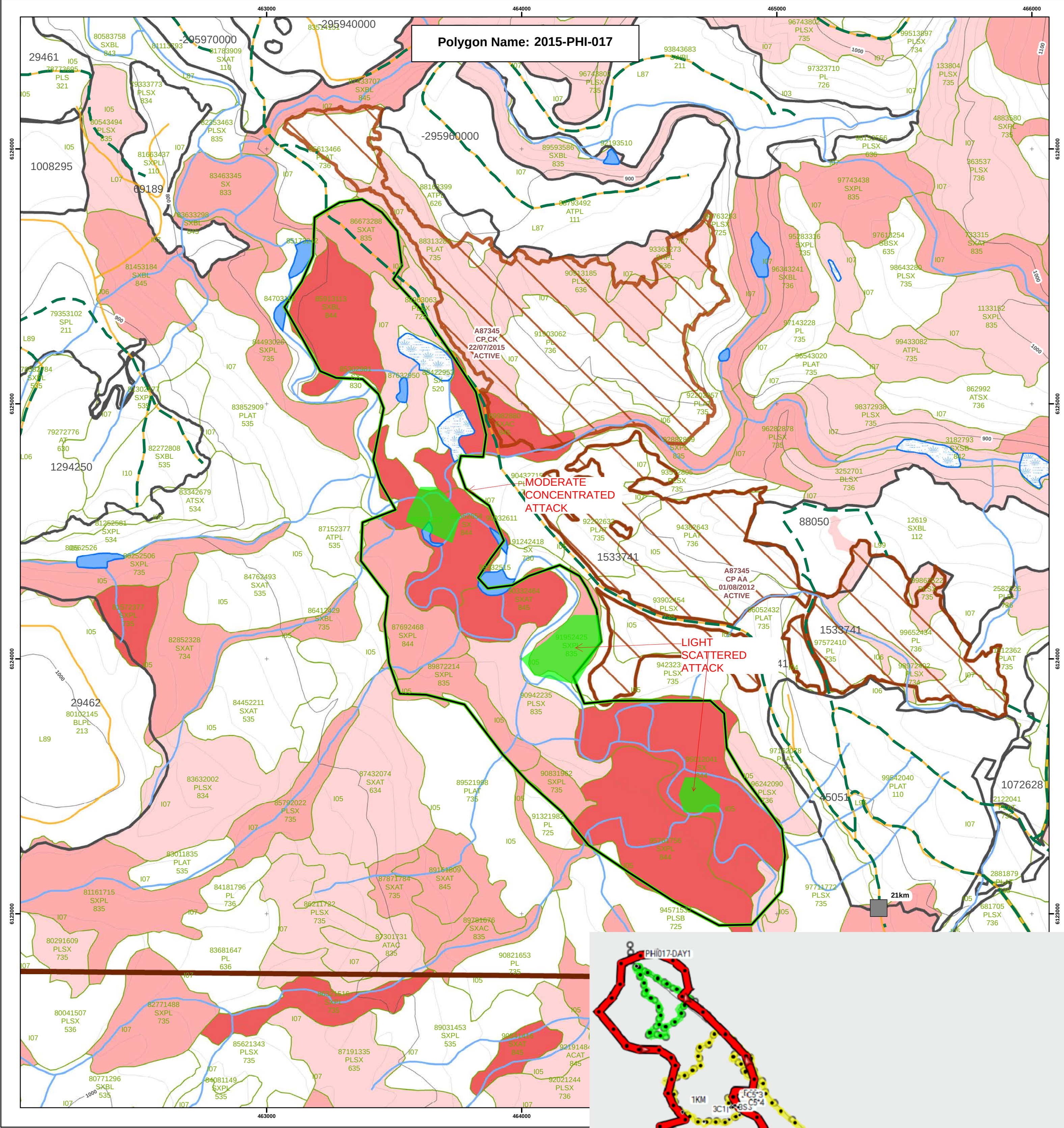
