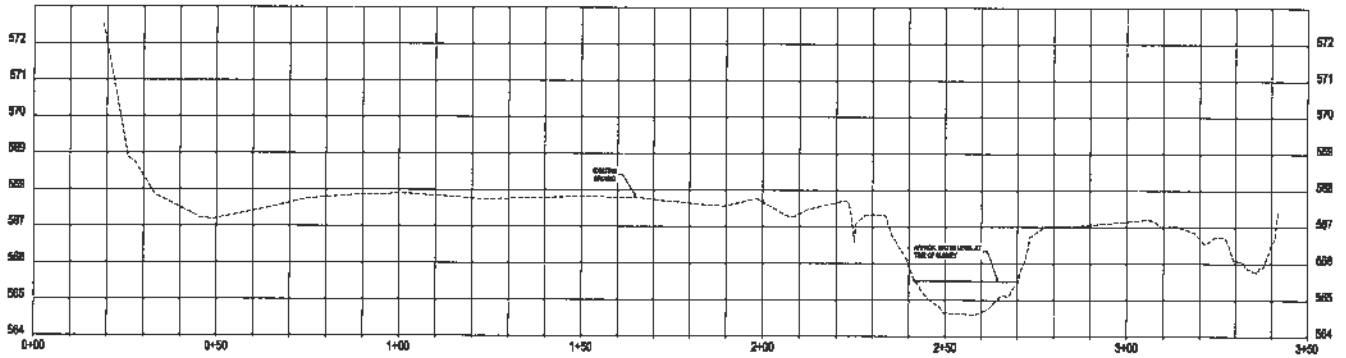
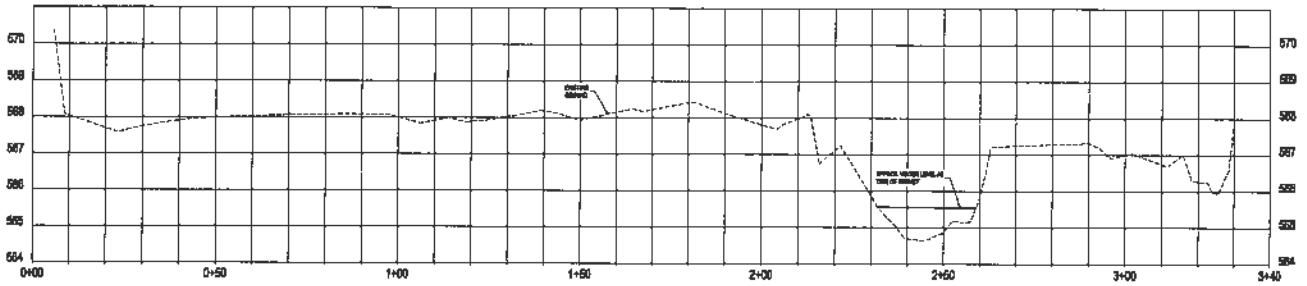
APPENDIX A – SITE PLAN





CONTROL TABLE			
1001	1002	1003	1004
1005	1006	1007	1008
1009	1010	1011	1012
1013	1014	1015	1016
1017	1018	1019	1020
1021	1022	1023	1024
1025	1026	1027	1028
1029	1030	1031	1032
1033	1034	1035	1036
1037	1038	1039	1040
1041	1042	1043	1044
1045	1046	1047	1048
1049	1050	1051	1052
1053	1054	1055	1056
1057	1058	1059	1060
1061	1062	1063	1064
1065	1066	1067	1068
1069	1070	1071	1072
1073	1074	1075	1076
1077	1078	1079	1080
1081	1082	1083	1084
1085	1086	1087	1088
1089	1090	1091	1092
1093	1094	1095	1096
1097	1098	1099	1100

<p>McElhanney McElhanney Consulting Services Ltd.</p>	<p>JASON & LAURA SCHREIBER LOT 2, PLAN 10823</p>	<p>30055-01</p>
	<p>SCHREIBER PROPERTY HYDROTECHNICAL ASSESSMENT PLAN</p>	<p>Project Number: 2391-0038</p>



