BRIDGE INSPECTION

BRIDGE NO./NAME	**62- 035: Black Creek- Bosk Lk FSR (1.00 KM)**
Inspection Date:	September 11th 2012
Inspected By:	D. Chen, J. Rupar Gilliatt
Year Built:	1970
Number of Spans:	4

Span Lengths:	Span 1 –	8,200 mm
	Span 2 –	27,500 mm
	Span 3 –	5,100 mm
	Span 4 –	6,200 mm

Superstructure Type:	Span 1:	Nine creosote treated sawn timber stringers, 280 mm x 590 mm spaced at 580 mm c/c.
	Span 2:	Two glulam girders: top flange = 470 mm x 405 mm, web = 370 mm thick, bottom flange = 470 mm x 390 mm, overall height = 1980 mm, spaced at 3050 mm c/c.
	Span 3 & 4:	Nine sawn timber creosote treated stringers, 240 mm x 535 mm spaced at 610 mm c/c and staggered at the ends where they're spaced at 350 mm.

Deck:	Wearing surface, untreated timber wearing planks. Structural planks, creosote treated timber planks. Deck width 4150 mm.
Deck Structural:	Creosote treated transverse timber ties 200 mm x 290 mm spaced at 400 mm c/c.
Curb:	2 layers of timber curbs and risers with mud rail, timber handrail on downstream face only.

BRIDGE INSPECTION

Substructure:

Abutments:
Timber cap beam with timber ballast wall and breast wall, supported by 6 timber piles. Timber wing walls supported by timber soldier piles. All timber components are creosote treated.

Piers:

Pier 1:
Camp end and woods end cap beams each comprise of a creosote treated timber cap beam, supported by 6 creosote treated timber piles and bracing.

Pier 2:
Camp end and woods end cap beams each comprise of a creosote treated timber cap beam, supported by 6 creosote treated timber piles and bracing. Protected by upstream dolphin piles, steel nose plate and timber sheathing.

Pier 3:
Creosote treated timber cap beam supported by 6 creosote treated timber piles and bracing.

GENERAL BRIDGE CONDITION:

Superstructure Condition:	Fair
Substructure Condition:	Fair
Deck Condition:	Fair
Load Posting:	60 Tonnes
Date for the Next Close Proximity Inspection:	2015
Projected Replacement Date:	2020

BRIDGE INSPECTION SUMMARY/ RECOMMENDATIONS:

The bridge is generally in fair condition. We identified deterioration in a number of piles and one cap, suggesting that the condition of the bridge is slowly starting to deteriorate.

There are no approach barriers at either end of the bridge. We recommend the Ministry considers installing approach barriers due to steep embankments at the bridge site.

The wearing planks in the wheel tracks appear to have been recently replaced. The remaining wearing planks are showing signs of wear and require replacement.

We observed a number of missing curb rail anchor bolts. The ministry should install the missing anchor bolts.

BRIDGE INSPECTION

INSPECTION NOTES:

Approaches:

- The approaches are generally in fair condition.
- Loose gravel was noted on the approaches.
- There are no approach barriers in place.
- The camp end delineators are missing and the woods end upstream delineator is damaged.
- The bridge deck is higher than the road surface at the woods end.
- Both Bridge Ahead signs are missing.

Deck:

- The deck is generally in fair condition.
- A hand rail is in place on the downstream face.
- Hand rail damage noted near the camp end, a few posts have end splits.
- The curb rail is in fair condition, observed longitudinal checks, rub damage and pockets of rot.
- The curb rail anchor bolts are missing in a number of places.
- Additional posts are attached to the upstream curb rail. Posts are in poor condition; 14 damaged, 4 missing, end rot in a few remaining posts.
- Debris accumulation along deck edge.
- The planks in the wheel tracks appear to have been recently replaced. The remaining planks are in fair condition showing signs of wear with longitudinal checks and small pockets of rot.
- Drilling the wearing planks identified moisture at the interface with the structural deck.
- Drilling the structural planks identified moisture but no signs of rot.
- Drilling the ties identified moisture but no signs of rot.