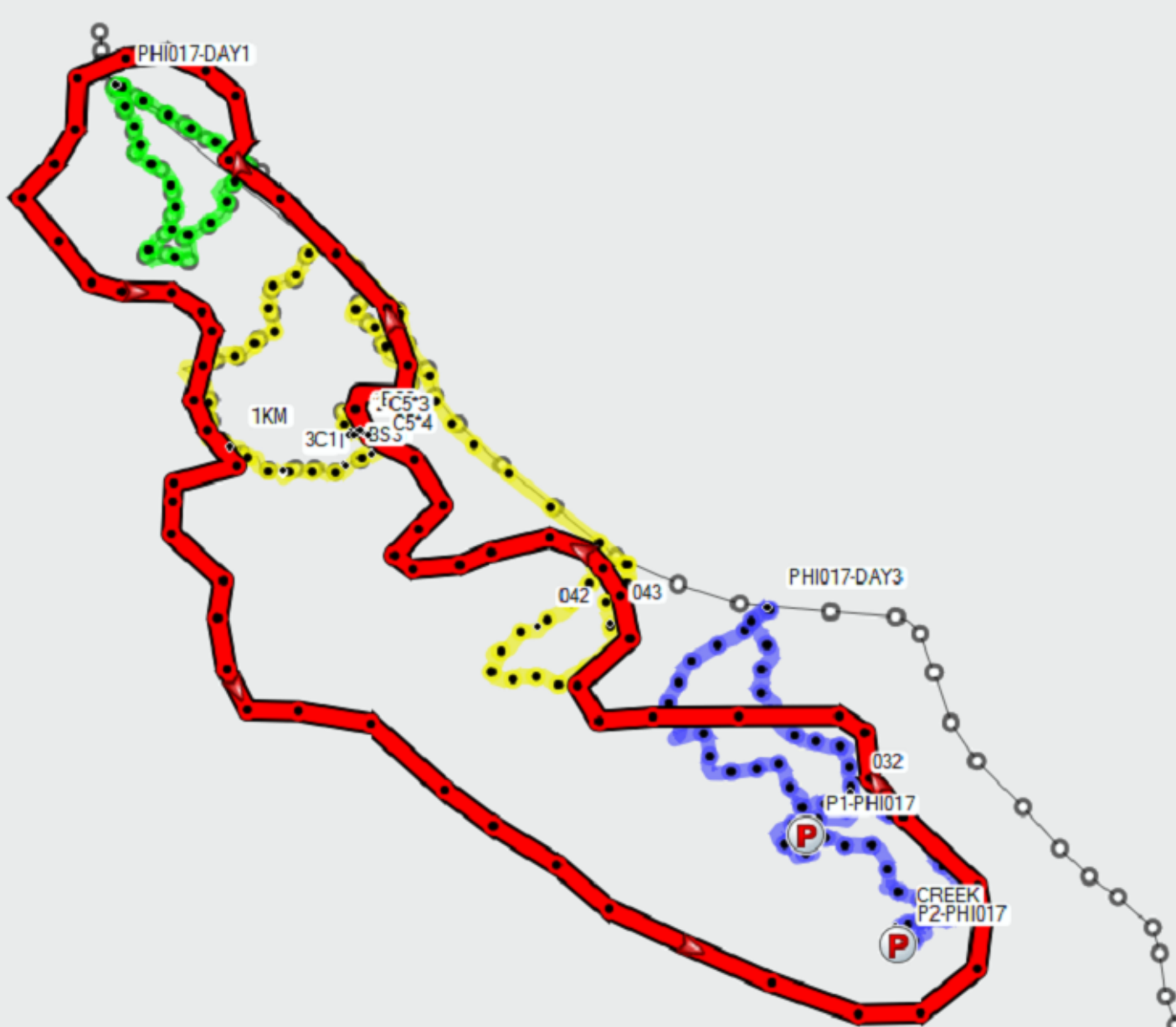