NO.	REVISION	DATE
1	ISSUED FOR REVIEW	2024
2	ISSUED FOR REVIEW	2024

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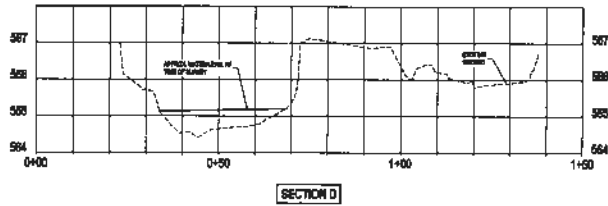
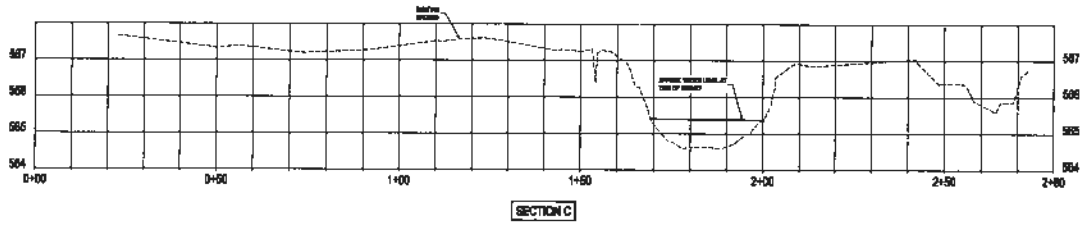


MCDERMID
 Consulting Services Ltd.
 100 St. Andrew Street
 Vancouver, BC
 V6B 1G8

Approved:

JASON & LAURA SCHREIBER
 5173 FIVE WAYS
 SCHREIBER PROPERTY
 HYDROTECHNICAL ASSESSMENT
 PROFILES

Project No.
30055-02
 Page Number
 2314-0085



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McIlhenny
 Consulting Services Ltd.
 100-1000 Highway 101
 Suite 101
 St. John's, NL
 A1B 1X6

Approval: _____
 Date: _____

JASON & LAURA SCHREIBER
 LOT 2, PLAN 1802
 SCHREIBER PROPERTY
 HYDROTECHNICAL ASSESSMENT
 PROFILES

Drawing No. **30055-03**
 Project Number: 231-0002
 Scale: A

APPENDIX B – FLOOD HAZARD AND RISK ASSURANCE STATEMENT



APPENDIX J: FLOOD HAZARD AND RISK ASSURANCE STATEMENT

Note This Statement is to be read and completed in conjunction with the "APEGBC Professional Practice Guidelines - Legislated Flood Assessments in a Changing Climate, March 2012 ("APEGBC Guidelines") and is to be provided for flood assessments for the purposes of the Land Title Act, Community Charter or the Local Government Act. Italicized words are defined in the APEGBC Guidelines.

To: The Approving Authority

Date: May 20, 2016

Regional District of Bulkley-Nechako

37 3rd Avenue PO Box 820 Burns Lake, BC V0J 1E0

Jurisdiction and address

With reference to (check one):

- Land Title Act (Section 86) – Subdivision Approval
- Local Government Act (Sections 919.1 and 920) – Development Permit
- Community Charter (Section 56) – Building Permit
- Local Government Act (Section 910) – Flood Plain Bylaw Variance
- Local Government Act (Section 524) – Flood Plain Bylaw Exemption

For the Property:

Lot 2, DL 221, Range 5, Coast District Plan 10623 (Lot 2 Eagle Road, Telkwa, BC)

Legal description and civic address of the Property

The undersigned hereby gives assurance that he/she is a *Qualified Professional* and is a *Professional Engineer* or *Professional Geoscientist*.

I have signed, sealed and dated, and thereby certified, the attached flood assessment report on the Property in accordance with the APEGBC Guidelines. That report must be read in conjunction with this Statement. In preparing that report I have:

Check to the left of applicable items

- 1. Collected and reviewed appropriate background information
- 2. Reviewed the proposed *residential development* on the Property
- 3. Conducted field work on and, if required, beyond the Property
- 4. Reported on the results of the field work on and, if required, beyond the Property
- 5. Considered any changed conditions on and, if required, beyond the Property
- 6. For a *flood hazard analysis* or *flood risk analysis* I have:
 - 6.1 reviewed and characterized, if appropriate, floods that may affect the Property
 - 6.2 estimated the *flood hazard* or *flood risk* on the property
 - 6.3 included (if appropriate) the effects of climate change and land use change
 - 6.4 identified existing and anticipated future *elements at risk* on and, if required, beyond the Property
 - 6.5 estimated the potential *consequences* to those *elements at risk*
- 7. Where the Approving Authority has adopted a specific level of *flood hazard* or *flood risk* tolerance or return period that is different from the standard 200-year return period design criteria⁽¹⁾, I have
 - 7.1 compared the level of *flood hazard* or *flood risk* tolerance adopted by the Approving Authority with the findings of my investigation
 - 7.2 made a finding on the level of *flood hazard* or *flood risk* tolerance on the Property based on the comparison
 - 7.3 made recommendations to reduce the *flood hazard* or *flood risk* on the Property

