

MINISTRY OF TRANSPORT AND INFRASTRUCTURE

ISLAND RAIL CORRIDOR CONDITION ASSESSMENT

TRACK CONDITION ASSESSMENT

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PRIMARY CONTACT

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1	SCOPE OF WORK.....	4
2	CONDITION ASSESSMENT	6
2.1	Segment 1: Victoria to Langford.....	9
2.1.1	Road Bed	9
2.1.2	Track Structure	10
2.1.3	Turnouts.....	11
2.2	Segment 2: Langford to Duncan.....	12
2.2.1	Road Bed	12
2.2.2	Track Structure	13
2.2.3	Turnouts.....	14
2.3	Segment 3: Duncan to Nanaimo	15
2.3.1	Road Bed	15
2.3.2	Track Structure	16
2.3.3	Turnouts.....	17
2.4	Segment 4: Nanaimo to Parksville	18
2.4.1	Road Bed	18
2.4.2	Track Structure	19
2.4.3	Turnouts.....	20
2.5	Segment 5: Parksville To Courtenay.....	21
2.5.1	Road Bed	21
2.5.2	Track Structure	22
2.5.3	Turnouts.....	23
2.6	Segment 6: Parksville to Port Alberni	24
2.6.1	Road Bed	24
2.6.2	Track Structure	25
2.6.3	Turnouts.....	26
2.7	Wellcox Yard	27
2.7.1	Road Bed	27
2.7.2	Track Structure	28
2.7.3	Turnouts.....	29
3	SUMMARY	30
	REFERENCES	34

TABLES

TABLE 1: CORRIDOR FEATURES BREAKDOWN	7
TABLE 2: TRACK ASSESSMENT SUMMARY.....	31
TABLE 3: TURNOUT ASSESSMENT SUMMARY	33

FIGURES

FIGURE 1: ISLAND RAIL CORRIDOR SUBDIVISION MAP	5
FIGURE 2: TYPICAL TRACK CROSS SECTION.....	6
FIGURE 3: SEGMENT MAP	8
FIGURE 4: VICTORIA TO LANGFORD - TYPICAL ROAD BED	9
FIGURE 5: VICTORIA TO LANGFORD - TYPICAL TRACK STRUCTURE	10
FIGURE 6: TURNOUT MILE 0.37 GENERAL CONDITION.....	11
FIGURE 7: LANGFORD TO DUNCAN - TYPICAL ROAD BED.....	12
FIGURE 8: LANGFORD TO DUNCAN - TYPICAL TRACK STRUCTURE	13
FIGURE 9: TURNOUT MILE 38.20 GENERAL CONDITION.....	14
FIGURE 10: DUNCAN TO NANAIMO - TYPICAL ROAD BED.....	15
FIGURE 11: DUNCAN TO NANAIMO TYPICAL TRACK STRUCTURE.....	16
FIGURE 12: TURNOUT MILE 70.07 GENERAL CONDITION.....	17
FIGURE 13: NANAIMO TO PARKSVILLE - TYPICAL ROAD BED	18
FIGURE 14: NANAIMO TO PARKSVILLE - TYPICAL TRACK.....	19
FIGURE 15: TURNOUT MILE 75.70 GENERAL PHOTO	20
FIGURE 16: PARKSVILLE TO COURTENAY - TYPICAL ROAD BED	21
FIGURE 17: PARKSVILLE TO COURTENAY - TYPICAL TRACK STRUCTURE	22
FIGURE 18: TURNOUT MILE 139.70 GENERAL PHOTO	23
FIGURE 19: PARKSVILLE TO PORT ALBERNI - TYPICAL ROAD BED	24
FIGURE 20: PARKSVILLE TO PORT ALBERNI- TYPICAL TRACK STRUCTURE	25
FIGURE 21: TURNOUT MILE 34.40 (PORT ALBERNI) GENERAL PHOTO.....	26
FIGURE 22: WELLCOX YARD - TYPICAL ROAD BED	27
FIGURE 23: WELLCOX YARD - TYPICAL TRACK STRUCTURE.....	28

FIGURE 24: TURNOUT WELLCOX YARD. GENERAL	
PHOTO	29

APPENDICES

- A** TRACK INSPECTION REPORTS
- B** TURNOUT INSPECTION REPORTS

1 SCOPE OF WORK

The British Columbia Ministry of Transportation and Infrastructure (MoTI) engaged WSP Canada Group Ltd. (WSP) to conduct a condition assessment, provide restoration improvements and all in costing for reinstatement of rail operations on the Island Rail Corridor between Victoria and Courtenay (including Wellcox spur) and Parksville to Port Alberni.

As part of the Island Rail Corridor Condition Assessment, WSP conducted a field investigations with the support of Southern Railway of Vancouver Island (SVI) and the Island Corridor Foundation (ICF) and has drawn on both party's experience and knowledge base to understand the operations of the Island Rail Corridor.

This report analyzes the current rail infrastructure condition of the Victoria and Port Alberni subdivisions, as shown in Figure 1: Island Rail Corridor Subdivision Map.

The aim of this report summarizes findings and outcomes from the field investigations conducted in September 2019. This report feeds into the Island Rail Corridor Condition Assessment Summary Report.



Figure 1: Island Rail Corridor Subdivision Map

2 CONDITION ASSESSMENT

During the site investigation and analysis phases of this project, both the Victoria (including Wellcox spur) and Port Alberni subdivisions were inspected visually by hi-rail and walking in September 2019. Some sections of the Port Alberni subdivision were not accessible by hi-rail or by foot due to vegetation growth and downed trees along the subdivision.

Representatives from SVI, accompanied WSP for the inspections, both of whom shared their knowledge of the corridor with WSP. The corridor is broken down into six (6) segments, as shown in **Error! Reference source not found.**, to aid in the analysis.

The segments are defined as:

- Segment 1: Victoria to Langford – mile 0.00 to 10.0
- Segment 2: Langford to Duncan – mile 10.0 to 39.7
- Segment 3: Duncan to Nanaimo – mile 39.7 to 72.5
- Segment 4: Nanaimo to Parksville – mile 72.5 to 95.2
- Segment 5: Parksville to Courtenay – mile 95.2 to 139.7
- Segment 6: Port Alberni subdivision – mile 0.00 to 39.4

Elements Assessed

During the site investigation a Good, Fair, Poor rating was applied at each element inspected to grade the overall condition of the railway infrastructure. The Railway infrastructure has been broken down into three (3) main section; Road Bed, Track Structure and turnouts. Figure 2: Typical Track Cross Section shows a typical track cross section outlining the typical railway infrastructure elements.

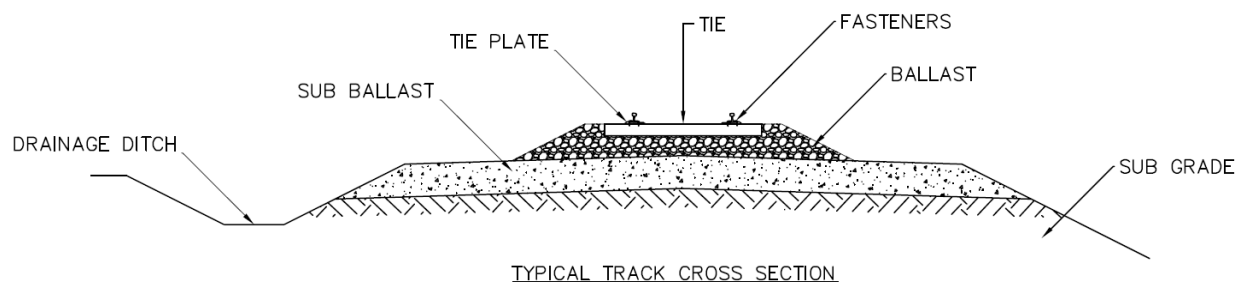


Figure 2: Typical Track Cross Section

The railway elements inspected include:

- | | |
|---|---|
| <ul style="list-style-type: none">— Road Bed<ul style="list-style-type: none">— Track Surface— Drainage— Vegetations— Turnouts | <ul style="list-style-type: none">— Track Structure<ul style="list-style-type: none">— Ballast— Rail— Ties— Tie Plates— Spike and Anchors |
|---|---|

Corridor Overview

The Island Rail Corridor, broken down into six (6) segments (as shown in Figure 3: Segment Map), comprises of the below railway alignment features outlines in Table 1: Corridor Features Breakdown.

Table 1: Corridor Features Breakdown

Segment	Track Length (mi)	Track Length (km)	Total Siding Length (ft)	Total Siding Length (m)	Number of Sidings	Number of Turnouts
Segment 1: Victoria to Langford	10.0	16.2	3360	1024	3	6
Segment 2: Langford to Duncan	29.7	47.8	2001	610	1	3
Segment 3: Duncan to Nanaimo	32.8	52.8	2690	820	3	7
Segment 4: Nanaimo to Parksville	22.7	36.5	5250	1600	4	9
Segment 5: Parksville to Courtenay	44.5	71.6	3756	1145	4	7
Segment 6: Parksville to Port Alberni	39.5	63.5	4904	1195	3	5
Wellcox Yard	2.45	3.94	5.14 (miles)	8.27 (km)	23	34



Figure 3: Segment Map

2.1 SEGMENT 1: VICTORIA TO LANGFORD

2.1.1 ROAD BED



Figure 4: Victoria to Langford - Typical Road Bed

Surface

The surface condition of the Victoria to Langford segment of the Victoria subdivision was determined to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision via hi-rail.

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. However, from the site visits, it was observed that vegetation on the corridor is still prevalent within and around the right of way. The condition of the vegetation impact ranges from poor in some areas to good in others. Typically, in the Victoria to Langford segment the condition of the vegetation is considered fair.

Figure 4 shows a typical example of the road bed between Victoria and Langford

2.1.2 TRACK STRUCTURE



Figure 5: Victoria to Langford - Typical Track Structure

Ballast

Along the Victoria and Langford corridor the ballast was generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition for the length of the corridor. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to range from fair (present but incomplete) to poor (no shoulder).

Rail

The rail condition along the Victoria to Langford segment of the corridor was determined to be generally fair with between 6-10mm of head loss in the inspected zones. There was a mixture of predominantly standard joint bars with a few sections of angled joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. There were no significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot.

Spikes, Anchors & Tie Plates

The spikes, anchors and tie plates are in poor condition on the Victoria to Langford segment. The tie-plates used across the segment, are all single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the corridor. It was observed on site during the inspections that between 44% and 55% off these ties were defective.

Figure 5 shows a typical example of the track structure between Victoria and Langford

2.1.3 TURNOUTS



No condition assessment of any of the mainline turnouts between Victoria and Langford were undertaken during the site investigation. However, the southern Victoria siding turnout was photographed and logged for reference (Figure 6). It is believed that the 5 turnouts between Victoria and Langford are in a generally fair condition, based upon the overall turnout condition of the Victoria subdivision and hi-rail assessment..

