

Appendix A: List of Reports Reviewed

Number	Name	Location	Summary of Information	References
NA	Landslide Debris from Regional Surficial Geology Map	Northern half of study area, NTS: 93G01 and 93G02	Depicts surficial soils classified as slide debris.	Canadian Geological Survey (CGS). http://gsc.nrcan.gc.ca/index_e.php
#1	Big Slide	Big Bend of Fraser	Outside of Study Area (north)	Big Slide, Quesnel, Hixon Rd, Yr. 1985 (Box 56/33300-65/NC-SS-58) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 Evans, 1982, The Development of Big Slide, near Quesnel BC, between 1953 - 1982
#2	Paradise Road	Big Bend of Fraser	Outside of Study Area (north)	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#3	Quesnel River / Kapetski Landfill Slide	Located on the North side of the Quesnel River at the end of Callis Road.	Large retrogressive slide. Fraser river formation sediments have been undercut by the Quesnel River. Large amounts of seepage, east and west margins considered very active (Evans & Crook, 1973). July 1989 a large slide occurred in wood waste landfilled in a spent gravel pit located on the Quesnel River slide. The failure reportedly occurred entirely within landfill materials (Hardy BBT, 1989).	Geotechnical Engineering Report, Kapetski Landfill. Hardy BBT. Schmidt J.A. KX00572. November 1989 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 Preliminary Report on the Foundation Investigation for the Quesnel River Crossing, Quesnel North-South Interconnector, MoTH File M42-20-22 December 1995 Quesnel North/South Interconnector - Quesnel River Crossing Reports (Box 66/33300-65/NC-RG-22J) Quesnel North/South Interconnector, Planning Study Reports (Box 64/33300-65/NC-RG-22D)
#4	Redbluff Slide	East-West trending scarp extending from the south side of Dragon Creek to Plywood Hill.	Large active retrogressive and flow slide complex initiated when the Quesnel river flowed at the base of the slope. Homes and infrastructure along crest may be subject to landslide damage due to retrogressive failure of headscarp (Evans and Crook, 1973). Dug wells observed along slope crest indicate high level aquifer which may be contributing to instability.	Redbluff Slide, Borregard Rd, Yr 1998 (Box 52/33300-65/NC-SS-02) DL222, Logging Red Bluffs Slide, Yr 2000 (Box 57/33300-65/NC-SS-85) DL 222, Lot 4, Plan 6720 (Box 49/33300-65/NC-SD-02) DL 222, Lot 3, PL 6461 (Box 49/33300-65/NC-SD-03) Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#5	Beaver House Lake Slide	Above the West Fraser Plywood on the east side of the Fraser River.	Retrogressive slide with poorly defined boundaries (Evans & Crook, 1973). Slide appeared inactive with no indications of recent deformation. Overhead telephone line running across the slide scarp was under tension indicating some movement (AMEC, 2001)	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001
#6	Westply Slide	Immediately south of West Fraser Plywood on the east banks of the Fraser River	Active retrogressive slide driven by undercutting from the Fraser River and supplied with water from a small creek. The former BCR had attempted to stabilize the slide by installing drainage pipes and culverts (Evans and Crook, 1973). The slide threatens to undermine the rail tracks. When viewed in 2008 multiple blocks had slumped towards the Fraser, small sag ponds were evident along the backs of the blocks. The creek has been directed into a penstock to reduce water inputs.	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#7	West Quesnel Slide	Located in the neighborhood of West Quesnel (west side of Fraser River). Extends from the diatomite mine on Abbot Drive to Anderson/Lewis Drive proximate the Fraser River. Baker Creek to the north and Plateau slide to south	Large deep seated earthflow with movements up to 100 mm/year. Significant risk to homes and infrastructure. Trial dewatering program being carried out to stabilize slide (AMEC, 2007).	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 West Quesnel Slope Stability Assessment. HBT AGRA Limited, KX01651. June 1994 West Quesnel Land Stability Study Vol 1 of 2 Reports and Figures, KX04397, AMEC, May 2007 Trial Dewatering West Quesnel Land Stability Study KX0439717, AMEC, May 2008
#8	Quesnel Hill Slide Complex	Located on bluff between North Star Road and Highway 97 S. Partially in City of Quesnel.	Slide complex, movement has been initiated by historical river downcutting (Evans & Crook, 1973).	Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 Dragon Lake Hill, Hwy 97, Yr 1997 (Box 55/33300-65/NC-SS-55) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#9	Moose Heights Slide	6km north of Quesnel east of the Qesnel-Hixon Highway.	'Large presently inactive slide roughly 1225 meters across and rises at an angle of 10° for a height of 150 meters'. Subdivision for parcel on western portion of slide not approved due to insufficient level ground to allow construction with the recommended setback (60m) (MoT, 1977)	DL6182, SE1/4 of SE1/4 & part of lot A, PL19450 (Box 49/33300-65/NC-SD-24) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 Proposed Subdivision SE 1/4 of DL 6182, Department of Highways. 1977.