⁽¹⁾ *Flood Hazard Area Land Use Management Guidelines* published by the BC Ministry of Forests, Lands, and Natural Resource Operations and the 2009 publication *Subdivision Preliminary Layout Review – Natural Hazard Risk* published by the Ministry of Transportation and Public Infrastructure. It should be noted that the 200-year return period is a standard used typically for rivers and purely fluvial processes. For small creeks subject to debris floods and debris flows return periods are commonly applied that exceed 200 years. For life-threatening events including debris flows, the Ministry of Transportation and Public Infrastructure stipulates in their 2009 publication *Subdivision Preliminary Layout Review – Natural Hazard Risk* that a 10,000-year return period needs to be considered.

8. Where the Approving Authority has not adopted a level of flood risk or flood hazard tolerance I have:

- 8.1 described the method of flood hazard analysis or flood risk analysis used
- 8.2 referred to an appropriate and identified provincial or national guideline for level of flood hazard or flood risk
- 8.3 compared this guideline with the findings of my investigation
- 8.4 made a finding on the level of flood hazard or flood risk tolerance on the Property based on the comparison
- 8.5 made recommendations to reduce flood risks
- 9. Reported on the requirements for future inspections of the Property and recommended who should conduct those inspections.

Based on my comparison between

Check one

- the findings from the investigation and the adopted level of flood hazard or flood risk tolerance (Item 7.2 above)
- the appropriate and identified provincial or national guideline for level of flood hazard or flood risk tolerance (Item 8.4 above)

I hereby give my assurance that, based on the conditions contained in the attached flood assessment report,

Check one

- for subdivision approval, as required by the Land Title Act (Section 86), "that the land may be used safely for the use intended".

Check one

- with one or more recommended registered covenants.
- without any registered covenant.

- for a development permit, as required by the Local Government Act (Sections 919.1 and 920), my report will "assist the local government in determining what conditions or requirements under [Section 920] subsection (7.1) it will impose in the permit".

- for a building permit, as required by the Community Charter (Section 56), "the land may be used safely for the use intended".

Check one

- with one or more recommended registered covenants.
- without any registered covenant.

- for flood plain bylaw variance, as required by the Flood Hazard Area Land Use Management Guidelines associated with the Local Government Act (Section 910), "the development may occur safely".

- for flood plain bylaw exemption, as required by the Local Government Act (Section 524), "the land may be used safely for the use intended".

William Cheung, PEng

Name (print)

Signature

Unit 12, 556 North Nechako Road
Address

Prince George, BC V2K 1A1

778-693-2200
Telephone

May 20, 2016

Date



If the Qualified Professional is a member of a firm, complete the following.

I am a member of the firm McElhanney Consulting Services Ltd.
and I sign this letter on behalf of the firm. (Print name of firm)