Figure 6: Turnout Mile 0.37 General Condition

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports

2.2 SEGMENT 2: LANGFORD TO DUNCAN

2.2.1 ROAD BED



Figure 7: Langford to Duncan - Typical Road Bed

Surface

The surface condition for the Langford to Duncan segment of the Victoria subdivision was noted to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision via hi-rail

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. However, from the site visits, it was observed that vegetation on the corridor is still prevalent within and around the right of way. The condition of the vegetation running along the corridor, range from poor to good condition. However, the segment is considered in a fair condition.

Figure 7 shows a typical example of the road bed between Victoria and Langford

2.2.2 TRACK STRUCTURE



Figure 8: Langford to Duncan - Typical Track Structure

Ballast

The ballast in the Langford to Duncan corridor the ballast was generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition for the length of the corridor. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to be in poor (no shoulder) condition.

Rail

The rail condition along the Langford to Duncan segment of the corridor was determined to be generally fair with between 7-9mm of head loss in the inspected zones. There was a mixture of predominantly angled joint bars with a few sections of standard joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. In one inspected location, a large gap between the rails was noted. However, there were no other significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot.

Spikes, Anchors & Tie Plates

The spikes and anchors are in fair condition on the Langford to Duncan segment. The tie-plates used across the segment are considered in poor condition, due to all inspected locations being single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the corridor. It was observed on site during the inspections that between 41% and 53% off these ties were defective.

Figure 8 shows a typical example of the track structure between Langford and Duncan

2.2.3 TURNOUTS



During a site inspection one turnout condition assessment was undertaken. The 85lb turnout was observed to be in a fair condition with some components of the turnout in poor condition. The ballast and ties were shown to be in poor condition while the rail, frog and anchors were in fair condition with approximately 9mm of rail head loss noted in the inspection. While not all of the 3 mainline turnouts were inspected out on site, it is observed from the hi-rail that the other 2 turnouts are in a similar condition. Figure 9 shows the typical condition of the turnouts between Langford and Duncan

Figure 9: Turnout Mile 38.20 General Condition

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports.

2.3 SEGMENT 3: DUNCAN TO NANAIMO

2.3.1 ROAD BED



Figure 10: Duncan to Nanaimo - Typical Road Bed

Surface

The surface condition for the Duncan to Nanaimo segment of the subdivision was determined to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision via hi-rail

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. However, from the site visits, it was observed that vegetation on the corridor is still prevalent within and around the right of way. The condition of the vegetation impact ranges from poor in some areas to good in others. Typically, in the Duncan to Nanaimo segment the condition of the vegetation is considered fair.

Figure 10 shows a typical example of the road bed between Duncan to Nanaimo.

2.3.2 TRACK STRUCTURE



Figure 11: Duncan to Nanaimo Typical Track Structure

Ballast

The ballast in the Duncan to Nanaimo corridor the ballast was generally observed to be crushed pit run gravel fouled with fines and generally range from fair to poor condition for the length of the corridor. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to be in poor (no shoulder) condition.

Rail

The rail condition along the Duncan to Nanaimo segment of the corridor was determined to be generally fair with 9mm of head loss in the inspected zones. There was a mixture of predominantly standard joint bars with a few sections of angled joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. There were no other significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot.

Spikes, Anchors & Tie Plates

The spikes and anchors are in fair to poor condition on the Duncan to Nanaimo segment. The tie-plates used across the segment are considered in poor condition, due to all inspected locations being single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the corridor. It was observed on site during the inspections that between 38% and 64% off these ties were defective.

Figure 11 shows a typical example of the track structure between Duncan and Nanaimo

2.3.3 TURNOUTS



Figure 12: Turnout Mile 70.07 General Condition

During a site inspection one turnout was noted for reference at the northern wye turnout to Wellcox yard. A condition inspection was not undertaken as the 100lb turnout was noted to be in a fair condition. Current operations and maintenance procedures show that the turnout is in a fair working condition. While not all the 7 mainline turnouts were inspected while out on site, it is observed from the hi-rail that the other turnouts are in a fair condition, similar to the rest of the Victoria subdivision. Figure 12 shows the typical condition of the turnouts between Duncan and Nanaimo.

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports.

2.4 SEGMENT 4: NANAIMO TO PARKSVILLE

2.4.1 ROAD BED



Figure 13: Nanaimo to Parksville - Typical Road Bed

Surface

The surface condition for the Nanaimo to Parksville segment of the subdivision was determined to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision via hi-rail

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. However, from the site visits, it was observed that vegetation on the corridor is still prevalent within and around the right of way. The condition of the vegetation impact ranges from poor in some areas to good in others. Typically, in the Parksville to Nanaimo segment the condition of the vegetation is considered fair.

Figure 13 shows a typical example of the road bed between Nanaimo to Parksville.

2.4.2 TRACK STRUCTURE



Figure 14: Nanaimo to Parksville - Typical Track

Ballast

The ballast in the Nanaimo to Duncan corridor the ballast was generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition, with some sections observed in a fair condition. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to be in fair (present but incomplete) with some sections in poor (no shoulder) condition.

Rail

The rail condition along the Nanaimo to Parksville segment of the corridor was determined to be generally fair with between 2-7mm of head loss in the inspected zones. There was a mixture of predominantly standard joint bars with a few sections of angled joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. In a few inspected locations, metal overflow on the outer edge of the rail was noted. However, there were no other significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot

Spikes, Anchors & Tie Plates

The spikes, anchors and tie plates are in poor condition on the Nanaimo to Parksville segment. The tie-plates used across the segment are single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the corridor. It was observed on site during the inspections that between 47% and 52% off these ties were defective.

Figure 14 shows a typical example of the track structure between Nanaimo and Parksville.

2.4.3 TURNOUTS



During a site inspection one turnout condition assessment was undertaken and one turnout was visually reviewed and logged. Both 85lb turnouts was observed to be in a generally fair condition with some segments of the turnout considered to be poor. The ballast and ties were noted to be in poor condition while the rail, frog and anchors noted to be in fair condition with no head loss measured on site. While not all the 9 mainline turnouts were inspected while out on site, it is observed from the hi-rail that the other turnouts are in a similar condition.

Figure 15 shows the typical condition of the turnouts between Nanaimo and Parksville.

Figure 15: Turnout Mile 75.70 general photo

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports.

2.5 SEGMENT 5: PARKSVILLE TO COURTENAY

2.5.1 ROAD BED



Figure 16: Parksville to Courtenay - Typical Road Bed

between Parksville and Courtenay.

Surface

The surface condition for the Parksville to Courtenay segment of the subdivision was determined to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision via hi-rail.

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. However, from the site visits, it was observed that vegetation on the corridor is still prevalent within and around the right of way. The condition of the vegetation impact ranges from poor in some areas to fair in others. Typically, in the Parksville to Courtenay segment the condition of the vegetation is considered fair.

Figure 16 shows a typical example of the Track road bed

2.5.2 TRACK STRUCTURE



Figure 17: Parksville to Courtenay - Typical Track Structure

Ballast

The ballast in the Parksville to Courtenay corridor the ballast was generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition for the length of the corridor, with a small number of inspected areas noted to be in fair condition. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to be in poor (no shoulder) condition

Rail

The rail condition along the Parksville to Courtenay segment of the corridor was determined to be generally fair with between 7-9mm of head loss in the inspected zones. There was a mixture of predominantly standard joint bars with a few sections of angled joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. There were no other significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot

Spikes, Anchors & Tie Plates

The spikes and anchors are in fair condition on the Parksville to Courtenay segment. The tie-plates used across the segment are considered in poor condition, due to all inspected locations being single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the corridor. It was observed on site during the inspections that between 37% and 74% of these ties were defective, with an average of 58% ties being defective.

Figure 17 shows a typical example of the track structure between Parksville and Courtenay

2.5.3 TURNOUTS



During a site inspection one turnout condition assessment was undertaken at Courtenay station. The 85lb turnout was observed to be in a fair condition with some components of the turnout considered to be poor. The ballast and ties were deemed to be in poor condition while the rail, frog and anchors deemed to be in fair condition with approximately 7-8mm of rail head loss, with a maximum of 11 noted on the through rail. While not all 7 mainline turnouts were inspected while out on site, it is observed from the hi-rail that the other turnouts are in a similar condition.

Figure 18 shows the typical condition of the turnouts between Parksville and Courtenay.

Figure 18: Turnout Mile 139.70 general photo

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports.

2.6 SEGMENT 6: PARKSVILLE TO PORT ALBERNI

2.6.1 ROAD BED



Figure 19: Parksville to Port Alberni - Typical Road Bed

be in a fair condition. The fair condition is located in Port Alberni town center or at the interface with Victoria subdivision.

Figure 19 shows the typical road bed for the Port Alberni subdivision.

Surface

The surface condition for the Port Alberni subdivision was determined to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision on foot.

Drainage

During a wet site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs was noted. This is due to fines and heavy vegetation fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

After discussions with SVI, it was determined that there is no regular vegetation management of the Port Alberni subdivision. It was also discussed that after a storm in last 2018 a large number of trees came down over the track at Cameron Lake. These trees have not been cleared from the line as there is no current railway traffic. The general condition of the vegetation due to these key reasons, is considered to be in a poor condition with only a small area of the inspectable corridor considered to

2.6.2 TRACK STRUCTURE



Figure 20: Parksville to Port Alberni- Typical Track Structure

Ballast

The ballast in the Port Alberni Subdivision was generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition for the length of the corridor apart from Port Alberni being fair. The ballast cribs were noted to be full along most of the corridor with some sections empty or only partially full. The ballast shoulder was observed to range from fair (present but incomplete) to poor (no shoulder) depending on the vegetation in the area.

Rail

The rail condition along the Port Alberni Subdivision was determined to be generally fair with between 1.5-10mm of head loss in the inspected zones. There was a mixture of predominantly angled joint bars with a few sections of standard joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. There were no other significant rail defects noted while onsite, however it should be understood that only a small portion of the overall segment was inspected on foot due to heavy vegetation making the subdivision inaccessible.

Spikes, Anchors & Tie Plates

The spikes, anchors and tie plates are in poor condition on the Port Alberni subdivision. The tie-plates used across the segment are considered in poor condition, due to all inspected locations being single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the length of the subdivision. It was observed on site during the inspections that between 20% and 67% off these ties were defective, with an average of 34% ties being defective.

Figure 20 shows a typical example of the track structure between Parksville and Port Alberni.

2.6.3 TURNOUTS



Figure 21: Turnout Mile 34.40 (Port Alberni)
general photo

During a site inspection three turnout condition assessments were undertaken along the subdivision. All 85lb turnouts was observed to be in a generally fair condition with some parts of the turnout considered to be poor. The ballast was noted to mainly in poor condition while the rail, frog and anchors noted to be in fair condition with approximately 9mm of rail head loss, with a maximum of 11mm noted on the through and closure rails. While not all 5 mainline turnouts were inspected while out on site, it is observed from a walking inspection, that the other turnouts are in a similar condition. Figure 21 shows the typical condition of the turnouts between Nanaimo and Parksville.

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports

2.7 WELLCOX YARD

2.7.1 ROAD BED



Figure 22: Wellcox Yard - Typical Road Bed

Surface

The surface condition for Wellcox Yard off the Victoria subdivision was noted to be in a fair condition. There was no warping or dips in the track profile noted while on site. There were no major cross level concerns observed while inspecting the subdivision on foot.