#10	Plywood Hill Slide	Outer bend of the Fraser on the eastern bank. Proximate to the intersection of Maple and Plywood Drive.	A road shoulder failure occurred at this site in 1963 followed by a major slide event in 1965 which blocked the rail tracks. Movement has also been observed at two other sites just north of the main scarp (MoT, 1977). Although the slide was not considered active in 2001, rapid retrogression was reported 20 years prior (AMEC, 2001).	Plywood Hill Slide, Western Plywood Rd, Yr 1977 (Box 52/33300-65/NC-SS-05) Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#11	Plateau / Abbot Drive Slides	Located on the west side of the Fraser River immediately south of the West Quesnel Slide. Extends from Abbot Drive to McRea Road proximate the Fraser River. Ruric Springs / Subdivision slide to the south.	In 1973 slide had been recently detected (Evans & Crook). Further described by DoT in 1978 in the Abbot Drive area as a retrogressive slide "slide train" cyclically migrating upslope. "Downslope failures eventually result in new failures in the oversteepened slide crown which in turn overloads the heel of the slide train and results in further downslope movement" (DoT, 1978). Access to upper portions of Abbot Drive was later relocated via Marsh Road.	Diatomite Mine- Quesnel. Golder Associates. 04-1430-065. July 2004 Abbot Drive Relocation - West Quesnel. Department of Highways. 1978 Abbot Drive Slides. Department of Highways. 1977 Abbot Drive Slide. Department of Highways. 1977. Abbot Drive Slide. Department of Highways. 1978 Preliminary Geotechnical Evaluation, Proposed Subdivision Area, Quesnel. THURBER ENGINEERING LTD. 19-162-17. May 1993 Abbot Rd (Plateau) Slide, Yr. 1989 (Box 54/33300-65/NC-SS-41) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#12	West Bank Slide	West bank of Fraser river North of Quesnel	Compound slide failed primarily through gravel materials between 1963 and 1969 (Evans & Crook, 1973).	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#13	East Bank Slide	East bank of Fraser river North of Quesnel	Large compound slide on East bank of Fraser River. Slide area likely located within an older slide mass (Evans & Crook, 1973).	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#14	Garbage Dump Slide	Outer bend of the Fraser, western bank north of Quesnel. At the intersection of Wells and Blackwater Road.	Active, deep seated landslide extending from the Fraser river to 250 m upslope from the Wells Road Pit area. Approximately 250 m wide at Blackwater Road and 600 m wide at the Fraser River (AMEC, 2001) Ongoing distress noted in asphalt surfaces along Blackwater and Wells Road (AMEC, 2001). Road surface was recently repaved as observed September 2008. Slope indicators/piezoes also installed in the area.	Stability Assessment - Garbage Dump Slide Blackwater Road Quesnel. AMEC E&E KX03981. May 2001 Proposed Subdivision E1/2 DL1121CD, except lot 1, plan 20424. Department of Highways. 1977. Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973

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#15	Gravel Pit Slide	E bank of Fraser	Outside of Study Area (City of Quesnel)	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#16	A&W Slide	2 mile flats area along Hwy 97 west bank of Quesnel river. Adjacent to the Fraser River East Bank Slide complex.	Compound slide failed along boundary tertiary materials and lignite seam due to high pore water pressures sourced from car wash, septic effluent and broken water mains caused by initial movement (Evans & Crook, 1973). Evidence of recent movement (AMEC, 2001).	