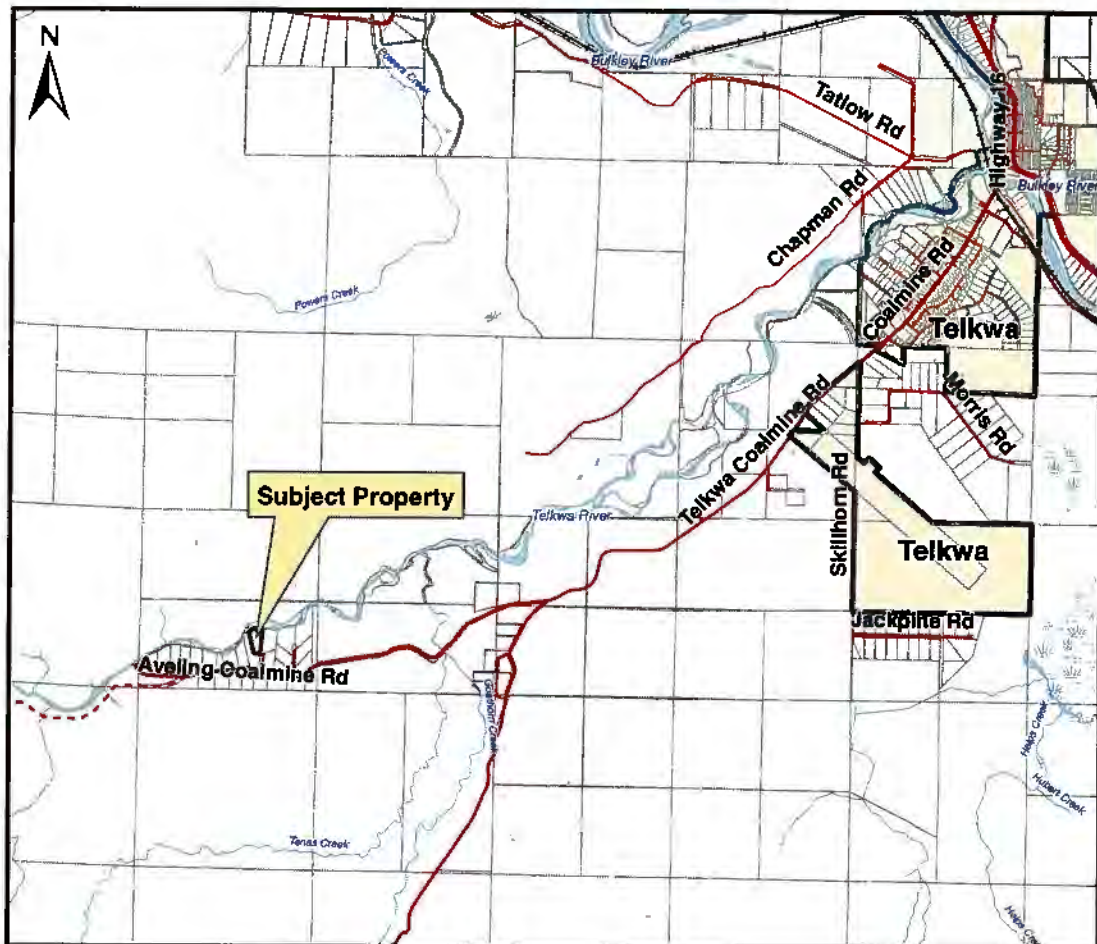
MEMORANDUM



To: Chairperson Miller and Board of Directors
 From: Jason Llewellyn, Director of Planning
 Date: May 24, 2016
 Re: Release of covenant document K17389 and L16682 (Electoral Area "A")

BACKGROUND:

This report is regarding the removal of Covenant No. K17389 and L16682, which is registered on title of the property legally described as Lot 2, District Lot 221, Page 5, Coast District, Plan 10623, located at 12852 Eagle Road.



The applicant has requested that they be allowed to remove the two subject covenants, which were required to be registered on title by the Subdivision Approving Officer as part of the subdivision approval process. The RDBN did not sign the covenants and, essentially,

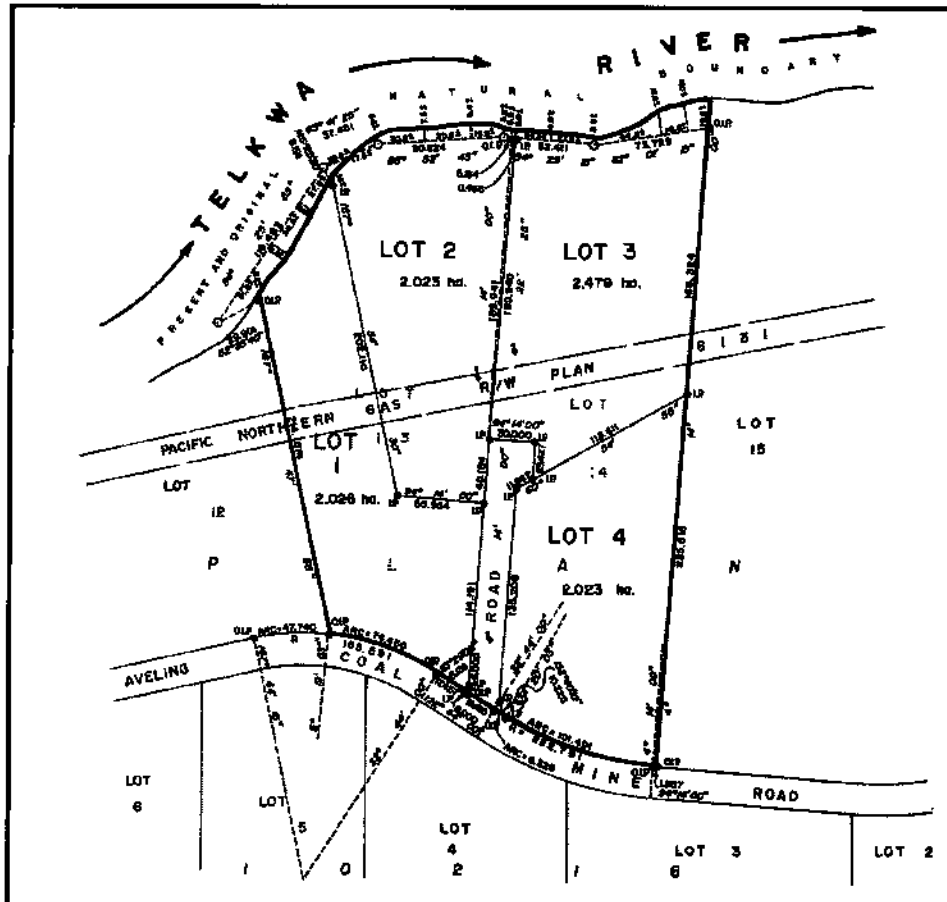
had nothing to do with their registration on title. However, the Province is allowed to make local governments party to a covenant without our approval.