Drainage

During the site inspection, no significant drainage issues along the corridor were observed. In some locations however, local ponding between the cribs is believed to occur. This is due to fines fouling the ballast void spaces, consequently inhibiting drainage.

Vegetation

It is understood, by discussions with and evident on site, that SVI have a Pest Management Plan (PMP) in place to combat vegetation in the corridor. The condition of the vegetation impact ranges from poor in some areas to good in others. Typically, in the Wellcox yard segment the condition of the vegetation is considered good.

Figure 23 shows a typical example of the track road bed within Wellcox yard.

2.7.2 TRACK STRUCTURE



Figure 23: Wellcox Yard - Typical Track Structure

Ballast

The ballast in Wellcox Yard generally observed to be crushed pit run gravel fouled with fines and generally in a poor condition for the length of the corridor. The ballast cribs were noted to be empty along most of the corridor with some sections full or only partially full. The ballast shoulder was observed to be in fair (present but incomplete) condition.

Rail

The rail condition in Wellcox yard was determined to be generally fair with between 10-11mm of head loss in the inspected zones. There was a mixture of predominantly standard joint bars with a few sections of angled joint bars connecting the rails. The condition of the joint bars was considered to be good if the joints were connected by standard joint bars and poor if they were connected by angled joint bars. There were no other significant rail defects noted while onsite, however it should be understood that only a portion of the overall segment was inspected on foot

Spikes, Anchors & Tie Plates

The spikes, anchors and tie plates are in poor condition in Wellcox yard. The tie-plates used across the segment are considered in poor condition, due to all inspected locations being single shoulder and should be upgraded to double shoulder plates in the restoration phases.

Ties

Wooden ties are used throughout the spur and yard. It was observed on site during the inspections that between approximately 25% off these ties were defective.

Figure 23 shows a typical example of the track structure within Wellcox yard.

2.7.3 TURNOUTS



Figure 24: Turnout Wellcox Yard. General Photo

During a walking site inspection of the yard only one of the 34 turnouts had a condition assessment undertaken. The 85lb turnout was observed to be in a generally fair condition with some components of the turnout considered to be poor. The ballast, ties and anchors were deemed to mainly in poor condition while the rail and frog deemed to be in fair condition with approximately 11mm of rail head loss, with a maximum of 12mm noted on the and closure rails. While not all 34 yard turnouts were inspected while out on site, it is observed from a walking inspection, that the other turnouts are in a similar condition.

Figure 24Figure 15 shows the typical condition of the turnouts between Nanaimo and Parksville.

A site investigation was undertaken in September 2019. For detailed inspection reports refer to Appendix A for Track Inspection Reports and Appendix B for Turnout Inspection Reports

3 SUMMARY

In 2009 the Ministry of Transportation and Infrastructure (MoTI) conducted an evaluation of the E&N Railway Corridor. The evaluation was undertaken by Hatch Mott MacDonald. The report assessed the condition of a range of items. This included, road bed, drainage, track structure, vegetation, yards and facilities, bridges, crossings and communications. The Evaluation of E&N Railway Corridor: Baseline Reference Report concluded the track was in poor condition, due to vegetation, fouled ballast, decayed ties, worn rail and frozen bolts.

WSP conducted track inspections in September 2019, with the detailed reports attached in Appendix A and B. The Island Corridor Foundation (ICF), the owner of the Island Rail corridor, and Southern Railway of Vancouver Island (SVI), the operator of the Island Rail Corridor assisted WSP in conducting field investigations and understanding the operations of the corridor. WSP, conducted informal continuous discussions with SVI to obtain knowledge of issues of the railway and understand the current status of maintenance and inspection regimes.

WSP found, the general railway condition from Victoria and Port Alberni subdivisions, to be in a poor condition. The main issues noted with the track bed, resulting in a poor condition, was the vegetation. The track structure was considered to be in fair condition with rails, joints, spikes, and anchors observed to also be in fair condition. However, the tie plates, ties and ballast deemed to be in poor condition with an average of 52% defective ties for the Victoria Subdivision and 34% defective ties for the Port Alberni subdivision. The rail for both subdivisions, is in fair condition with significant head loss but is suitable for near term proposed use. There were no serious rail defects noted during the inspection. The turnouts along the subdivisions are also considered to be in fair condition with only the ties and ballast considered in poor condition.

A detailed breakdown of the track and turnout inspections findings are found below in Table 2: Track Assessment Summary and Table 3: Turnout Assessment Summary.

Table 2: Track Assessment Summary

WSP Inspection ID	Segment	Subdivision	Start Mileage	End Mileage	Rail Condition	Head loss (mm)	No. of Tie Defects	% of tie defects	Ballast Condition	Shoulder Condition	Surface Condition	Vegetation Condition
V0.270 - Johnson St Bridge	Victoria to Langford	Victoria	0.270	0.365	Fair	6.0	160	55.2%	Poor	Fair	Fair	Poor
V1.390	Victoria to Langford	Victoria	1.390	1.410	Fair	7.5	44	44.0%	Poor	Poor	Fair	Good
V3.644	Victoria to Langford	Victoria	3.644	3.744	Fair	10.0	153	52.8%	Poor	Fair	Fair	Fair
V10.000 - Langford	Victoria to Langford	Victoria	10.000	10.100	Fair	7.0	141	48.6%	Poor	Poor	Fair	Fair
V13.100	Langford to Duncan	Victoria	13.100	13.200	Fair	7.0	155	53.4%	Fair	Fair	Fair	Fair
V26.000	Langford to Duncan	Victoria	26.000	26.100	Fair	9.0	135	46.6%	Poor	Poor	Fair	Good
V35.429 - Cowichan	Langford to Duncan	Victoria	35.429	35.529	Fair	9.0	120	41.4%	Poor	Poor	Fair	Poor
V46.310	Duncan to Nanaimo	Victoria	46.310	46.410	Fair	9.0	185	63.8%	Fair	Poor	Fair	Fair
V59.900	Duncan to Nanaimo	Victoria	59.900	60.000	Fair	Not Observed	112	38.6%	Poor	Poor	Fair	Fair
V73.050	Nanaimo to Parksville	Victoria	73.050	73.150	Fair	9.0	135	46.6%	Poor	Fair	Fair	Good
V77.400 - Wellington siding	Nanaimo to Parksville	Victoria	77.400	77.500	Fair	Not Observed	150	51.7%	Fair	Fair	Fair	Fair
V87.700	Nanaimo to Parksville	Victoria	87.700	87.800	Fair	2.0	153	52.8%	Poor	Poor	Fair	Fair
V99.000	Parksville to Courtenay	Victoria	99.000	99.100	Fair	9.0	170	58.6%	Poor	Poor	Fair	Fair
V108.900	Parksville to Courtenay	Victoria	108.900	109.000	Fair	7.0	145	50.0%	Poor	Poor	Fair	Fair
V110.17 - Dunsmuir siding	Parksville to Courtenay	Victoria	110.170	110.270	Fair	8.0	200	69.0%	Poor	Poor	Fair	Poor
V110.170 - Dunsmuir Main	Parksville to Courtenay	Victoria	110.170	110.270	Fair	7.0	195	67.2%	Poor	Poor	Fair	Poor
V113.460	Parksville to Courtenay	Victoria	113.460	113.560	Fair	9.0	110	37.9%	Poor	Fair	Fair	Fair

WSP Inspection ID	Segment	Subdivision	Start Mileage	End Mileage	Rail Condition	Head loss (mm)	No. of Tie Defects	% of tie defects	Ballast Condition	Shoulder Condition	Surface Condition	Vegetation Condition
V123.240	Parksville to Courtenay	Victoria	123.240	123.340	Fair	8.0	150	51.7%	Fair	Poor	Fair	Fair
V131.327	Parksville to Courtenay	Victoria	131.327	131.427	Fair	8.0	175	60.3%	Poor	Good	Fair	Fair
V139.000	Parksville to Courtenay	Victoria	139.000	139.100	Fair	8.0	215	74.1%	Poor	Poor	Fair	Poor
P0.100 - Port Alberni Jn (V95.250)	Port Alberni	Port Alberni	0.100	0.128	Fair	10.0	50	35.7%	Poor	Fair	Fair	Poor
P3.900 - Virginia Road	Port Alberni	Port Alberni	3.900	3.920	Fair	9.0	51	51.0%	Poor	Fair	Fair	Poor
P8.880 - Melrose rd	Port Alberni	Port Alberni	8.880	8.860	Fair	7.0	75	37.5%	Poor	Fair	Fair	Poor
P12.200 - East of Cameron Lake	Port Alberni	Port Alberni	12.200	12.234	Fair	1.5	71	41.8%	Poor	Poor	Fair	Poor
P20.680 - Dog Creek	Port Alberni	Port Alberni	20.680	20.720	Fair	7.0	40	20.0%	Poor	Poor	Fair	Poor
P21.470 - Summit Lake Bridge	Port Alberni	Port Alberni	21.470	21.510	Fair	8.0	45	22.5%	Poor	Fair	Good	Poor
P22.100 - Arrowsmith Road	Port Alberni	Port Alberni	22.100	22.140	Fair	8.0	40	20.0%	Poor	Poor	Fair	Poor
P33.300 - Smith road	Port Alberni	Port Alberni	33.300	33.340	Fair	7.0	57	28.5%	Poor	Fair	Fair	Poor
P35.800	Port Alberni	Port Alberni	35.700	35.800	Fair	9.0	47	23.5%	Poor	Poor	Fair	Poor
P38.920 - Port Alberni Station	Port Alberni	Port Alberni	38.920	38.960	Fair	Not Observed	53	26.5%	Fair	Fair	Fair	Fair
P39.330 - Port Alberni Terminus	Port Alberni	Port Alberni	39.330	39.430	Fair	Not Observed	135	67.5%	Poor	Poor	Fair	Poor
Wellcox yard scale track switch	Wellcox Yard	Wellcox Yard	Not Observed	Not Observed	Fair	10.0	51	25.5%	Poor	Fair	Fair	Good