Abutments:

- The both abutments are generally in fair condition.
- The camp end cap beam has an end check on upstream end.
- The cap beams of both abutments are sound.
- There are 130 mm and 75 mm wide gaps between the bottom breast wall planks of the camp end and woods end abutments respectively.
- The toe of the camp end breast wall is exposed in places. Minor scour and limited fill loss was noted from behind both abutment breast walls.
- Debris accumulation was noted on the exposed edges of both cap beams.
- Drilling pile 5 on the camp end and woods end abutments identified no rot.
- Camp end rip rap is on the embankment behind pier 3.
- Woods end riprap is on the embankment behind pier 1, poorly placed and lacking coverage.

Wing Walls:

- Camp end upstream pile 2 has initial stages of heartwood rot.
- Camp end downstream wing wall has a broken top plank.
- No flashing on camp end downstream pile 1, heartwood rot in top section of the pile; the bottom of pile 1 has signs of heartwood rot with 200 mm shell remain.
- The woods end upstream wing wall has damaged flashing on pile 1; we observed heartwood rot with 100 mm shell remain in top 700 mm of pile.

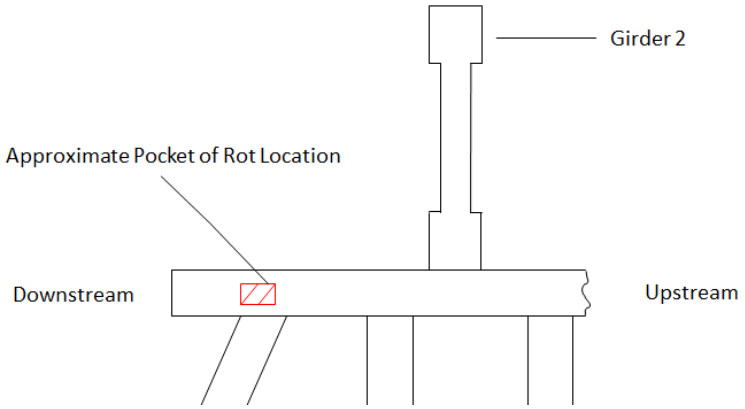
Piers:

Pier 1:

- Generally in good condition.
- The cap beam is sound.
- Debris accumulation on the cap beam.
- Drilled camp end pile 1; No rot, moisture noted.
- Drilled woods end pile 4; No rot, moisture noted.

Pier 2:

- Generally in fair condition.
- The camp end cap beam is sound, good condition; minor weathering at both ends, end check noted. Minor debris accumulation and moss growth was noted in the check.
- The woods end cap beam is in fair condition, vertical end split noted in the downstream face with an adjacent check on the top of the cap approximately 1 m long, see photo sheet figure 1-29. Minor debris accumulation and moss growth was noted in the check.
- We identified heartwood rot with 150 mm of shell remain at the check in the downstream end of woods end cap above downstream pile; the capacity of woods end cap does not appears to be affected by the decay, no bulging or crushing noted.



Pier 2 Woods End Cap

- Deterioration of two piles identified, heartwood rot in places.
- Drilled camp end pile 2; No rot, moisture noted.
- Drilled camp end pile 3; heartwood rot noted with 75 mm of shell remain.
- Drilled the bottom of camp end pile 6; heartwood rot noted with 100 mm of shell remain.
- Drilled woods end pile 6; No rot, moisture noted.

Pier 3:

- Generally in good condition.
- The cap beam is sound.
- Minor debris accumulation on the cap beam.
- Creosote leaching and minor weathering of cap ends.
- A vertical check 12 mm wide and 85 mm deep was noted on the camp end face of the 5th pile.
- Drilled pile 4; No rot noted.

Girders/Stringers:

Typical Condition:

- Typical debris accumulation noted on top of external girders.

Span 1 Stringers:

- Upstream face of stringer 1 has creosote leaching and minimal creosote loss.
- Interior stringer faces are 100% covered by creosote with minimal creosote leaching.
- Downstream face of stringer 9 has visible creosote on <25% of stringer face.
- We observed a series of short diagonal checks near the mid-depth of stringers 3, 5, 6, 7, 8 & 9. The checks do not appear to affect the capacity of the stringers.

Example of Mid-Depth Series of Checks in Stringer, Span 1 Stringer 9 Downstream Face Shown

Spans 2 - Girder 1 upstream face:

- Creosote leaching covering face, some checks noted typically 40 mm deep in the top flange, 75 mm deep in places.

Span 2 – Girder 1 downstream face & Girder 2 upstream face:

- Creosote leaching through laminated joints, some checks noted.

Span 2 - Girder 2 downstream face:

- Creosote leaching out of laminated joints, <25% of face exposed, some checks noted typically <15 mm deep 30 mm in places.