The Subdivision Approving Officer has apparently agreed to discharge the covenants. However, it appears that the Land Title Office requires the RDBN's signature for the discharge of these covenants as we are named as a "grantee" or "covenantee". This report seeks the Board's approval for the RDBN to sign the covenant release documents.

This property is also the subject of floodplain exemption application A-07-16 on page 271-308 of the May 26th Board Agenda. Removing the covenants will allow the development of the property as proposed in the application.

COVENANT DETAILS:

Restrictive Covenant No. L16682 and No. K17309 (see attached) were registered on title in 1981 upon subdivision of District Lot 221. The covenants both restrict the construction of any structure less than 3.0 m above of the natural boundary of the Telkwa River and restricts development north of the southern border of the Pacific Northern Gas (PNG) Right-Of-Way (ROW) which is shown on the site plan below.



DISCUSSION:

It does not appear that the property can be developed with the existing covenants on title. As part of their decision to allow the release of the covenants the Subdivision Approving Officer required that the property owner have a professional complete a hydrotechnical assessment to assist in their evaluation of whether the covenants are necessary. Based on that professional assessment the Subdivision Approving Officer has indicated that they are prepared to agree to the discharge of the covenants.

It is again noted that the RDBN did not sign the covenants and, essentially, had nothing to do with their registration on title. However, the legislation that allows the Province to apply the covenant without the RDBN's approval does not allow the covenant to be removed without the RDBN's approval. Therefore, the Land Title Office requires the RDBN's signature for the discharge of these covenants.

Staff have no objection to the removal of Covenant No. K17389 and L16682

Recommendations

That the Regional District Board authorize the Board Chair to sign the documents necessary to release Covenant No. K17389 and L16682.

*Development Services – All Directors/Majority
(All Directors)*

Written by:



Jason Llewellyn
Director of Planning

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**LAND TITLE ACT
FORM C (Section 233) RELEASE
GENERAL INSTRUMENT - PART 1 Province of British Columbia**

Your electronic signature is a representation that you are a subscriber as defined by the Land Title Act, RSBC 1996 c.250, and that you have applied your electronic signature in accordance with Section 168.3, and a true copy, or a copy of that true copy, is in your possession.



1. APPLICATION: (Name, address, phone number of applicant, applicant's solicitor or agent)

T.E. HUDSON LAW CORP.

BOX 4617

250-847-8000

2805 DOHLER RD

SMITHERS

BC V0J2N0

Deduct LTSA Fees? Yes

2. PARCEL IDENTIFIER AND LEGAL DESCRIPTION OF LAND:
[PID] [LEGAL DESCRIPTION]

006-193-451

LOT 2 DISTRICT LOT 221 RANGE 5 COAST DISTRICT PLAN 10623

STC? YES

3. NATURE OF INTEREST BEING RELEASED

CHARGE NO.

ADDITIONAL INFORMATION

Covenant

K17389

Covenant

L16682

4. TERMS

The charge described in item 3 is released or discharged as a charge on the land described in item 2.

5. TRANSFEROR(S):

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA THE REGIONAL DISTRICT OF BULKLEY-NECHAKO

6. TRANSFEREE(S): (including postal address(es) and postal code(s))

Registered owner

7. ADDITIONAL OR MODIFIED TERMS:

8. EXECUTION(S): This instrument creates, assigns, modifies, enlarges, discharges or governs the priority of the interest(s) described in Item 3 and the Transferor(s) and every other signatory agree to be bound by this instrument, and acknowledge(s) receipt of a true copy of the filed standard charge terms, if any.

Officer Signature(s)

Execution Date

Transferor(s) Signature(s)

Kevin Campbell McGowan

Commissioner for Taking Affidavits in British Columbia

360-1011 4th Ave
Prince George, BC
V2L 3H9

Y	M	D
16	05	04

Her Majesty the Queen in right of the Province of BC the Regional District of Bulkley-Nechako by it's authorized signatory Michelle Boudreau, Provincial Approving Officer

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the Evidence Act, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the Land Title Act as they pertain to the execution of this instrument.