Geotechnical Investigation A & W East Slide MoTH File M42-16-66 April 1993 Department of Highways, Quesnel Slide Study (incomplete report) Geotechnical Investigation East Bank Fraser River Slide Complex Hardy Assoc Q1521 July 1978 (Box 53/33300-65/NC-SS-07) A&W East Slide (Geotechnical Investigation Report) Hwy 97, Yr. 1990 (Box 56/33300-65/NC-SS-66) Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#17	Front Street Slide	E bank of Fraser	Outside of Study Area (City of Quesnel)	Front Street Slide, Hwy 97, Yr 1989 (Box 53/33300-65/NC-SS-19) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#18	Dragon Creek Fill Slide (Golden Ale U-Brew)	Dragon Creek north of Hwy 97	Outside of Study Area (City of Quesnel)	Dragon Creek Fill, Hwy 97, Yr 1997 (Box 55/33300-65/NC-SS-56) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#19	Barkerville Road Slide	Located on banks of Barlow Creek near crossing of Highway 26 (Barkerville Road)	Slump in cut slope of the old Barkerville Road. Soils composed of varved lacustrine silts. Upper gravel aquifer likely contributes to seepage and instability (Evans & Crook, 1973). Road since been realigned, active sliding still noted along either side of creek crossing (AMEC, 2001).	Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#20	Pipeline Slide	S bank of Quesnel R	Outside of Study Area (City of Quesnel)	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#21	Highway Slide	Along downslope edge of W Fraser Road approximately 1 km south of intersection with Skyline Road.	Relatively small slump/earthflow occurring in fine grained Fraser River formation saturated from upslope seepage. DoT (1977) recommended road realignment as headscarp had been eroded by continual seepage and infringed on road surface. Unclear if road was realigned.	Skyline (Highways) Slide, West Fraser Rd, Yr. 1977 (Box 54/33300-65/NC-SS-38) The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#22	Baker Creek Slide Features	Primarily located on the north side of Baker Creek along Baker Creek Road from Twan Avenue to Pinnacles Road.	Combination of small slumps and deeper seated instability along Baker Creek. Evidence of landslide activity includes hummocky terrain, sag ponds, slide scarps, disturbed vegetation and tension cracks. Sliding is attributed to stream erosion, high porewater pressures and weak tertiary bedrock/soils. Deemed that stabilization of the slopes along Baker Creek may be possible with armoring however stabilization of the deep seated sliding may not be practical given the size of movement (AGRA, 1999). Backscarp for deep seated slide is likely located across Baker Drive. Signs of displacement were observed in asphalt May 2008, road surface repaved as observed September 2008.	Twan Ave Instability, Quesnel, Yr 1996 (Box 55/33300-65/NC-SS-54) DL1125, Lot 2, PL16386 (Box 49/33300-65/NC-SD-11) Geotechnical Stability Assessment. Existing Single Family Dwelling: 1030 Riverpark Road, Lot 1 DL 1123 Plan 32551 Cariboo District Quesnel BC AGRA. KX03634. July 1999 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973 Baker Drive Slide, Yr. 1979 (Box 54/33300-65/NC-SS-45) Landslide Hazard Evaluation. Rem. Block B DL 1123, Cariboo District Quesnel BC. Hardy BBT. KX00845. October 1990
#23	Ruric Springs / Subdivision Slide	Located on the west side of the Fraser River between the Plateau / Abbot Drive Slides and the Marsh Road Hill Slide. Centered about Ruric Springs Road.	Large active slump with deep seated component extending from the upper plateau area (subdivision scarp) to the Fraser River. Movement also occurring within the larger slide mass along a low elevation terrace. Failures along this surface have infringed on the West Fraser Road at its intersection with Ruric Springs Road (AMEC, 2001).	Ruric Springs Slide, West Fraser Road, District Subdivision File (Box 52/33300-65/NC-SS-01F) Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001 DL906, Lot 1, 1/2 of NW 1/4, PL24648 (Box 49/33300-65/NC-SD-05) Stability Assessment - Ruric Springs Area West Fraser Road. AMEC E&E KX03981. March 2001 The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#24	Logging Road Slide	Terrace west of Fraser River.	Slump / flow feature located directly below area cleared of forest cover. Not much available information, Evans & Crook forecast future instability (1973).	The Landslide Problem in the Quesnel Area. SG Evans, RL Crook BC DoH Sept 1973