Table 3: Turnout Assessment Summary

WSP Inspection ID	Subdivision	Segment	Mile	Yard or Mainline?	Frog Type	Rail weight (lbs)	Rail Wear Through Stock Rail (mm)	Rail Wear Curve Closure Rail (mm)	Rail Wear Through Closure Rail (mm)	Rail Wear Diverging Stock Rail (mm)	Ties	Anchors	Ballast	Guard Rails	Frog	Closure Rails
Vic Siding South End	Victoria	Victoria to Langford	0.37	Mainline	Bolted Rail 100lb - No.9	100	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed
Koksilah siding	Victoria	Langford to Duncan	38.20	Mainline	Bolted Rail 85lb - No.9	85	9.0	Not Observed	Not Observed	Not Observed	Poor	Fair	Poor	Fair	Fair	Fair
North Wye Switch Stockett	Victoria	Duncan to Nanaimo	70.07	Mainline	Solid manganese 100lb - No.9	100	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed
Superior Gas no. 9	Victoria	Nanaimo to Parksville	75.70	Mainline	Bolted Rail 85lb	85	Not Observed	Not Observed	Not Observed	Not Observed	Poor	Not Observed	Poor	Fair	Fair	Not Observed
V77.40	Victoria	Nanaimo to Parksville	77.40	Mainline	Bolted Rigid 85lb	85	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Not Observed	Fair
Courtenay Station	Victoria	Parksville to Courtenay	139.70	Mainline	Bolted Rail 85lb - No.9	85	7.0	7.0	11.0	7.0	Fair	Not Observed	Poor	Not Observed	Fair	Fair
Port Alberni Mainline Switch	Port Alberni	Port Alberni	0.00	Mainline	Bolted Rail 85lb	85	7.0	11.0	11.0	10.0	Fair	Fair	Poor	Fair	Fair	Not Observed
McLean mill	Port Alberni	Port Alberni	34.40	Mainline	Bolted Rail 85lb - No.9	85	Not Observed	7.0	9.0	Not Observed	Good	Fair	Poor	Not Observed	Fair	Not Observed
Port Alberni Station	Port Alberni	Port Alberni	38.77	Mainline	Bolted Rail 85lb - No.7	85	Not Observed	Not Observed	Not Observed	Not Observed	Fair	Fair	Fair	Not Observed	Fair	Not Observed
C3/4 main switch	Wellcox Yard	Wellcox Yard	Not Observed	Yard	Self Guarded Solid Steel - No. 7	85	10.0	12	11	11	Poor	Poor	Poor	Fair	Fair	Not Observed

REFERENCES

- Reports
 - SVI/ICF, 2012-2019, ICF Budget Estimating Report, ICF Budget Estimate
 - Hatch Mott MacDonald, 2009, Evaluation of the E&N Railway Corridor: Baseline Report
 - IBI, 2009, Evaluation of the E&N Railway Corridor: Commuter Rail
 - IBI, 2009, Evaluation of the E&N Railway Corridor: Foundation Report
- Reference drawings/ design information;
 - E&N Railway (from kmz).dwg, Rail Line in CAD format
 - E&N Railway Corridor-Legal ICIS.dwg, Legal Boundary in CAD format
 - MOT MODEL-E N Railway-TRSI.zip, LiDAR and Imagery
 - Canada Lands – Google Earth
 - UberMashup.kml – Transport Canada Google Earth Railway Mapping

APPENDIX

A TRACK INSPECTION REPORTS

APPENDIX



WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
0.27	.365	Short Walking Inspection	Tangent	15

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail	1913	Not Observed	85	39.00	6	2	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single shoulder	Number of Tie Defects 160	Ballast Type Crushed gravel	Ballast Description Ballast fouled with dirt	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments

All ties 53 defective. Likely replace full deck. Some angle joint bars
Replace single shoulder plates with double shoulder if 85 lb ones available.

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo








WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the track's surface and ballast. The surface is dark and covered with dry, brown and yellow leaves. The ballast consists of small, dark, rounded stones.	<p>Surface Photo</p>  A photograph showing the track surface from a distance. The tracks are made of metal rails on wooden ties. In the background, a city skyline is visible under a cloudy sky.	<p>Vegetation Photo</p>  A photograph of the track from a distance, showing a large tree on the right side. The track is surrounded by greenery and a city skyline is visible in the background.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V0.270 -
Johnson St Bridge

Additional Photos

<div>Additional Photo 1</div> <div></div>	<div>Additional Photo 2</div> <div></div>			<div>Additional Photo 5</div> <div></div>
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Additional Photo 1 Description
Johnson Bridge Approach

Additional Photo 2 Description
Johnson Bridge Approach



WSP Track Inspection

WSP Inspection ID
Track Inspection - Victoria
yard (For Reference)

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
Not Observed	Not Observed	Spot Inspection	Mixed	Not Observed

Condition Assessment

Joint Bars Type Not Observed	Tie-Plates Type Not Observed	Number of Tie Defects	Ballast Type Not Observed	Ballast Description No Comment	Are the ballast Cribs full?	Gauge (in) 56.50
Joint Bar Condition	Tie-Plate Condition	Spike/ Anchor Condition	Ballast Condition	Shoulder Condition	Surface Condition	Vegetation Condition

General Tie and Gauge Comments
No Comment - For Reference Only

Ballast, Surface & Vegetation Comments
No Comment - For Reference Only



WSP Track Inspection

WSP Inspection ID
Track Inspection - Victoria
yard (For Reference)

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection - Victoria
yard (For Reference)

Ties and Gauge Photos

Tie-Plates Photo	Anchor / Spikes Photo	Tie Photo	Typical Track Structure Photo
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WSP Track Inspection

WSP Inspection ID
Track Inspection - Victoria
yard (For Reference)

Ballast and Surface Photos

Ballast Photo	Surface Photo	Vegetation Photo
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WSP Track Inspection

WSP Inspection ID
Track Inspection V3.644

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
3.644	3.744	Short Walking Inspection	Mixed	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail	1911	Not Observed	85		10	3	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Sholder	Number of Tie Defects 153	Ballast Type Pitt run	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments

153 in .1 mile. 2900 ties per mile on avg or 290 ties per tenth of mile

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V3.644

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V3.644

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail		 Chipping side and mushroom outside	



WSP Track Inspection

WSP Inspection ID
Track Inspection V3.644

Ties and Gauge Photos

Tie-Plates Photo	Anchor / Spikes Photo	Tie Photo	Typical Track Structure Photo
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WSP Track Inspection

WSP Inspection ID
Track Inspection V3.644

Ballast and Surface Photos

Ballast Photo	Surface Photo	Vegetation Photo
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WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
1.390	1.410	Short Walking Inspection	Tangent	15

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85	33.00	7.5	2	Fair	No Comment

Joint Bars Type Angle and standard 4 hole.	Tie-Plates Type Single shoulder 4 hole	Number of Tie Defects 44	Ballast Type Pitt run gravel with dirt	Ballast Description Fouled	Are the ballast Cribs full? No	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Good

General Tie and Gauge Comments

44 defective ties
To meet class 3 only need to replace 6 ties
Plate 6.5x 98.5

Ballast, Surface & Vegetation Comments

Poor condition.



WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	<div><p>No comment</p></div>		



WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the railway track's surface, showing the wooden sleepers, the gravel ballast, and some debris.	<p>Surface Photo</p>  A photograph of the railway track surface, showing the wooden sleepers and the gravel ballast. The track is bordered by a concrete wall with colorful graffiti on the right side.	<p>Vegetation Photo</p>  A photograph of the railway track, showing the wooden sleepers and the gravel ballast. The track is bordered by a concrete wall with colorful graffiti on the right side. There is some vegetation on the left side of the track.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V1.390

Additional Photos

Additional Photo 1





WSP Track Inspection

WSP Inspection ID
Track Inspection V10.000 -
Langford

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
10.000	10.100	Short Walking Inspection	Tangent	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail			85		7	4	Fair	No Comment

Joint Bars Type Standards	Tie-Plates Type Single Shoulder	Number of Tie Defects 141	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
Per one tenth mile

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V10.000 -
Langford

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V10.000 -
Langford

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	 A photograph showing a close-up view of a rusty, weathered rail on a track. The rail is positioned on wooden ties, and the surrounding area is covered with gravel and some vegetation. The rail shows signs of wear and corrosion.		



WSP Track Inspection

WSP Inspection ID
Track Inspection V10.000 -
Langford

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo








WSP Track Inspection

WSP Inspection ID
Track Inspection V10.000 -
Langford

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a railway track. The track consists of two parallel steel rails supported by wooden sleepers. The ballast is composed of small, dark, irregularly shaped stones. The surface of the track is covered with a layer of dry, yellowish-brown grass and some small green plants.	<p>Surface Photo</p>  A photograph showing the surface of the railway track from a side-on perspective. The track is made of steel rails and wooden sleepers. The surrounding area is covered with dry, yellowish-brown grass and some green vegetation. In the background, there are trees and a cloudy sky.	<p>Vegetation Photo</p>  A photograph showing the vegetation along the railway track. The track is made of steel rails and wooden sleepers. The surrounding area is covered with dry, yellowish-brown grass and some green vegetation. In the background, there are trees and a cloudy sky.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
13.100	13.200	Short Walking Inspection	Curve	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		7	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 155	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Fair	Ballast Condition Fair	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments

Cut ties from derailment. Replaced ties yellow ties have double shoulder plates. Single Shoulder plates everywhere else.

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Ballast and Surface Photos

Ballast Photo	Surface Photo	Vegetation Photo
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WSP Track Inspection

WSP Inspection ID
Track Inspection V13.100

Additional Photos

Additional Photo 1





WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
26.000	26.100	Short Walking Inspection	Curve	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail			85		9	0	Fair	No Comment

Joint Bars Type Angle	Tie-Plates Type Single Shoulder	Number of Tie Defects 135	Ballast Type Pit run gravel	Ballast Description Fouled	Are the ballast Cribs full? No	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Fair	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Good

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	 <p>Joint gap</p>		



WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the railway track's surface and ballast. The image shows the wooden sleepers, the metal rails, and the gravel ballast. There are some puddles of water on the surface, and the area appears to be wet and mossy.	<p>Surface Photo</p>  A photograph showing a long, straight stretch of the railway track. The track is made of wooden sleepers and metal rails, and it is surrounded by a gravel ballast. The track is wet, and there are some puddles of water on the surface. The background shows a dense forest.	<p>Vegetation Photo</p>  A photograph of the railway track winding through a dense forest. The track is made of wooden sleepers and metal rails, and it is surrounded by a gravel ballast. The forest is lush with green trees and foliage, and the sky is overcast.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V26.000

Additional Photos

<div>Additional Photo 1</div>  A close-up photograph showing water pooling on the wooden sleepers of a railway track. The water is dark and reflects the surrounding environment. The sleepers are weathered and show signs of moss or algae growth.	<div>Additional Photo 2</div>  A photograph of a railway track curving through a dense forest. The track is made of wooden sleepers and metal rails. The surrounding area is lush with green trees and foliage, and the ground is covered in grass and small plants.			
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Additional Photo 1 Description

Water ponding



WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
35.429	35.529	Short Walking Inspection	Tangent	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		9	3	Fair	No Comment

Joint Bars Type Angled	Tie-Plates Type Single Shoulder	Number of Tie Defects 120	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Fair	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Ballast and Surface Photos

Ballast Photo	Surface Photo	Vegetation Photo
		 A photograph showing a close-up view of a railway track. The track is made of wooden ties and metal rails. There is significant vegetation growth along the track, including tall grasses and weeds. The ground around the track is covered in dry leaves and twigs.