Span 3 Stringers:

- Upstream face of stringer 1 has creosote leaching with some checks noted.
- Interior stringer faces are 100% covered by creosote with minimal creosote leaching.
- Downstream face of stringer 9 has visible creosote on <25% of stringer face, some checks noted.
- We observed a series of short diagonal checks near the mid-depth of stringers 1, 4, 5, 6, 7 & 9. The checks do not appear to affect the capacity of the stringers.

Span 4 Stringers:

- Upstream face of stringer 1 has creosote leaching, some checks noted.
- Interior stringer faces are 100% covered by creosote with minimal creosote leaching.
- Downstream face of stringer 9 has some checks.
- We observed a series of short diagonal checks near the mid-depth of stringers 1, 6 & 7. The checks do not appear to affect the capacity of the stringers.

Checks on Girders/Stringers:

Span 1:

Stringer	Check Start	Check End	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition
3, upstream face	1600 mm from Woods end Abutment	3000 mm from Pier 1	100		270 mm from bottom	Series of checks
3, downstream face	Pier 1	Mid span	100		270 mm from bottom	Series of checks
5, upstream face	Pier 1	Mid span	10		280 mm from bottom	Series of checks
5, downstream face	Woods end Abutment	Pier 1	110	10	300 mm from bottom	Series of checks
6, downstream face	Pier 1	1600 mm from Pier 1	90	1.5	310 mm from bottom	Series of checks
7, downstream face	Pier 1	Mid span	55	< 1	330 mm from bottom	Series of checks
8, downstream face	Woods end Abutment	Pier 1	50		320 mm from bottom	Series of checks
9, downstream face			90		Mid depth.	Series of checks; drilled below the check, no rot.

Span 2 – Girder 1:

Tag Type	Check Start	Check End	Length (mm)	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition (mm)
Existing	Pier 1	AE611	1500			Upstream face. Tie bracket.	Not propagated.
Existing	AE1265	AE1266	4800	50	3	Upstream face. 60 from top flange.	Previously tagged ND Lea 424 to ND Lea 423. Propagated 300 towards Camp end & 730 to Woods end.

Existing	Pier 1	AE102	3800			Downstream face. 335 from bottom flange.	Not propagated, filled with creosote.

Span 2 – Girder 2:

Tag Type	Check Start	Check End	Length (mm)	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition (mm)
New	AE1270	AE1269	4000	35		Downstream face. 1000 from top flange.	Series of checks.

Span 3:

Stringer	Check Start	Check End	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition
1, upstream face	Pier 3		10		Mid depth.	Series of checks.
1, upstream face	Pier 2	Mid span	20		Mid depth.	Series of checks.
4, downstream face	Pier 2	1600 mm from Pier 3	65		Mid depth.	Series of checks.
5, upstream face	Pier 2	Pier 3	35		220 from bottom.	Series of diagonal checks.
5, downstream face	500 mm from Pier 3	Mid span	55		Mid depth.	Series of checks.
6, upstream face	Pier 2	Pier 3	80	4	Mid depth.	Series of checks.
7, downstream face	Pier 2	Pier 3	55		Mid depth.	Series of checks.
9, downstream face	Pier 2	Pier 3	70		Mid depth.	Series of checks.

Span 4:

Stringer	Check Start	Check End	Max. Depth (mm)	Max. Width (mm)	Location (mm)	Condition
1, upstream face	Pier 3	Camp end Abutment	60		Mid depth.	Series of checks.
1, upstream face			30		Bottom 1/3.	Diagonal checks in middle 1/3 of span.
1, downstream face			40		Mid depth.	Diagonal checks in middle 1/3 of span.

6, upstream face	Mid span	1000 mm from Camp end Abutment	70	5	Bottom 1/3.	Diagonal series of checks.
7, upstream face					Mid depth.	Minor checks.

LIST OF MAINTENANCE ITEMS TO BE COMPLETED:

Items	Description	Priority
1.	Install curb rail anchor bolts as required.	High
2.	Replace/install damaged or missing delineators.	High
3.	Replace wearing planks as required.	Medium
4.	Replace/install damaged/missing flashing on wing wall soldier piles.	Medium
5.	Install bridge ahead signs.	Medium
6.	Remove debris from cap beams and exterior stringers.	Low
7.	Remove debris from deck.	Low

MONITOR DURING FUTURE INSPECTIONS:

1. Monitor deterioration of Pier 2 piles.
2. Monitor condition of Pier 2 cap beams.
3. Continue to monitor condition of girders and stringers.
4. Monitor the deterioration of the wing wall soldier piles.
5. Monitor scour at abutments.