LAND TITLE ACT
FORM D
EXECUTIONS CONTINUED

Officer Signature(s)

Commissioner for Taking Affidavits in British Columbia

Execution Date

Y	M	D
16	5	18

Transferor / Borrower / Party Signature(s)

The Regional District of Bulkley
Nechako by it's authorized signatory

OFFICER CERTIFICATION:

Your signature constitutes a representation that you are a solicitor, notary public or other person authorized by the *Evidence Act*, R.S.B.C. 1996, c.124, to take affidavits for use in British Columbia and certifies the matters set out in Part 5 of the *Land Title Act* as they pertain to the execution of this instrument.

41

2/ 10.00

K17389

LAND TITLE ACT

Form 17

NATURE OF CHARGE

Section 215 Restrictive Covenant

True Value: Nominal

Herewith Fees Of: \$10.00

PERSON PRESENTING APPLICATION:

TOEWS, GREENE & TAKAHASHI
Barristers & Solicitors
#200 - 3790 Alfred Street
Post Office Box 940
Smithers, B.C.
VOJ 2N0; 847-4222;

PRINCE RUPERT AGENT
CLERKE, HARRIS & COMPANY
Barristers & Solicitors
7-222 Ave. of the City West
Prince Rupert, B.C.

Solicitor

THIS AGREEMENT MADE THE
BETWEEN:

DAY OF SEPTEMBER, A.D. 1981;

DENIS MOORE, Physician, of 2526 West 1st Avenue in the City of Vancouver, in the Province of British Columbia, V6K 1G7;

(Hereinafter referred to as the "Grantor")

LAND TITLE ACT
Form 1 (Section 38)
MEMORANDUM OF REGISTRATION
Registered on application received on the day and at the time stated herein

OF THE FIRST PART

AND:

W. J. ... Registrar,
Prince Rupert Land Title Office

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA and THE REGIONAL DISTRICT OF BULKLEY-NECHAKO;

(Hereinafter referred to as the "Grantee")

OF THE SECOND PART

WHEREAS:

The Grantor is the registered owner of those certain lands and premises situated in the Omineca Assessment District, in the Province of British Columbia, and more particularly known and described as:

FIRSTLY: Lots 1 and 2, District Lot 221, Range 5, Coast District, Plan 8713

RECEIVED
LAND REGISTRY
730 PRINCE RUPERT BLVD
PRINCE RUPERT, B.C.
SEP 16 11 58 AM '81

10.00 A
PRINCE RUPERT
REGISTRY PAID

42

K17389

SECONDLY: The South 1/2 of District Lot 221, except for that part included in Plan 8713 (See F11551), Range 5, Coast District;

AND WHEREAS the Grantor has requested from the Grantee approval of a Plan of Subdivision prepared over the aforesaid lands by Stephen Howard, A British Columbia Land Surveyor, of McWilliam, Whyte, Goble & Associates, and sworn on the 30th day of March, 1981;

AND WHEREAS as a condition of approval of the said plan of subdivision a covenant under Section 215 of the Land Title Act is required over those lands set out in Schedule "A" hereto;

NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the premises and the sum of ONE DOLLAR (\$1.00) of lawful money of Canada paid by the Grantee to the Grantor, receipt whereof is hereby acknowledged), the Grantor does hereby covenant and agree with the Grantor of Section 215 of the Land Title Act as follows:

1. "Hereafter, no building shall be constructed, nor mobile home located north of the southern boundary of the Gas Right-Of-Way which crosses the property, Plan 6131, District Lot 221, Range 5, Coast District.

2. Hereafter no area used for habitation, business, or storage of goods damageable by floodwaters shall be located within any building at an elevation such that the underside of the floor

system thereof is less than three (3) metres above the natural boundary of the Telkwa River. In the case of a mobile home, the ground level on which it is located shall be no lower than the above described elevation.

3. The required elevation may be achieved by structural elevation of the said habitable, business or storage area or by adequately compacted landfill on which any building is to be constructed or mobile home located, or by a combination of both structural elevation and landfill. No area below the required elevation shall be used for the installation of furnaces or other fixed equipment susceptible to damage by floodwater. Where landfill is used to raise the natural ground elevation, the face of the landfill slope shall be adequately protected against erosion from flood flows.

INIT.
QA

~~4. The required elevation may be achieved by structural elevation of the said habitable, business or storage area or by adequately compacted landfill on which any building is to be constructed or mobile home located, or by a combination of both structural elevation and landfill. No area below the required elevation shall be used for the installation of furnaces or other fixed equipment susceptible to damage by floodwater. Where landfill is used to raise the natural ground elevation, the face of the landfill slope shall be adequately protected against erosion from flood flows.~~

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5. The owner agrees to save harmless the Grantee in the event of any damage being caused by the flooding or erosion to the lands or to any building, improvement, or other structure built, constructed or placed upon the said lands and to any contents thereof."