WSP Track Inspection

WSP Inspection ID
Track Inspection V35.429 -
Cowichan

Additional Photos

Additional Photo 1 	Additional Photo 2 	Additional Photo 3 		
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Additional Photo 2 Description
Station cowichan



WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
12/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
46.310	46.410	Short Walking Inspection	Mixed	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		9	0	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 185	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Fair	Ballast Condition Fair	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
Poor Condition

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Ballast and Surface Photos


<p>Ballast Photo</p>  A close-up photograph of the railway track's surface, showing the wooden sleepers, the gravel ballast, and the steel rails.	<p>Surface Photo</p>  A photograph showing a long, straight view of the railway track, with the rails and sleepers receding into the distance under a clear sky.	<p>Vegetation Photo</p>  A photograph of the railway track, showing the rails, sleepers, and ballast, with dense green vegetation and trees visible on the right side of the track.
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WSP Track Inspection

WSP Inspection ID
Track Inspection - 46.310

Additional Photos

<p>Additional Photo 1</p> 				
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WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
59.900	60.000	Short Walking Inspection	Mixed	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	80		Not Observed	Not Observed	Fair	No Comment

Joint Bars Type Mixed	Tie-Plates Type Mixed	Number of Tie Defects 112	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments

Both angle and standard joint bars. Single and double shoulder plates. 80 and 85 lb rail. 85 lb head loss =9 flange loss =1

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo








WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a railway track. The rails are visible, and the ballast consists of dark, wet, and mossy material, likely gravel or crushed stone, showing signs of weathering and organic growth.	<p>Surface Photo</p>  A photograph showing the surface of the railway track, focusing on the rails and the surrounding ballast. The track is surrounded by dense green foliage and trees, suggesting a rural or forested area.	<p>Vegetation Photo</p>  A photograph showing the vegetation surrounding the railway track. The track is flanked by dense green trees and foliage, with the rails visible in the foreground.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V59.900

Additional Photos

<div>Additional Photo 1</div> <div></div>	<div>Additional Photo 2</div> <div></div>			
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Additional Photo 1 Description
Standard joint bar

Additional Photo 2 Description
Double shoulder plate



WSP Track Inspection

WSP Inspection ID
Track Inspection V73.050

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
73.050	73.150	Short Walking Inspection	Curve	20

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		9	1	Fair	Low rail hl 9 fl 1 High rail hl 9 fl 0

Joint Bars Type Standard	Tie-Plates Type Single shoulder	Number of Tie Defects 135	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Good

General Tie and Gauge Comments

No anchors on track.
Low rail head loss 9mm flange 1mm
High rail head loss 9mm flange 0mm

Ballast, Surface & Vegetation Comments

Fair, Still needs ties plates anchors ballast



WSP Track Inspection

WSP Inspection ID
Track Inspection V73.050

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V73.050

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail	 Metal overflow		



WSP Track Inspection

WSP Inspection ID
Track Inspection V73.050

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V73.050

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
77.400	77.500	Short Walking Inspection	Mixed	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	80		Not Observed	Not Observed	Fair	Track head loss gauge doesn't work ok 80lb

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 150	Ballast Type Pit run gravel	Ballast Description Pitt run gravel	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Fair	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments

Double shoulder plates on replaced ties.
Track head loss gauge doesn't work ok 80lb

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo

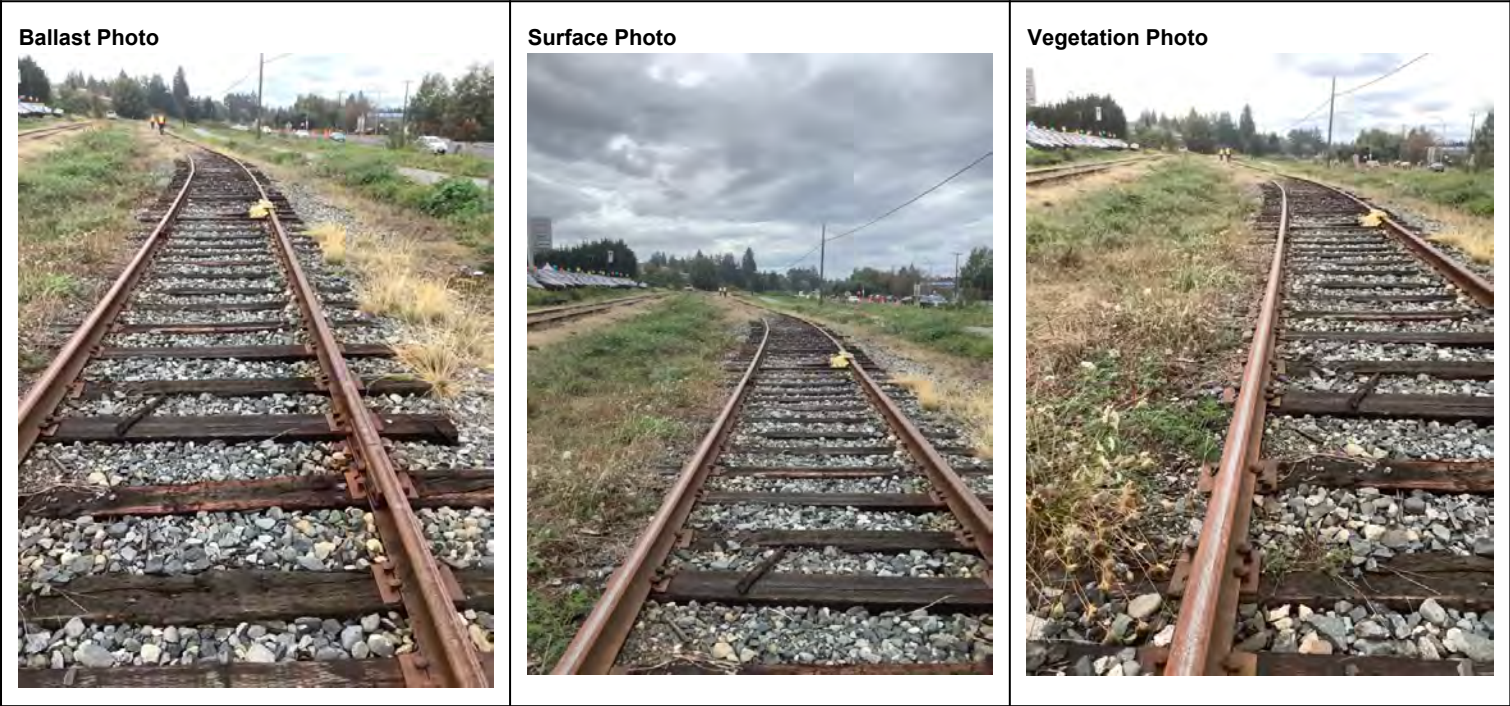




WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Ballast and Surface Photos





WSP Track Inspection

WSP Inspection ID
Track Inspection V77.400 -
Wellington siding

Additional Photos

Additional Photo 1



Additional Photo 1 Description
Derail



WSP Track Inspection

WSP Inspection ID
Track Inspection V87.700

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
87.700	87.800	Short Walking Inspection	Mixed	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	100		2	0	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 153	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V87.700

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V87.700

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V87.700

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V87.700

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V99.000

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
99.000	99.100	Short Walking Inspection	Mixed	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		9	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single and Double Shoulders	Number of Tie Defects 170	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V99.000

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V99.000

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V99.000

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo








WSP Track Inspection

WSP Inspection ID
Track Inspection V99.000

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the railway track's surface. It shows two parallel steel rails with wooden sleepers in between. The ground is covered with grey gravel ballast, some dry leaves, and small patches of grass.	<p>Surface Photo</p>  A photograph showing a long, straight stretch of the railway track receding into the distance. The track consists of steel rails and wooden sleepers, surrounded by a mix of gravel ballast and dry vegetation.	<p>Vegetation Photo</p>  A photograph of the railway track from a side-on perspective, showing the steel rail and wooden sleepers. The track is flanked by dense green trees and bushes, with some dry leaves scattered on the ground.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V108.900

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
108.900	109.000	Short Walking Inspection	Tangent	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail	1948	Algoma	85		7	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 145	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V108.900

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V108.900

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			
	General		



WSP Track Inspection

WSP Inspection ID
Track Inspection V108.900

Ties and Gauge Photos

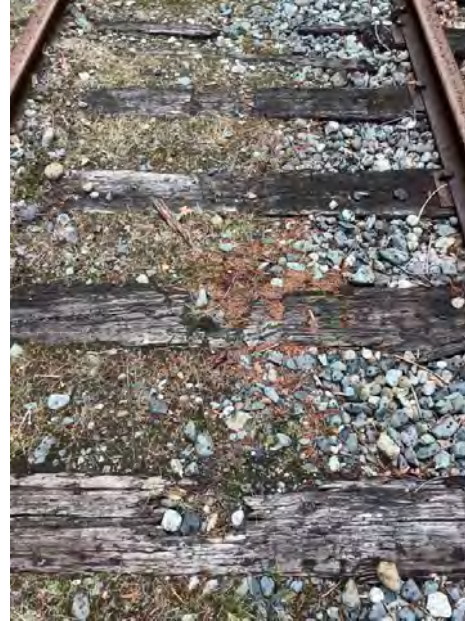
Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V108.900

Ballast and Surface Photos

<p>Ballast Photo</p>  A photograph showing a close-up view of the ballast (gravel) and wooden ties between the rails of a railway track. The ballast appears to be a mix of grey and brown stones, and the ties are dark and weathered.	<p>Surface Photo</p>  A photograph showing a close-up view of the surface of the railway track, focusing on the wooden ties and the gravel ballast. The ties are dark and show signs of wear and decay.	<p>Vegetation Photo</p>  A photograph showing a close-up view of the railway track, focusing on the wooden ties and the gravel ballast. The ties are dark and show signs of wear and decay.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
110.170	110.270	Short Walking Inspection	Tangent	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		8	1	Fair	No Comment

Joint Bars Type Angle	Tie-Plates Type Single Shoulder	Number of Tie Defects 200	Ballast Type No ballast observed/ Mud	Ballast Description Fouled with mud	Are the ballast Cribbs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
Poor



WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph showing the ballast and surface of a track. The ballast is dark and appears to be covered in moss or algae. The surface is also covered in vegetation.	<p>Surface Photo</p>  A wide-angle photograph showing the track surface and the surrounding vegetation. A person is visible in the distance, standing on the track.	<p>Vegetation Photo</p>  A close-up photograph showing the vegetation growing along the track. The vegetation is dense and appears to be covering the track bed.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V110.17
- Dunsmuir siding

Additional Photos

<p>Additional Photo 1</p> 	<p>Additional Photo 2</p> 			
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WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
13/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
110.170	110.270	Short Walking Inspection	Tangent	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		7	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 195	Ballast Type Pitt run gravel	Ballast Description Overgrown/ Moss	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
Poor



WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a railway track. The image shows a cross-section of the track bed, with dark, wet-looking ballast material and a layer of green moss or algae growing on the surface.	<p>Surface Photo</p>  A photograph showing a long, straight view of the railway track surface. The track is covered in a thick layer of green moss or algae, and the wooden ties are visible. The track extends into the distance, flanked by grassy areas.	<p>Vegetation Photo</p>  A photograph of the railway track showing significant vegetation growth. The track is covered in a thick layer of green moss or algae, and there is a lot of dry, brown grass and weeds growing along the sides of the track.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V 110.170
- Dunsmuir Main

Additional Photos

<div>Additional Photo 1</div> 	<div>Additional Photo 2</div> 			
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Additional Photo 1 Description
Crushed tie

Additional Photo 2 Description
No shoulder



WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
18/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
113.460	113.560	Short Walking Inspection	Curve	30

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		9	6	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 110	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail	 A photograph of a right rail track. The rail is dark and appears to be made of steel. It is surrounded by gravel and some vegetation. The photo shows a close-up of the rail and the surrounding track bed.		



WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a railway track. The image shows the dark, weathered wooden sleepers and the grey, gravelly ballast. There are some small, colorful leaves scattered on the surface.	<p>Surface Photo</p>  A close-up photograph of the surface and ballast of a railway track. The image shows the dark, weathered wooden sleepers and the grey, gravelly ballast. There are some small, colorful leaves scattered on the surface.	<p>Vegetation Photo</p>  A photograph of a railway track receding into the distance. The track is flanked by dense green vegetation and trees. The perspective is from the side of the track, looking down its length.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V113.460

Additional Photos

<p>Additional Photo 1</p> 	<p>Additional Photo 2</p> 			
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WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
18/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
123.240	123.340	Short Walking Inspection	Curve	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		8	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 150	Ballast Type Pitt run gravel	Ballast Description Some new ballast on top	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Fair	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the railway track's surface, showing the wooden sleepers, the gravel ballast, and some moss growing between the sleepers.	<p>Surface Photo</p>  A photograph showing the track surface from a distance, highlighting the gravel ballast and the wooden sleepers. The track curves slightly to the right in the background.	<p>Vegetation Photo</p>  A photograph of the track showing significant moss growth on the wooden sleepers and the surrounding area. The track curves to the right, and there is dense green vegetation on the embankment in the background.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V123.240

Additional Photos

<div>Additional Photo 1</div>  A photograph of a railroad track curving through a dense forest. The track is made of gravel and steel rails, and the surrounding trees are green and yellow, suggesting autumn.				
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WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
18/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
131.327	131.427	Short Walking Inspection	Curve	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		8	2	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Double shoulder	Number of Tie Defects 175	Ballast Type Pitt run gravel	Ballast Description Fouled but looks like some relatively recent ballast surfacing	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Fair	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Good	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	 A photograph showing a close-up view of a railroad track. The left rail is visible, running parallel to a gravel bed. The track is surrounded by dense green foliage and trees, suggesting a rural or forested area. The gravel bed is composed of small, light-colored stones.		



WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo


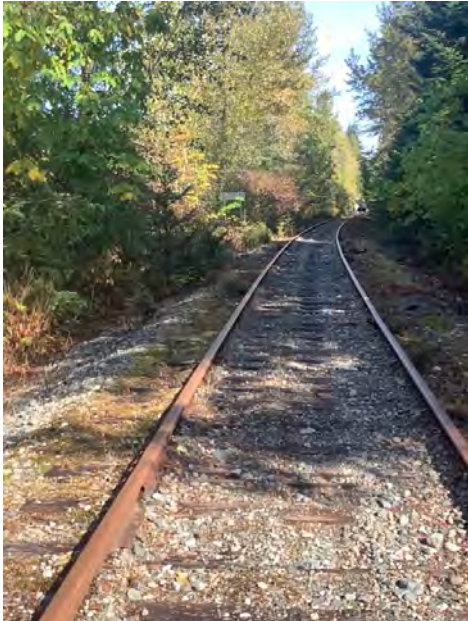




WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Ballast and Surface Photos


<p>Ballast Photo</p>  A close-up photograph of the track surface, showing the gravel ballast and the wooden ties. The track is straight and runs into the distance.	<p>Surface Photo</p>  A photograph of the track surface, showing the gravel ballast and the wooden ties. The track is straight and runs into the distance.	<p>Vegetation Photo</p>  A photograph of the track, showing the gravel ballast and the wooden ties. The track is surrounded by dense green trees and foliage.
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WSP Track Inspection

WSP Inspection ID
Track Inspection V131.327

Additional Photos

<div>Additional Photo 1</div> 				
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Additional Photo 1 Description
Good shoulder



WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Date
18/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
139.000	139.100	Short Walking Inspection	Tangent	25

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		8	3	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 215	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? No	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
No Comment

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection V139.000

Additional Photos

<div>Additional Photo 1</div> <div></div>	<div>Additional Photo 2</div> <div></div>	<div>Additional Photo 3</div> <div></div>		
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Additional Photo 1 Description
Functioning drainage culvert

Additional Photo 2 Description
Functioning drainage culvert

Additional Photo 3 Description
Adjacent path looking south.



WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
0.100	0.128	Short Walking Inspection	Tangent	15

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not observed	85		10	0	Fair	No Comment

Joint Bars Type Angled	Tie-Plates Type Single Shoulder	Number of Tie Defects 50	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments

Defective ties 50/140
Location - Port Alberni main track 0.1 between siding and switch or 95.25 Vic sub

Ballast, Surface & Vegetation Comments

No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Ballast and Surface Photos


<p>Ballast Photo</p>  A close-up photograph showing the ballast and surface of a track. The ballast consists of dark, weathered wooden ties and a layer of gravel. There is some green vegetation growing between the ties.	<p>Surface Photo</p>  A photograph showing the surface of the track, including the wooden ties and the surrounding vegetation. The track is flanked by tall grass and shrubs.	<p>Vegetation Photo</p>  A photograph showing the vegetation along the track. The track is flanked by tall grass and shrubs, with a red building visible in the background.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P0.100 -
Port Alberni Jn (V95.250)

Additional Photos

<p>Additional Photo 1</p> 				
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WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
3.900	3.920	Short Walking Inspection	Tangent	15

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		9	0	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 51	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full?	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 51/100

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Ballast and Surface Photos

<p>Ballast Photo</p>  A photograph showing a close-up view of the ballast surface, which is covered with green grass and weeds. A red string is visible on the left side of the frame.	<p>Surface Photo</p>  A photograph showing a close-up view of the surface, which is covered with green grass and weeds. A red string is visible on the left side of the frame.	<p>Vegetation Photo</p>  A photograph showing a close-up view of the vegetation, which is covered with green grass and weeds. A red string is visible on the left side of the frame.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P3.900 -
Virginia Road

Additional Photos

<p>Additional Photo 1</p> 		<p>Additional Photo 3</p> 		
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WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
8.880	8.860	Short Walking Inspection	Tangent	15

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		7	2	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 75	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 75/200

Ballast, Surface & Vegetation Comments
Bad ballast drainage (See Additional Photo 01)



WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspecton P8.880 -
Melrose rd

Additional Photos

Additional Photo 1



Additional Photo 1 Description
Non draining ballast



WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
12.200	12.234	Short Walking Inspection	Curve	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	100		1.5	8	Fair	RIGHT rail high side of curve

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 71	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 71/170

Ballast, Surface & Vegetation Comments
Lots of trees fallen across tracks



WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Ballast and Surface Photos




<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a railway track. The track is heavily overgrown with green grass and weeds. The ballast consists of dark, wet stones and gravel. The surface is made of dark, wet wooden ties.	<p>Surface Photo</p>  A photograph showing the surface of the track, including the wooden ties and the surrounding vegetation. The track is surrounded by dense green foliage and trees. The surface is wet and reflective.	<p>Vegetation Photo</p>  A photograph showing the vegetation surrounding the track. The track is surrounded by dense green foliage and trees. The vegetation is thick and overgrown, with many leaves visible in the foreground.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P 12.200
- East of Cameron Lake

Additional Photos

<div>Additional Photo 1</div> 	<div>Additional Photo 2</div> 	<div>Additional Photo 3</div> 		
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Additional Photo 1 Description
Bridge

Additional Photo 2 Description
Bridge with downed tree



WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
20.680	20.720	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		7	2	Fair	No Comment

Joint Bars Type Angle	Tie-Plates Type Single Shoulder	Number of Tie Defects 40	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 40/200

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the ballast and surface of a track. The ballast is dark and appears to be covered in moss or algae. The surface is made of dark, rectangular stones.	<p>Surface Photo</p>  A photograph of the track surface showing a series of dark, rectangular stones. There is significant vegetation growing between the stones, including tall grasses and small plants.	<p>Vegetation Photo</p>  A photograph of the track from a distance, showing it surrounded by dense green vegetation. The track is made of dark stones and is flanked by tall grasses and other plants.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P20.680 -
Dog Creek

Additional Photos

<div>Additional Photo 1</div> 	<div>Additional Photo 2</div> 			
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Additional Photo 2 Description
Dog creek crossing



WSP Track Inspection

WSP Inspection ID
Track Inspection P21.470 -
Summit Lake Bridge

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
21.470	21.510	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		No Observed	85		8	4	Fair	No Comments

Joint Bars Type Angled	Tie-Plates Type Single Shoulder	Number of Tie Defects 45	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Good	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 45/200

Ballast, Surface & Vegetation Comments
No Comments



WSP Track Inspection

WSP Inspection ID
Track Inspection P21.470 -
Summit Lake Bridge

Photo Library

Site Photo








WSP Track Inspection

WSP Inspection ID
Track Inspection P21.470 -
Summit Lake Bridge

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail	 Summit lake bridge		



WSP Track Inspection

WSP Inspection ID
Track Inspection P21.470 -
Summit Lake Bridge

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P21.470 -
Summit Lake Bridge

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
22.100	22.140	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		8	2	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 40	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 40/200

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	 No comment	 Loon lake beaver dam	



WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph showing the ballast (gravel) and the surface of the track. The surface appears to be made of wooden planks or sleepers, and there is significant vegetation growing between the tracks.	<p>Surface Photo</p>  A photograph showing the surface of the track, which is covered in gravel and has a wooden plank running across it. There is a lot of green vegetation growing along the side of the track.	<p>Vegetation Photo</p>  A photograph showing the vegetation along the track. There is a dense line of green bushes and trees on the right side of the track, and some grass and weeds are growing on the left side.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P22.100 -
Arrowsmith Road

Additional Photos

<div>Additional Photo 1</div> <div></div>	<div>Additional Photo 2</div> <div></div>	<div>Additional Photo 3</div> <div></div>	<div>Additional Photo 4</div> <div></div>	<div>Additional Photo 5</div> <div></div>
<div>Additional Photo 1 Description</div> <div>Rock fall</div>	<div>Additional Photo 2 Description</div> <div>Drainage swale</div>	<div>Additional Photo 3 Description</div> <div>Loon lake bridge</div>	<div>Additional Photo 4 Description</div> <div>Metal overflow</div>	<div>Additional Photo 5 Description</div> <div>Loon lake bridge rail 80</div>



WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
33.300	33.340	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Right Rail		Not Observed	85		7	1	Fair	No Comment

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 57	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments

Defective ties 57/200

Ballast, Surface & Vegetation Comments

Track not in bad shape. Needs vegetation clearing. Could run one train a week but if you are moving loads track will deteriorate quickly. Bad ballast and drainage.



WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Right Rail	 A photograph showing a close-up of a rusty steel rail on a track. The rail is surrounded by green vegetation, including grass and small plants, and is supported by wooden ties and gravel ballast.		



WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Ballast and Surface Photos


<p>Ballast Photo</p>  A close-up photograph of the railway track's ballast and surface. The image shows the dark, wet-looking wooden sleepers and the grey gravel ballast. There is some green vegetation growing between the sleepers.	<p>Surface Photo</p>  A photograph showing the surface of the railway track. The view is from a low angle looking down the track, showing the wooden sleepers and the gravel ballast. The track is flanked by dense green vegetation.	<p>Vegetation Photo</p>  A photograph showing the vegetation along the railway track. The image captures the dense green foliage and ferns growing on either side of the track, with the track itself visible in the center.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P33.300 -
Smith road

Additional Photos

<p>Additional Photo 1</p> 				
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WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
35.700	35.800	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		9	1	Fair	Track condition in this section is fair. Requirements are not as high here. Just take care of vegetation.

Joint Bars Type Standard	Tie-Plates Type Single Shoulder	Number of Tie Defects 47	Ballast Type Pitt run gravel	Ballast Description Fouled.	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments
Defective ties 47/200

Ballast, Surface & Vegetation Comments
Ballast fouled with mud.

No.
00022

6F80A1FF-203C-4632-A69C-48C8BF9E7AA2



WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph of the track's ballast and surface. The image shows dark, wet, and uneven ground with patches of green grass and fallen yellow and brown leaves. A metal rail is visible on the left side of the frame.	<p>Surface Photo</p>  A photograph showing the track surface from a distance. The track is covered in a layer of wet, dark material, possibly mud or water, with green grass and fallen leaves scattered across it. The track extends into the distance, flanked by dense green vegetation.	<p>Vegetation Photo</p>  A photograph showing the track surrounded by dense green vegetation. The track is covered in a layer of wet, dark material, possibly mud or water, with green grass and fallen leaves scattered across it. The track extends into the distance, flanked by dense green vegetation.
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WSP Track Inspection

WSP Inspection ID
Track Inspection P35.800

Additional Photos

<p>Additional Photo 1</p> 	<p>Additional Photo 2</p> 	<p>Additional Photo 3</p> 		
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WSP Track Inspection

WSP Inspection ID
Track Inspection P39.330 -
Port Alberni Terminus

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
39.330	39.430	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	80		Not Observed	Not Observed	Fair	Can't see ties because of vegetation.

Joint Bars Type Angle	Tie-Plates Type Single Shoulder	Number of Tie Defects 135	Ballast Type Mud	Ballast Description Fouled	Are the ballast Cribs full?	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Poor	Surface Condition Fair	Vegetation Condition Poor

General Tie and Gauge Comments

135/200 defective. Hard too see ties because of vegetation.
Port Property.

Ballast, Surface & Vegetation Comments

Poor



WSP Track Inspection

WSP Inspection ID
Track Inspection P39.330 -
Port Alberni Terminus

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection P39.330 -
Port Alberni Terminus

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection P39.330 -
Port Alberni Terminus

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P39.330 -
Port Alberni Terminus

Ballast and Surface Photos

Ballast Photo



Surface Photo



Vegetation Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P38.920 -
Port Station

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Date
17/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
38.920	38.960	Short Walking Inspection	Tangent	10

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	80		Not Observed	Not Observed	Fair	No Comment

Joint Bars Type Angle	Tie-Plates Type Single Shoulder	Number of Tie Defects 53	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? Yes	Gauge (in) 56.50
Joint Bar Condition Poor	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Fair	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Fair

General Tie and Gauge Comments
Defective ties 53/200

Ballast, Surface & Vegetation Comments
Surface has some low joints
Overall fair structure



WSP Track Inspection

WSP Inspection ID
Track Inspection P38.920 -
Port Station

Photo Library

Site Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P38.920 -
Port Station

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail	 No defect	 No defect	 No defect



WSP Track Inspection

WSP Inspection ID
Track Inspection P38.920 -
Port Station

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection P38.920 -
Port Station

Ballast and Surface Photos





WSP Track Inspection

WSP Inspection ID
Track Inspection - Wellcox
yard scale track switch

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Wellcox Yard
Date
18/09/2019

Start Mileage	End Mileage	Inspection Type	Alignment	Speed (mph)
		Short Walking Inspection	Mixed	5

Condition Assessment

Rail Condition

Rail	Rail Year Rolled	Metal Type	Weight (lbs)	Length (ft)	Headloss Estimate (mm)	Flange Estimate (mm)	Rail Condition	Comment
Left Rail		Not Observed	85		10	2	Fair	

Joint Bars Type Standard	Tie-Plates Type Mixed	Number of Tie Defects 51	Ballast Type Pitt run gravel	Ballast Description Fouled	Are the ballast Cribs full? No	Gauge (in) 56.50
Joint Bar Condition Fair	Tie-Plate Condition Poor	Spike/ Anchor Condition Poor	Ballast Condition Poor	Shoulder Condition Fair	Surface Condition Fair	Vegetation Condition Good

General Tie and Gauge Comments
Defective ties 51/200

Ballast, Surface & Vegetation Comments
No Comment



WSP Track Inspection

WSP Inspection ID
Track Inspection - Wellcox
yard scale track switch

Photo Library

Site Photo






WSP Track Inspection

WSP Inspection ID
Track Inspection - Wellcox
yard scale track switch

Rail Condition

Rail	Rail Defect Photo 1	Rail Defect Photo 2	Rail Defect Photo 3
Left Rail			



WSP Track Inspection

WSP Inspection ID
Track Inspection - Wellcox
yard scale track switch

Ties and Gauge Photos

Tie-Plates Photo



Anchor / Spikes Photo



Tie Photo



Typical Track Structure Photo





WSP Track Inspection

WSP Inspection ID
Track Inspection - Wellcox
yard scale track switch

Ballast and Surface Photos

<p>Ballast Photo</p>  A close-up photograph showing the ballast (gravel) and wooden ties of a railway track. The ties are dark and weathered, and the ballast is composed of small, light-colored stones.	<p>Surface Photo</p>  A photograph showing a long view of the track surface, including the ties and ballast. The track is straight and extends into the distance. In the background, there are some industrial buildings and trees.	<p>Vegetation Photo</p>  A photograph showing the track with vegetation on the sides. The track is straight and extends into the distance. In the background, there are some industrial buildings and trees.
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APPENDIX

B TURNOUT INSPECTION REPORTS

APPENDIX



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Vic Siding South End

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
12/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	0.37	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
100	Hardwood	Bolted rigid no. 9

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
Not Observed	Not Observed	Not Observed	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
Not Observed	Not Observed	Not Observed	Not Observed

Gauge Comment
No Comment

Component Condition

Component

Component	Condition	Comment
Frog		No Comment
Guard Rails		No Comment
Closure Rails		No Comment
Ties		No Comment
Anchors		No Comment
Ballast		No Comment



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Vic Siding South End

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

Not Observed

Comments and Remarks

Condition Comments

No Comment

No.
00003

BD14D77E-2185-42C2-BBA0-9991E7BEDFE7

Photo Library

Turnout Photo





WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Vic Siding South End

Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Guard Rails			
Closure Rails			
Ties			
Anchors			
Ballast			

No.
00003

BD14D77E-2185-42C2-BBA0-9991E7BEDFE7



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Vic Siding South End

<p>Additional Photo 1</p>  A photograph of a railroad turnout. The tracks are made of steel rails and wooden ties, curving to the right. In the distance, a white car is visible on the tracks. The area is surrounded by trees and some construction equipment on the right side. The sky is overcast. <p></p>	<p></p>
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WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Koksilah siding

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
12/09/2019

Turnout ID	Mile	Turnout Hand
No. 9	38.20	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted 85lbs

Gauge

Points Gauge (in) 56.5	Through Closure Gauge (in) Not Observed	Through Check Rail Gauge (in) Not Observed	Through Guard Rail Gauge (in) 54.7
Heel Gauge (in) Not Observed	Diverging Closure Gauge (in) Not Observed	Diverging Check Rail Gauge(in) Not Observed	Diverging Guard Rail Gauge(in) 54.70

Gauge Comment
No Comment

Component Condition

Component

Component	Condition	Comment
Ties	Poor	No Comment
Anchors	Fair	No Comment
Ballast	Poor	No Comment
Guard Rails	Fair	No Comment
Frog	Fair	Chip
Closure Rails	Fair	No Comment

No.
00002

ADA0D516-7E8D-4E5F-A442-168F4F8B88FE



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Koksilah siding

Head Loss

Through Stock Rail (mm)

9

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

Min wears

0 flange loss

Comments and Remarks

Condition Comments

Adjustable rail braces in fair condition

No.
00002

ADA0D516-7E8D-4E5F-A442-168F4F8B88FE

Photo Library

Turnout Photo








WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Koksilah siding

Turnout Component Photos





Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Anchors			
Ballast			

No.
00002

ADA0D516-7E8D-4E5F-A442-168F4F8B88FE

WSP Turnout Inspection


WSP Inspection ID
Turnout Inspection -
Koksilah siding

Component	Component Photo 1	Component Photo 2	Component Photo 3
Guard Rails			
Frog			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Koksilah siding

Component	Component Photo 1	Component Photo 2	Component Photo 3
Closure Rails			

No.
00002

ADA0D516-7E8D-4E5F-A442-168F4F8B88FE

Additional Photo 1



Additional Photo 2





WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
13/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	70.07	Left Hand
Rail weight (lbs)	Tie Type	Frog Type
100	Softwood	No. 9 solid manganese

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
Not Observed	Not Observed	Not Observed	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
Not Observed	Not Observed	Not Observed	Not Observed

Gauge Comment
Good

Component Condition

Component

Component	Condition	Comment
Frog		No Comment
Guard Rails		No Comment
Closure Rails		No Comment
Ties		No Comment
Anchors		No Comment
Ballast		No Comment

No.
00004

5D4E6B95-7DC9-4A99-97C4-D057CC4CCB2B



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

Good

Comments and Remarks

Condition Comments

In good working order.