Prepared by:

Jamie Rupar Gilliatt M.Eng., EIT.
Project Engineer

Reviewed by:

David Chen, P.Eng.
Project Manager

APR 2 4 2013

Attached:

1. CBR Report
2. Annotated Photo Sheets

BRIDGE INSPECTION

NOTES:

Directional & Numbering Conventions Used:
Girders and piles are numbered from upstream to downstream. Left end or right end is determined facing downstream (except for delineators). Spans and piers are numbered from the left end when facing downstream.

Projected Replacement Date:
The projected date for the bridge replacement is based on the remaining service life of the bridge. We estimate the remaining service life as the greater of:

For Glulam Girder Bridges:
1. Original design life, typically 50 years.
2. If a bridge is nearing the end of its estimated service life but is still in fair condition, we recommend that the Ministry assume a remaining service life of five years.

For Steel and Concrete Bridges:
1. Original design life, typically 60 years.
2. If a bridge is nearing the end of its estimated service life but is still in fair condition, we recommend that the Ministry assume a remaining service life of ten years.

Condition Ratings:

Excellent:	New or almost new condition and properly installed
Good:	Structurally sound, in good repair with minimal wear
Fair:	Structurally functional, shows moderate wear or preliminary indications of deterioration
Poor:	Structurally unsound, items typically in need of repair or replacement

Maintenance Priority (Typical Usage):

High:	Critical items that need to be addressed to protect safety of users (curbs, structural decks, delineators, major structural repairs, etc.); schedule work immediately.
Medium:	Items that maintain the service life of the bridge (wearing planks, deck joints, etc.)
Low:	Items that will extend the service life of the structure or general maintenance.

Cost Estimate:
The cost estimate for individual maintenance items, shown in the CBR report, reflects the cost of materials and labour for completing a task; it does not include any costs associated with mobilization, demobilization, engineering or contract administration.

Date Printed: 2013/03/26
User Id: BCEID\WRILEY1
Database: PROD
Report Id: CBR001A

BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Structure #:	62-035	**Site #:**	62-035	**Road Name:**	BLACK CREEK-BOSK LK	**Inspection Date:**	2012/09/11
KM:	0.64	**User km:**	1.00	**Crossing Name:**	Horsefly R	**Next Inspection Date:**	2012/11/16
Project File ID #:	1253	**Br.**	01	**Forest District:**	Central Cariboo Forest District		

Deck Type:	Timber - Untreated		**Running Surface:**	Timber Planks	
Superstructure	Glulam Girder		**Abutments (Left/Right):**	Pile -Permanent Materials	
Total Length *(metres)*:	49.0	**# Spans:**	4	**Span Length(s)** *(metres)*:	8.2, 27.5, 5.1, 6.2
UTM Zone:	10	**UTM Easting:**	632055	**UTM Northing:**	5795376
Inspector Name:	D. Chen, J. Rupar	**Year Built:**	1970		
Access:					

ABUTMENTS

Bearings	Not Applicable	
Bracing	Not Applicable	
Ballast Wall	Good	There are 130 mm and 75 mm wide gaps between the bottom breast wall planks of the camp end and woods end abutments respectively. The toe of the camp end breast wall is exposed in places. Minor scour and limited fill loss was noted from behind both abutment breast walls.
Corrosion Protection	Not Applicable	
Caps or Sills	Fair	The cap beams of both abutments are sound. Debris accumulation was noted on the exposed edges of the cap beams. The camp end cap beam has an end check on upstream end.
Fill	Fair	
Hardware	Good	
Piles or Posts	Good	Coring the 5th pile on the camp end and woods end abutments identified no rot.
Riprap	Fair	Camp end: good condition; rip rap placed on embankment behind pier 3. Woods end: poor condition; rip rap placed on the embankment behind pier 1 is poorly placed and lacking coverage.
Wing Wall	Fair	Camp end upstream pile 2 has signs of heartwood rot. Camp end downstream wing wall has a broken top plank. No flashing on pile 1 and heartwood rot in top section of the pile. The woods end upstream wing wall has damaged flashing on pile 1 and heartwood rot in top 700 mm. See AE Inspection Summary for details.