IN WITNESS WHEREOF the Grantor has hereunto set His Hands and Seal the Day, Month and Year first above-written.

SIGNED IN THE PRESENCE OF:

William [Signature]
Name
2356 W 4th Ave
Address
Vancouver BC
Notary Public
Occupation

[Signature]
DENIS MOORE

This is the instrument creating the condition or covenant entered into under Section 215 of the Land Title Act by the registered owner referred to herein and shown on the print of the plan annexed hereto and intialled by me.

[Signature]
Approving Officer, Ministry of Transportation
and Highways for the Province of British
Columbia, this 2nd day of OCT. 1981;

45

SCHEDULE "A"

K17389

Lots 13, 14, 15 and 16 as set out in a Plan of Subdivision of
Lots 1 and 2, Plan 8713, District Lot 221, and Part of the
Remainder of the South 1/2 of District Lot 221, Range 5,
Coast District;

102216

40

COPIED

THIS AGREEMENT MADE THE DAY OF AUGUST, 1981
BETWEEN:

DENIS MOORE

OF THE FIRST PART

AND:

HER MAJESTY THE QUEEN

OF THE SECOND PART

SECTION 215 COVENANT

TOEWS, GREENE & TAKAHASHI
Barristers & Solicitors
#200 - 3790 Alfred Street
Post Office Box 940
Smithers, B.C.
VOJ 2N0; 847-4222

47

LAND TITLE OFFICE
FORM 17
APPLICATION

R/
10:00

L16682

CHARGE: Restrictive Covenant
under Section 215

True Value: Nominal
Herewith Fees of: 10.00

Person Presenting Application
for Registration:

Queen's Parliament Buildings
Regional District of Bulkley-Nechako
343 Yellowhead 16, Burns Lake

M. Regan
Signature of Applicant

Please refer all matters relating to this application to
North Pacific Registry Ltd.
Suite 11-222, 2nd Fl. West Wing
Prince Rupert, B.C.

THIS AGREEMENT made the 15th day of DECEMBER, 1982

BETWEEN:

DENIS MOORE
2526 West 1st Avenue,
Vancouver, B.C. V6K 1G7

(Hereinafter called the "Grantor")

OF THE FIRST PART

AND:

HER MAJESTY THE QUEEN, IN THE RIGHT OF THE PROVINCE
OF BRITISH COLUMBIA, as represented by the Ministry of
the Environment, Victoria, B.C. V8V 1X4, and the Regional
District of Bulkley-Nechako, Burns Lake, B.C. V0J 1E0

(Hereinafter called the "Grantee")

OF THE SECOND PART

WHEREAS:

- The Grantor is the registered owner in fee simple of ALL AND SINGULAR that certain parcel or tract of land and premises, situate lying and being in the Omineca Assessment District in the Province of British Columbia more particularly known and described as: Lots 13 and 14, Plan 10216, District Lot 221, Range 5, Coast District.
- The Grantor proposes to subdivide Lots 13 and 14, Plan 10216, District Lot 221, Range 5, Coast District, according to a Subdivision Plan prepared and sworn by STEPHEN HOWARD, a British Columbia Land Surveyor, on the 21st day of September, 1982, a copy of which is annexed hereto as Schedule "A".
- As a condition of approval of the said Subdivision Plan a covenant under the Land Title Act, R.S.B.C. 1979, Chapter 25, 55(1) on \$1010.00 A is required.

RECEIVED
LAND TITLE
OFFICE
DEC 22 14 22 '82

LAND TITLE OFFICE
Form 1 (Section 36)
MEMORANDUM OF REGISTRATION
Registered on application received on
the day and at the time written herein
W. J. Hardy
Prince Rupert

PRINCE RUPERT
L.R.O.
AMOUNT PAID

22 DEC 82

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NOW THEREFORE THIS INDENTURE WITNESSETH that in consideration of the premises and the sum of ONE DOLLAR (\$1.00) of lawful money of Canada, now paid by the Grantee to the Grantor, the receipt of which is hereby acknowledged, the Grantor does hereby covenant and agree with the Grantee, under Section 215 of the said Land Title Act as follows:

For Lot 1:

- "1. Hereafter, no building shall be constructed, nor mobile home located further than seventy-five (75) metres from the south boundary of the property fronting on Aveling Coal Mine Road.
- 2. Hereafter, no area used for habitation, business, or storage of goods damagesble by floodwaters shall be located within any building at an elevation such that the underside of the floor system thereof is less than three (3) metres above the natural boundary of the Telkwa River or any side channel thereof. In the case of a mobile home, the ground level on which it is located shall be no lower than the above described elevation.
- 3. The required elevation may be achieved by structural elevation of the said habitable, business, or storage area or by adequately compacted landfill on which any building is to be constructed or mobile home located, or by a combination of both structural elevstion and landfill. No area below the required elevation shall be used for the installation of furnaces or other fixed equipment susceptible to damage by floodwater. Where landfill is used to raise the natural ground elevation, the toe of the landfill slope shall be no closer to the natural boundary than the setback requirement given in Condition # 1 above. The face of the landfill slope shall be adequately protected against erosion from flood flows.
- 4. The owner agrees to save harmless the Province of British Columbia and the Regional District of Bulkley-Nechako in the event of any damage being caused by flooding or erosion to the land or to any building, improvement, or other structure built, constructed or placed upon the said lands and to any contents thereof."

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For Lots 2 and 3:

- "1. Hereafter, no building shall be located or constructed, nor mobile home located north of the southern boundary of the Gas Right-of-Way which crosses the property, Plan 6131, D.L. 221, Range 5, Coast District.
- 2. Hereafter, no area used for habitation, business, or storage of goods damageable by floodwaters shall be located within any building at an elevation such that the underside of the floor system thereof is less than three (3) metres above the natural boundary of the Telkwa River or any side channel thereof. In the case of a mobile home, the ground level on which it is located shall be no lower than the above described elevation.
- 3. The required elevation may be achieved by structural elevation of the said habitable, business, or storage area or by adequately compacted landfill on which any building is to be constructed or mobile home located, or by a combination of both structural elevation and landfill. No area below the required elevation shall be used for the installation of furnaces or other fixed equipment susceptible to damage by floodwater. Where landfill is used to raise the natural ground elevation, the toe of the landfill slope shall be no closer to the natural boundary than the setback requirement given in Condition # 1 above. The face of the landfill slope shall be adequately protected against erosion from flood flows.
- 4. The owner agrees to save harmless the Province of British Columbia and the Regional District of Bulkley-Nechako in the event of any damage being caused by flooding or erosion to the land or to any building, improvement, or other structure built, constructed or placed upon the said lands and to any contents thereof."

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For Lot 4:

- "1. Hereafter, no building used for habitation, business, or storage of goods damageable by floodwaters shall be constructed with the elevation of the underside of the floor system thereof less than three (3) metres above the natural boundary of the Talkwa River or any side channel thereof. In the case of a mobile home, the ground level on which it is located shall be no lower than the above described elevation.
- 2. The required elevation may be achieved by structural elevation of the said habitable, business, or storage area or by adequately compacted landfill on which any building is to be constructed or mobile home located, or by a combination of both structural elevation and landfill. No area below the required elevation shall be used for the installation of furnaces or other fixed equipment susceptible to damage by floodwater. Where landfill is used to raise the natural ground elevation, the face of the landfill slope shall be adequately protected against erosion from flood flows.
- 3. The owner agrees to save harmless the Province of British Columbia and the Regional District of Bulkley-Nechako in the event of any damage being caused by flooding or erosion to the land or to any building, improvement, or other structure built, constructed or placed upon the said lands and to any contents thereof."

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IN WITNESS WHEREOF, the parties hereto have hereunto set their hands and seals, or being a corporation have caused its common seal to be hereunto affixed.

SIGNED, SEALED AND DELIVERED by the Grantor in the presents of:

William J. Parton

WILLIAM J. PARTON
2356 West 4th Avenue
Vancouver B.C. V6K 3R8
NOTARY PUBLIC

Denis Moore

DENIS MOORE

THIS is the instrument creating the condition or covenant entered under Section 215 (1) of the Land Title Act by the registered owners referred to herein and shown on the print of the plan initialled by me and annexed hereto, with the Province of British Columbia as represented by the Ministry of Environment and the Regional District of Bulkley-Nechako.

[Signature]
Approving Officer
Ministry of Transportation
and Highways

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Doc #: L16682 RCVD: 1982-12-22 RQST: 2016-05-18 10:42:39

Status: Registered

583301

DATED: _____

BETWEEN:

DENIS MOORE

(Hereinafter called the "Grantor")

AND:

**HER MAJESTY THE QUEEN, IN THE RIGHT
OF BRITISH COLUMBIA**

**as Represented by the Ministry of the Environment,
and the Regional District of Bulkley-Nechako
(Hereinafter called the "Grantee")**

COVENANT