Replace a few ties

No.
00004

5D4E6B95-7DC9-4A99-97C4-D057CC4CCB2B



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Photo Library

Turnout Photo



No.
00004



5D4E6B95-7DC9-4A99-97C4-D057CC4CCB2B



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch


Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Guard Rails			
Closure Rails			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Anchors			
Ballast			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Head Loss Photo 1



No.
00004

5D4E6B95-7DC9-4A99-97C4-D057CC4CCB2B

WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
North Wye Switch

Additional Photo 1



Additional Photo 1 Description
Frog

Additional Photo 2



Additional Photo 2 Description
Guard Rail

Additional Photo 3



Additional Photo 3 Description
Switch Stand

Additional Photo 4





WSP Turnout Inspection

WSP Inspection ID
Track Inspection -
Superior Gas no. 9

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
13/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	75.70	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted 85lb

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
Not Observed	Not Observed	Not Observed	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
Not Observed	Not Observed	Not Observed	Not Observed

Gauge Comment
No Comment

Component Condition

Component

Component	Condition	Comment
Guard Rails	Fair	No Comment
Frog	Fair	Good candidate for replacement with 100lb TO due to higher volume traffic and important customer.
Ties	Poor	No Comment
Ballast	Poor	No Comment
Anchors		No Comment
Closure Rails		No Comment

No.
00005

69D23CAE-5746-483E-B1CE-BADD9BAF95B7



WSP Turnout Inspection

WSP Inspection ID
Track Inspection -
Superior Gas no. 9

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

No Comment

Comments and Remarks

Condition Comments

Replace with 100lb turnout

No.
00005

69D23CAE-5746-483E-B1CE-BADD9BAF95B7



WSP Turnout Inspection

WSP Inspection ID
Track Inspection -
Superior Gas no. 9

Photo Library

Turnout Photo



No.
00005

69D23CAE-5746-483E-B1CE-BADD9BAF95B7



WSP Turnout Inspection

WSP Inspection ID
Track Inspection -
Superior Gas no. 9

Turnout Component Photos





Component	Component Photo 1	Component Photo 2	Component Photo 3
Guard Rails			
Frog			

No.
00005



WSP Turnout Inspection

WSP Inspection ID
Track Inspection -
Superior Gas no. 9

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Ballast			
Anchors			
Closure Rails			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
V77.40

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
13/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	77.40	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted rigid

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
Not Observed	Not Observed	Not Observed	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
Not Observed	Not Observed	Not Observed	Not Observed

Gauge Comment
No Comment

Component Condition

Component

Component	Condition	Comment
Closure Rails	Fair	Curve closure Head loss 10 Flange 0
Guard Rails		No Comment
Ties		No Comment
Anchors		No Comment
Ballast		No Comment
Frog		No Comment

No.
00006

7249C02C-E822-48FC-A496-2BB139B880F5



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
V77.40

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

No Comment

Comments and Remarks

Condition Comments

Material wise fair condition

Photo Library

Turnout Photo






WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
V77.40

Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Closure Rails			
Guard Rails			
Ties			
Anchors			
Ballast			
Frog			

<p>Additional Photo 1</p>  <p>Additional Photo 1 Description Switch point lock.</p>	



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Victoria
Inspection Date
18/09/2019

Turnout ID	Mile	Turnout Hand
Courtenay station siding	139.70	Left Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted rail no. 9

Gauge

Points Gauge (in) 56.5	Through Closure Gauge (in) Not Observed	Through Check Rail Gauge (in) Not Observed	Through Guard Rail Gauge (in) Not Observed
Heel Gauge (in) Not Observed	Diverging Closure Gauge (in) Not Observed	Diverging Check Rail Gauge(in) Not Observed	Diverging Guard Rail Gauge(in) Not Observed

Gauge Comment
No Comment

Component Condition

Component

Component	Condition	Comment
Ties	Fair	Replace 20%
Ballast	Poor	No Comment
Frog	Fair	Bolted 85lb no.9
Closure Rails	Fair	No Comment
Anchors		No Comment
Guard Rails		No Comment



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Head Loss

Through Stock Rail (mm)

7

Through Closure Rail (mm)

11

Curve Closure Rail (mm)

7

Diverging Stock Rail (mm)

7

Head Loss Comments

No Comment

Comments and Remarks

Condition Comments

Rigid braces

Diverging frog gauge 56.5

Diverging gaurd 54.5

Through frog gauge 56.3/8

Through guard gauge 54 3/8

No.
00010

4C318F16-53CA-4AD3-94BB-D16EA8DA6011



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Photo Library

Turnout Photo



No.
00010



4C318F16-53CA-4AD3-94BB-D16EA8DA6011



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station





Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Ballast			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Closure Rails			
Anchors			
Guard Rails			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Head Loss Photo 1



No.
00010

4C318F16-53CA-4AD3-94BB-D16EA8DA6011



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Courtenay Station

Additional Photo 1



Additional Photo 1 Description
Switch stand

Additional Photo 2



Additional Photo 3



Additional Photo 3 Description
Location



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Inspection Date
17/09/2019

Turnout ID	Mile	Turnout Hand
No 9	34.40	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	85lb bolted

Gauge

Points Gauge (in) 56.5	Through Closure Gauge (in) Not Observed	Through Check Rail Gauge (in) Not Observed	Through Guard Rail Gauge (in) Not Observed
Heel Gauge (in) Not Observed	Diverging Closure Gauge (in) Not Observed	Diverging Check Rail Gauge(in) Not Observed	Diverging Guard Rail Gauge(in) Not Observed

Gauge Comment

Through gauge at frog 56.5. At guard 54.5
Diverging Same at both

Component Condition

Component

Component	Condition	Comment
Ties	Good	Switch ties in good condition.
Ballast	Poor	Poor through PS Diverging side beyond TO good ballast
Anchors	Fair	No Comment
Frog	Fair	85 lb no 9
Guard Rails		Not Observed
Closure Rails		Not Observed

No.
00007

6A083453-70E4-41A9-8EA7-ABA677216467



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

9

Curve Closure Rail (mm)

7

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

No Comment

Comments and Remarks

Condition Comments

Hand throw high mast switch stand

No.
00007

6A083453-70E4-41A9-8EA7-ABA677216467



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Photo Library

Turnout Photo



No.
00007






6A083453-70E4-41A9-8EA7-ABA677216467



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Ballast			
Anchors			




No.
00007

6A083453-70E4-41A9-8EA7-ABA677216467



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Guard Rails			
Closure Rails			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Head Loss Photo 1



No.
00007

6A083453-70E4-41A9-8EA7-ABA677216467

WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
McLean mill

Additional Photo 1



Additional Photo 2



Additional Photo 3



Additional Photo 3 Description
Rail braces are rigid spiked.

Additional Photo 4



Additional Photo 4 Description
Guard rail



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni Station

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Inspection Date
17/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	38.77	Left Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted rail frog no. 7

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
Not Observed	Not Observed	54.25	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
Not Observed	Not Observed	Not Observed	55

Gauge Comment

Ahead of PS 56.5
Frog through 56. 1/8
Frog diverging 57
Frog maintained well but needs gauge adjustment.

Component Condition

Component

Component	Condition	Comment
Ties	Fair	No Comment
Ballast	Fair	No Comment
Anchors	Fair	No Comment
Frog	Fair	Bolted rail frog no 7
Guard Rails		No Comment
Closure Rails		No Comment

No.
00008

535D3D64-70A5-4D62-BDE3-94C32781E758



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni Station

Head Loss

Through Stock Rail (mm)

Not Observed

Through Closure Rail (mm)

Not Observed

Curve Closure Rail (mm)

Not Observed

Diverging Stock Rail (mm)

Not Observed

Head Loss Comments

9 mm

Flange loss 3 mm

Comments and Remarks

Condition Comments

Old style rigid braces need replacement with adjustable rail braces and riser plates.

Hand throw low switch stand

Switch plates are in fair condition.



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni Station

Photo Library




Turnout Photo



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni Station

Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Ballast			
Anchors			

No.
00008

535D3D64-70A5-4D62-BDE3-94C32781E758





WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni Station

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Guard Rails			
Closure Rails			

Head Loss Photo 1



<p>Additional Photo 1</p>  <p>Additional Photo 1 Description Old style spike and plates.</p>	<p>Additional Photo 2</p>  <p>Additional Photo 2 Description Switch stand</p>



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Port Alberni
Inspection Date
17/09/2019

Turnout ID	Mile	Turnout Hand
Not Observed	0.00	Right Hand
Rail weight (lbs)	Tie Type	Frog Type
85	Softwood	Bolted Rail

Gauge

Points Gauge (in) 56.75	Through Closure Gauge (in) Not Observed	Through Check Rail Gauge (in) Not Observed	Through Guard Rail Gauge (in) Not Observed
Heel Gauge (in) Not Observed	Diverging Closure Gauge (in) Not Observed	Diverging Check Rail Gauge(in) Not Observed	Diverging Guard Rail Gauge(in) Not Observed

Gauge Comment

Diverging track frog 57
Through track frog 56.25

Component Condition

Component

Component	Condition	Comment
Ties	Fair	Will need 40% new switch ties
Ballast	Poor	Pitt run gravel Fouled
Closure Rails		No Comment
Frog	Fair	Bolted rail frog
Anchors	Fair	Not Comment
Guard Rails	Fair	No Comment

No.
00009

EB9EBEDF-BFBC-4BA8-808E-3D50F890D5F4



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni

Head Loss

Through Stock Rail (mm)

7

Through Closure Rail (mm)

11

Curve Closure Rail (mm)

11

Diverging Stock Rail (mm)

10

Head Loss Comments

Additional Photo 1: curve closure

Additional Photo 2: through closure

Comments and Remarks

Condition Comments

Overall fair condition other than switch ties. Need to realign frog to fix gauge.

Turout is the main junction connection off the Victoria sub to Port Alberni.

No.
00009

EB9EBEDF-BFBC-4BA8-808E-3D50F890D5F4

Photo Library

Turnout Photo








WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni




Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Ballast			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection -
Port Alberni

Component	Component Photo 1	Component Photo 2	Component Photo 3
Closure Rails			
Frog			


No.
00009

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WSP Turnout Inspection

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Port Alberni

Component	Component Photo 1	Component Photo 2	Component Photo 3
Anchors			
Guard Rails			

Head Loss Photo 1



Head Loss Photo 2



Additional Photo 1



Additional Photo 1 Description
Guard rail through

Additional Photo 2



Additional Photo 2 Description
Diverging gourd rail

Additional Photo 3



Additional Photo 4





WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Railway Authority
SVI
Lead Inspector
Kris Dhawan

Subdivision
Wellcox Yard
Inspection Date
18/09/2019

Turnout ID	Mile	Turnout Hand
C3/4 mainline switch No		Right Hand
7	Tie Type	Frog Type
Rail weight (lbs)	Softwood	Self Guarded no. 7 solid
85		steel

Gauge

Points Gauge (in)	Through Closure Gauge (in)	Through Check Rail Gauge (in)	Through Guard Rail Gauge (in)
56.5	Not Observed	Not Observed	Not Observed
Heel Gauge (in)	Diverging Closure Gauge (in)	Diverging Check Rail Gauge(in)	Diverging Guard Rail Gauge(in)
57 3/8 through	Not Observed	Not Observed	Not Observed

Gauge Comment
Frog through 56.25
Frog diverging 56

Component Condition

Component

Component	Condition	Comment
Frog	Fair	Self gauged no. 7 solid steel
Guard Rails	Fair	No Comment
Ballast	Poor	No Comment
Anchors	Poor	Small tie plates
Ties	Poor	No Comment
Closure Rails		No Comment



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Head Loss

Through Stock Rail (mm)

10

Through Closure Rail (mm)

11

Curve Closure Rail (mm)

12

Diverging Stock Rail (mm)

11

Head Loss Comments

No Comment

Comments and Remarks

Condition Comments

Needs ties

Needs gauging of joints

Need larger tie plates

No.
00011

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Photo Library

Turnout Photo







WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Turnout Component Photos

Component	Component Photo 1	Component Photo 2	Component Photo 3
Frog			
Guard Rails			



No.
00011

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WSP Turnout Inspection



WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ballast			
Anchors			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Component	Component Photo 1	Component Photo 2	Component Photo 3
Ties			
Closure Rails			



WSP Turnout Inspection

WSP Inspection ID
Turnout Inspection
Wellcox Yrd - C3/4

Head Loss Photo 1



No.
00011

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WSP Turnout Inspection

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Wellcox Yrd - C3/4

Additional Photo 1



Additional Photo 2



Additional Photo 2 Description

Standard hand throw switch stand