#25	Fraser River East Bank Slide complex	E bank of Fraser from Heinzelman Road south for approximately 800 m (hospital area). Slide extends from Highway 97 down to the river bank.	Stability issues noted in the mid 1960's. Hardy & Associates recommended a comprehensive remedial plan in 1978 which had yet to be implemented in 1993 (MoTH, 1993). Evidence of recent movement (AMEC, 2001).	Geotechnical Investigation East Bank Fraser River Slide Complex Hardy Assoc Q1521 July 1978 Geotechnical Investigation A & W East Slide MoTH File M42-16-66 April 1993 Landslides In Tertiary Deposits Quesnel BC, D McDougall (Masters Thesis U of A) 1993
#26 (16)	A & W East Slide	2 mile flats area along Hwy 97 west bank of Quesnel river. Adjacent to the Fraser River East Bank Slide complex.	As per #16. Compound slide failed along boundary tertiary materials and lignite seam due to high pore water pressures sourced from car wash, septic effluent and broken water mains caused by initial movement (Evans & Crook, 1973). Evidence of recent movement (AMEC, 2001).	Geotechnical Investigation A & W East Slide MoTH File M42-16-66 April 1993
#27	PGE Texaco Slide	2 mile flats area along Hwy 97 west bank of Quesnel river. Adjacent to the Fraser River East Bank Slide complex.	Cracking observed in 1959-60, subsequent geotechnical drilling encountered clays and lignite. Resloping, berm construction and drainage measures have apparently stabilized the slide (MoTH, 1993).	Geotechnical Investigation A & W East Slide MoTH File M42-16-66 April 1993
#28	Unnamed relict slides	South east of Bouchie Lake.	Described as ancient slides that occurred shortly after glacial retreat, features have been subdued due to erosion and vegetation (MoTH, 1980). Older reports recognized the slide hazard and recommended no development on a portion of this area (DL8645) (Hardy BBT 1981). Later studies found that subdividing into 2 acre parcels along the ancient landslide scarp would be acceptable. AGRA 1999 proposed that the slide scarp interpreted by MoTH could be interpreted meltwater channel however considered it prudent to assume the feature originated from ancient slide movement.	Subdivision in DL8645. Hardy BBT. KX00369. September 1988 Geotechnical Evaluation of Lot 1 and Lot 2 DL 8645. HBT AGRA Limited. KX01078. May 1993 Geotechnical Hazard Assessment for Proposed Subdivision in DL8645. Aqaterre Consultants Inc. 85106. 1985. Subdivision in DL8645. Hardy Associates (1978) LTD. U2497. May 1981. Deering Subdivision in DL 8645. Hardy Associates (1978) LTD. PX-02497. March 1982. Geotechnical Assessment SE corner DL 904 Cariboo District Quesnel BC. AGRA. KX03633. July 1999 Preliminary Geological Hazard Eval. Northwest of Quesnel, Buchanan R.G., MoTH, 1980
#29	BC Rail Mile 385 Slide	North Quesnel, W bank of Quesnel River	Outside of Study Area (City of Quesnel)	Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001
#30	Barlow Creek Crossing	North Quesnel, E and W banks of Barlow Creek. Pipeline crossing ~250 m south of Hwy 26 Bridge.	Some shallow sliding on either side of ROW. Many deep-seated slope instabilities downstream towards the Quesnel River (AMEC, 2001).	Quesnel Landslide Delineation, AMEC E&E, KX04033, June 2001
#31	Marsh Road Hill Slide	Located on the west side of the Fraser River. The backscarp is on the terrace crest west of Marsh Road switchback.	Appeared inactive with no indications of recent movement. Based on AMEC's experience there have not been reports of infrastructure distress due to landsliding in the Marsh Road Hill area (AMEC, 2001).	Quesnel Landslide Delineation, AMEC E&E KX04033, June 2001
#34	Kersley Dale Landing Rd	Kersley	Outside of Study Area (South)	Kersley Dale Landing Rd, Yr. 1996 (Box 57/33300-65/NC-SS-77)