APPROACHES

Alignment	Good	
Bridge Ahead Signs Missing	2	
Brushing Required	No	
Delineator Missing Left	1	Camp end delineator is missing.
Delineator Missing Right	1	Camp end delineator is missing. Woods end upstream delineator is damaged.
Fender Condition	None	There are no approach barriers in place.

BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Structure #:	62-035	Site #:	62-035	Road Name:	BLACK CREEK-BOSK LK	Inspection Date:	2012/09/11

Posted Load Rating	60	
Road Surface	Fair	Loose gravel was noted on the approaches. The bridge deck is higher than the road surface at the woods end.

DECK

Span 1

Curb Rail/Blocks/Posts	Fair	Curb rail: observed longitudinal checks, rub damage and pockets of rot. Additional posts are attached to the upstream curb rail. Posts are in poor condition; 14 damaged, 4 missing, end rot in a few remaining posts.
Deck to Girder Bolts	Good	
Hardware	Fair	Curb rail anchor bolts are missing in a number of places.
Hand Rails/Walkouts	Fair	Hand rail damage noted near the camp end, a few posts have end splits.
Nails	Good	
Overall Deck Condition	Good	Debris accumulation along edge of wearing planks.
Running Planks	Fair	The planks in the wheel tracks appear to have been recently replaced. The remaining planks are in fair condition and showing signs of wear with longitudinal checks and small pockets of rot. Coring the wearing planks identified moisture at the interface with the structural deck.
Sub Deck	Good	Coring the structural planks identified moisture but no signs of rot.
Ties	Good	Coring the ties identified moisture but no signs of rot.

Span 2

Curb Rail/Blocks/Posts	Fair	Curb rail: observed longitudinal checks, rub damage and pockets of rot. Additional posts are attached to the upstream curb rail. Posts are in poor condition; 14 damaged, 4 missing, end rot in a few remaining posts.
Deck to Girder Bolts	Good	
Hardware	Fair	Curb rail anchor bolts are missing in a number of places.
Hand Rails/Walkouts	Fair	Hand rail damage noted near the camp end, a few posts have end splits.
Nails	Good	
Overall Deck Condition	Good	Debris accumulation along edge of wearing planks.
Running Planks	Fair	The planks in the wheel tracks appear to have been recently replaced. The remaining planks are in fair condition and showing signs of wear with longitudinal checks and small pockets of rot. Coring the wearing planks identified moisture at the interface with the structural deck.
Sub Deck	Good	Coring the structural planks identified moisture but no signs of rot.
Ties	Good	Coring the ties identified moisture but no signs of rot.

Span 3

Curb Rail/Blocks/Posts	Fair	Curb rail: observed longitudinal checks, rub damage and pockets of rot. Additional posts are attached to the upstream curb rail. Posts are in poor condition; 14 damaged, 4 missing, end rot in a few remaining posts.
Deck to Girder Bolts	Good	
Hardware	Fair	Curb rail anchor bolts are missing in a number of places.

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Structure #:	62-035	Site #:	62-035	Road Name:	BLACK CREEK-BOSK LK	Inspection Date:	2012/09/11

Hand Rails/Walkouts	Fair	Hand rail damage noted near the camp end, a few posts have end splits.
Nails	Good	
Overall Deck Condition	Good	Debris accumulation along edge of wearing planks.
Running Planks	Fair	The planks in the wheel tracks appear to have been recently replaced. The remaining planks are in fair condition and showing signs of wear with longitudinal checks and small pockets of rot. Coring the wearing planks identified moisture at the interface with the structural deck.
Sub Deck	Good	Coring the structural planks identified moisture but no signs of rot.
Ties	Good	Coring the ties identified moisture but no signs of rot.
Span 4		
Curb Rail/Blocks/Posts	Fair	Curb rail: observed longitudinal checks, rub damage and pockets of rot. Additional posts are attached to the upstream curb rail. Posts are in poor condition; 14 damaged, 4 missing, end rot in a few remaining posts.
Deck to Girder Bolts	Good	
Hardware	Fair	Curb rail anchor bolts are missing in a number of places.
Hand Rails/Walkouts	Fair	Hand rail damage noted near the camp end, a few posts have end splits.
Nails	Good	
Overall Deck Condition	Good	Debris accumulation along edge of wearing planks.
Running Planks	Fair	The planks in the wheel tracks appear to have been recently replaced. The remaining planks are in fair condition and showing signs of wear with longitudinal checks and small pockets of rot. Coring the wearing planks identified moisture at the interface with the structural deck.
Sub Deck	Good	Coring the structural planks identified moisture but no signs of rot.
Ties	Good	Coring the ties identified moisture but no signs of rot.
PIERS		
Pier 1		
Bearings	Not Applicable	
Bracing or Sheathing	Good	
Caps	Good	The cap beam is sound. Debris accumulation on the cap beam.
Cribs	Not Applicable	
Dolphins	Not Applicable	
Hardware	Good	
Overall	Good	
Piles or Posts	Good	See AE Inspection Summary for details.
Riprap	Not Applicable	Rip rap typically not used at piers.
Wall	Not Applicable	
Pier 2		
Bearings	Not Applicable	

BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Structure #:	62-035	Site #:	62-035	Road Name:	BLACK CREEK-BOSK LK	Inspection Date:	2012/09/11

Bracing or Sheathing	Good	
Caps	Fair	The camp end cap beam is sound and is in good condition, minor weathering of end with debris accumulation. The woods end cap beam is in fair condition, a vertical end split noted in the downstream face with minor debris accumulation and moss growth on ends of cap. Coring through check in woods end cap identified 150 mm shell with heartwood rot above downstream pile, See AE Inspection Summary for details. Capacity of woods end cap not affected by rot; no bulging or crushing noted.
Cribs	Not Applicable	
Dolphins	Good	
Hardware	Good	
Overall	Good	
Piles or Posts	Fair	Deterioration of two piles identified, heartwood rot in places. See AE Inspection Summary for details.
Riprap	Not Applicable	Rip rap typically not used at piers.
Wall	Not Applicable	
Pier 3		
Bearings	Not Applicable	
Bracing or Sheathing	Good	
Caps	Good	The camp end and woods end cap beams are sound. Minor debris accumulation on the cap beams. Leaching and minor weathering of cap ends. A vertical check 12 mm wide and 85 mm deep was noted on the camp end face of the camp end cap beam.
Cribs	Not Applicable	
Dolphins	Not Applicable	
Hardware	Good	
Overall	Good	
Piles or Posts	Good	A longitudinal check 12 mm wide and 85 mm deep was noted on the camp end face of the 5th pile. See AE Inspection Summary for details.
Riprap	Not Applicable	Rip rap typically not used at piers.
Wall	Not Applicable	
SUPERSTRUCTURE		
Span 1		
Bracing	Not Applicable	
Diaphrams	Good	
Girders	Fair	See AE Inspection Summary for details.
Hardware	Good	
Under Trussing	Not Applicable	
Span 2		

BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Structure #:	62-035	Site #:	62-035	Road Name:	BLACK CREEK-BOSK LK	Inspection Date:	2012/09/11

Bracing	Not Applicable	
Diaphrams	Good	
Girders	Fair	See AE Inspection Summary for details.
Hardware	Good	
Under Trussing	Not Applicable	
Span 3		
Bracing	Not Applicable	
Diaphrams	Good	
Girders	Fair	See AE Inspection Summary for details.
Hardware	Good	
Under Trussing	Not Applicable	
Span 4		
Bracing	Not Applicable	
Diaphrams	Good	
Girders	Fair	See AE Inspection Summary for details.
Hardware	Good	
Under Trussing	Not Applicable	

CHANNEL

Estimated Present Water Level Depth:	0.4	**Estimated Present Water Level Width:**	30.0
Estimated High Water Level Clearance:	2.7		

HAZARDS

High Water:	No	Scour:	Yes	Ice:	No	Debris:	No	Aggradation:	No

Comment: Minor scour at camp end abutment. Sign of scour at woods end abutment.

REPAIRS

#	Status	Priority	Estimate	Description
1	Recommended	High	$1,500.00	Install curb rail anchor bolts as required.
2	Recommended	High	$750.00	Replace/install damaged or missing delineators.
3	Recommended	Medium	$7,200.00	Replace wearing planks as required.
4	Recommended	Medium	$750.00	Replace/install damaged/missing flashing on wingwall soldier piles.
5	Recommended	Medium	$1,000.00	Install bridge ahead signs.
6	Recommended	Low	$500.00	Remove debris from cap beams and exterior stringers.
7	Recommended	Low	$300.00	Remove debris from deck.
8	Recommended	Low	$0.00	N/A
9	Recommended	Low	$0.00	N/A

BC Ministry of Forests and Range

Permanent Bridge Inspection Report

Date Printed: 2013/03/26
User Id: BCEID\WRILEY1
Database: PROD
Report Id: CBR001A

Structure #:	62-035	Site #:	62-035	Road Name:	BLACK CREEK-BOSK LK	Inspection Date:	2012/09/11

MONITORS

#	Description
1	Monitor deterioration of Pier 2 piles.
2	Monitor condition of Pier 2 cap beams.
3	Continue to monitor condition of girders and stringers.
4	Monitor the deterioration of the wing wall soldier piles.
5	Monitor scour at abutments.

GENERAL

Professional Inspection Required?	No	**Regional Review Date:**		**P. Eng Reviewer Name:**	
Replacement Date for full log haul traffic *(year)*:	2020	**Replacement Date for light vehicle traffic** *(year)*:	2020		
Current Load Rating GVW *(tonnes)*:	60	**Design Load GVW** *(tonnes)*:	60	**Design Vehicle Config.:**	L60
Inspector's Estimated Full Log Haul Replacement *(year)*:	2020				

Inspector's Comment:

The bridge is generally in good condition. We identified deterioration in a number of piles and one cap, suggesting that the condition of the bridge is slowly starting to deteriorate.

There are no approach barriers at either end of the bridge. We recommend the Ministry considers installing approach barriers due to steep embankments at the bridge site.

The wearing planks in the wheel tracks appear to have been recently replaced. The remaining wearing planks are showing signs of wear and require replacement.

We observed a number of missing curb rail anchor bolts. The ministry should install the missing anchor bolts.

PEng Reviewer's Comment:

District Staff Comment:

BRIDGE INSPECTION REPORT

BRIDGE INSPECTION PHOTOS

Associated Engineering | GLOBAL PERSPECTIVE. LOCAL FOCUS.

BRITISH COLUMBIA | Ministry of Forests, Lands and Natural Resource Operations

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
62-035	Horsefly	Black Creek - Bosk Lk	0.64	1.0		

Figure 1-1: Upstream elevation.

Figure 1-2: Downstream elevation.

Figure 1-3: Looking upstream.

Figure 1-4: Looking downstream.

Figure 1-5: Looking towards camp end.

Figure 1-6: Looking towards woods end, note no delineators.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
62-035	Horsefly	Black Creek - Bosk Lk	0.64	1.0		

Figure 1-7: Camp end abutment joint.

Figure 1-8: Woods end abutment joint.

Figure 1-9: Upstream curb rail condition.

Figure 1-10: Downstream curb rail condition, note rub damage.

Figure 1-11: Typical missing curb rail anchor bolt.

Figure 1-12: Typical end split in downstream hand rail.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
62-035	Horsefly	Black Creek - Bosk Lk	0.64	1.0		

Figure 1-13: Typical deck condition.

Figure 1-14: Pocket of rot in old planks, note condition of wearing planks.

Figure 1-15: Span 1, stringer 1, upstream face.

Figure 1-16: Span 1, typical interior stringer condition, stringer 5 downstream face shown.

Figure 1-17: Typical span 1, 3 & 4 sub deck condition, span 1 shown.

Figure 1-18: Span 1 stringer 9, downstream face condition, note debris accumulation.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
62-035	Horsefly	Black Creek - Bosk Lk	0.64	1.0		

Figure 1-19: Span 2, girder 1, upstream face condition.

Figure 1-20: Span 2, typical interior girder face, girder 3 shown.

Figure 1-21: Span 2, girder 2, downstream face condition.

Figure 1-22: Span 3, stringer 9, downstream face.

Figure 1-23: Camp end abutment.

Figure 1-24: Camp end abutment ballast wall, gap between planks and sign of scour.

Structure #	Crossing Name	Forest Service Road	User km	CBR km		
62-035	Horsefly	Black Creek - Bosk Lk	0.64	1.0		

Figure 1-25: Woods end abutment.

Figure 1-26: Woods end abutment ballast wall, gap between planks and minor scour.

Figure 1-27: Pier 1 camp end face.

Figure 1-28: Pier 2, woods end face.

Figure 1-29: Pier 2 woods end cap, downstream end split.

Figure 1-30: Pier 3, woods end face.