#35 (28)	Localized Pearce Road Slide	Pearce Road, NW of Quesnel	Outside of Study Area (West). Part of unnamed relict slide slides feature #28	Geotechnical Assessment SE corner DL 904 Cariboo District Quesnel BC. AGRA. KX03633. July 1999
#37	Olsen Road Slide	4 miles east of junction of Barkerville Rd and Cariboo Hwy	No Figure	Olsen Road Slide, Olsen Rd, Yr 1997 (Box 53/33300-65/NC-SS-09)
#38	Datoff Fill Failure	6 miles S of Quesnel on the Cariboo Hwy	No Figure	Datoff Fill Slide, Hwy 97, Yr 1964 (Box 53/33300-65/NC-SS-14)

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#39	Dinwiddy Fill Failure	4 miles N of the Jctn of Cariboo Hwy and Barkerville Rd	No Figure	Dinwiddy Fill Slide, Hwy 97, Yr 1962 (Box 53/33300-65/NC-SS-15)
#40	4 mile creek fill failure	S bank of 4 mile creek	Unknown location	4 Mile Creek Fill, Hwy 97, Yr 1963 (Box 53/33300-65/NC-SS-18)
#41	Johnston St. Slide	Dragon Creek	Outside of Study Area (City of Quesnel)	Johnston St. Slide, Rd 278R, Y. 1963 (Box 54/33300-65/NC-SS-20)
#42	Quesnel Hixon Road Slide	E bank of Nelson Kenny Creek	Outside Study Area (North)	Quesnel Hixon - Olsen Rd Slide, Old Cariboo Hwy, Yr. 1981 (Box 54/33300-65/NC-SS-33)
#43	Rawlings Road Slide	W bank of West Creek	Outside of Study Area (North?)	Ministry of Transportation, 1979, Rawlings Road Reconstruction, Rawlings Road Slide, Yr 1979 (Box 55/33300-65/NC-SS-46)
#44	Ten Mile Lake Rd Slide	Northern portion of study area on North side of 10 Mile Lake Road	Failure along road cut, proximate to a single family residence.	Ten Mile Lake Road, Yr. 1986 (Box 56/33300-65/NC-SS-63)
#45	Garner Road Slide	Located on the west side of the Fraser River. Along second switchback of Frances Road. Adjacent and south of Logging	"Area of Concern" identified for area south of Logging Road slide to Garner Road switchback (MoT, 1986)	Garner Rd. Slide. Ministry of Transportation, Yr. 1989 (Box 56/33300-65/NC-SS-64)
#46	West Fraser Road Washout Slide	N bank of Narcosli Ck	Outside of Study Area (South)	Stability Investigation for West Fraser Road Washout Slide, Fort George District, March 1992 (Box 56/33300-65/NC-SS-68)
#46	Deep Creek Hill Slide	N or E bank of Narcosli Ck	Outside of Study Area (South)	Geotechnical Investigation for Deep Creek Hill Slide, West Fraser Road, June 2000 (Box 57/33300-65/NC-SS-83)
#47	Longbar Road Slide	East bank of Fraser river North of Quesnel, along Big Bend	Outside of Study Area (North), part of the Big Slide Complex	Longbar Rd. Slide, Yr. 1992 (Box 56/33300-65/NC-SS-69)
#48	Bouchie Creek / Paradise Road Slides	Elevated bench west of Paradise Road from Gamache to Gordier Road and within the Bouchie Creek Drainage	Listed as "old slide area" above gravel pit with localized scarps and slumps along Bouchie Creek sidewalls (MoTH, 1981). Field observations in 2008 indicated numerous active shallow slides and a zone of subsidence/slumping 100 m across crest located on the south sidewall of Bouchie Creek near the east end of Bartkow Road. Localized slide surfaces were also viewed along the old slide area from the gravel pit on Paradise Road.	Paradise Road Slide, Yr. 1997 (Box 57/33300-65/NC-SS-80) Proposed Subdivision DL 8633, Part of E 1/2, 1981, Ministry of Transportation and Highways (Box 50/33300-65/NC-SD-49)
#49	Tremblay Road Washout/Slide	N bank of Quesnel R	Outside of Study Area (East)	Tremblay Road Washout/Slide (Box 57/33300-65/NC-SS-81)
#50	1137 & 1143 W Fraser Rd. Slide	W Bank of Fraser R	No Figure	1137 & 1143 West Fraser Rd, Yr. 1998 (Box 57/33300-65/NC-SS-79)
#51	Localized Fraser River bank slides	E bank of Fraser R	Outside of Study Area (South)	DL3974 Blocks A & C (Box 50/33300-65/NC-SD-69)
#52	North Star Interchange slide	Northstar Interchange	Outside of Study Area (City of Quesnel)	Quesel North/South Interconnector - Mis. Reports and Slides (Box 66/33300-65/NC-RG-22k)
#53	Cottonwood Slide	Barkerville Hwy, E of Quesnel	Outside of Study Area (East)	Department of Highways, 1980, Cottonwood Bypass - Barkerville Highway