Ministry of
Forests, Lands and
Natural Resource Operations

Spruce Bark Beetle Field Map

Polygon Name: 2015-PHI-017

Landscape Unit/BMU: Philip
Region: Omineca
District: Mackenzie
Mapsheet: 093005
Hectares: 165
Scale: 1:10,000
When plotted on ANSIC

Coordinate System: NAD 1983 UTM Zone 10N
Datum: North American 1983
Date Drawn: 01/11/2015
Drawn By: msnively

Map Features

Susceptible Spruce Bark Beetle Polygon

2013 SB Hazard Rating (20% increments)

Hazard Classes

- Low/Med (21-40)
- Med (41-60)
- High (61-80)
- Very High (81-100)

VRI Polygon

Cutting Permit

RESULTS Opening

Landscape Unit

Road Permit Active

Road Permit Pending

Km_Marker_Points

Communities

First Nations Reserves

Mackenzie District

OGMA Legal Current

Ungulate Winter Range

Wildlife Habitat Area

Protected Lands Designation

- Ecological Reserve
- Protected Area
- Provincial Park

Contour - Index

Contour - Intermediate

Lakes and Rivers

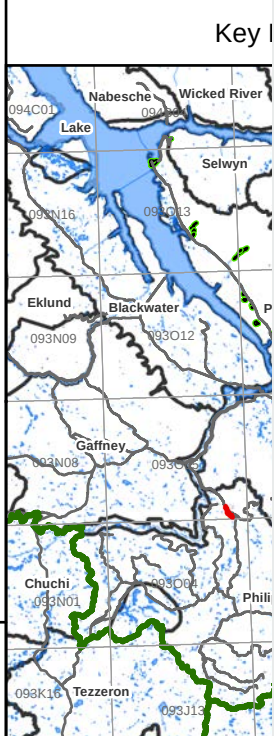
Wetlands

Streams

Disclaimer

The accuracy and completeness of the information on this map is not guaranteed.





**SENECA ENTERPRISES LTD.**

PO BOX 1902, PRINCE GEORGE, BC, V2L 5E3

Phone: (250) 561-0890, Fax: (250) 564-3275

WALKTHROUGH DISTANCE: **7500****SPRUCE BARK BEETLE REPORT
FH16DMK010**POLYGON: **2015-PHI-017**HECTARES: **165.00**ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)**6 8.0%****SUMMARY OF CURRENT INFESTATION**

Walkthrough show minimal infestation with 8% infested Pixels from walkthrough. Walkthrough had its limitations as couldn't access past river in several areas but looking across can estimate that infestation is much the same. Pockets of heavy small DBH spruce and areas with swamps and Spruce/Balsam islands. One pocket of moderate concentrated attack located in the North,

LIGHT SCATTERED ATTACK

ACCESS

Truck access along east side of polygon, walk in to the south portion via new cutblock. River runs through most of the length of polygon and prevented access to lower risk west sections of polygon

POLYGON FEATURES (Topography, Terrain, Timber Types, Age)

Mostly flat, with steep slopes in the south upon entering the polygon. Very similar to 2015-PHI-25, island of Spruce Balsam separated by rivers. Very wet, couldn't access portion in the west due to large rivers that couldn't cross. (Phillips River)

SIZE, BOUNDARY and PATTERN OF INFESTATION

From walkthrough, covered most of the east half of polygon and rivers prevented a thorough walkthrough in the west. Light scattered attack with 6 pixels having a light attack density. In the north, more moderate attack density as more concentrated attack with more than a single attacked tree found

INCIDENCE AND SEVERITY OF ATTACK

Incidence was light and low attack and larval density. Three probe lines established and stand looks much the same in areas not walked. It may be a little higher with a moderate attack density in northern portion identified as found 5 Code 1 Attacked trees clustered around some older attack Code 5's/

RISK OF BEETLE SPREAD

Polygon minimal spruce to the west and the east is mostly covered by cutblocks. Within polygon, low risk of spread as very patchy stands of spruce with low DBH.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access to the East part as road runs along most of the length of it. In the south, steep section upon entering polygon. Phillips River runs through entire length of Polygon preventing access to the west of it..

RECOMMENDATIONS**OPTION 1****MONITOR**

Monitor sites log health sanitation and salvage rating. Areas of spruce patchy throughout where some areas 100% spruce, others just swampy ground, islands of spruce Balsam mix. Mostly small stand Spruce. Good access to the east, schedule another walkthrough 2016/2017 later in the season where can safely cross a frozen river.

OPTION 2**BAIT TREES/ MONITOR**

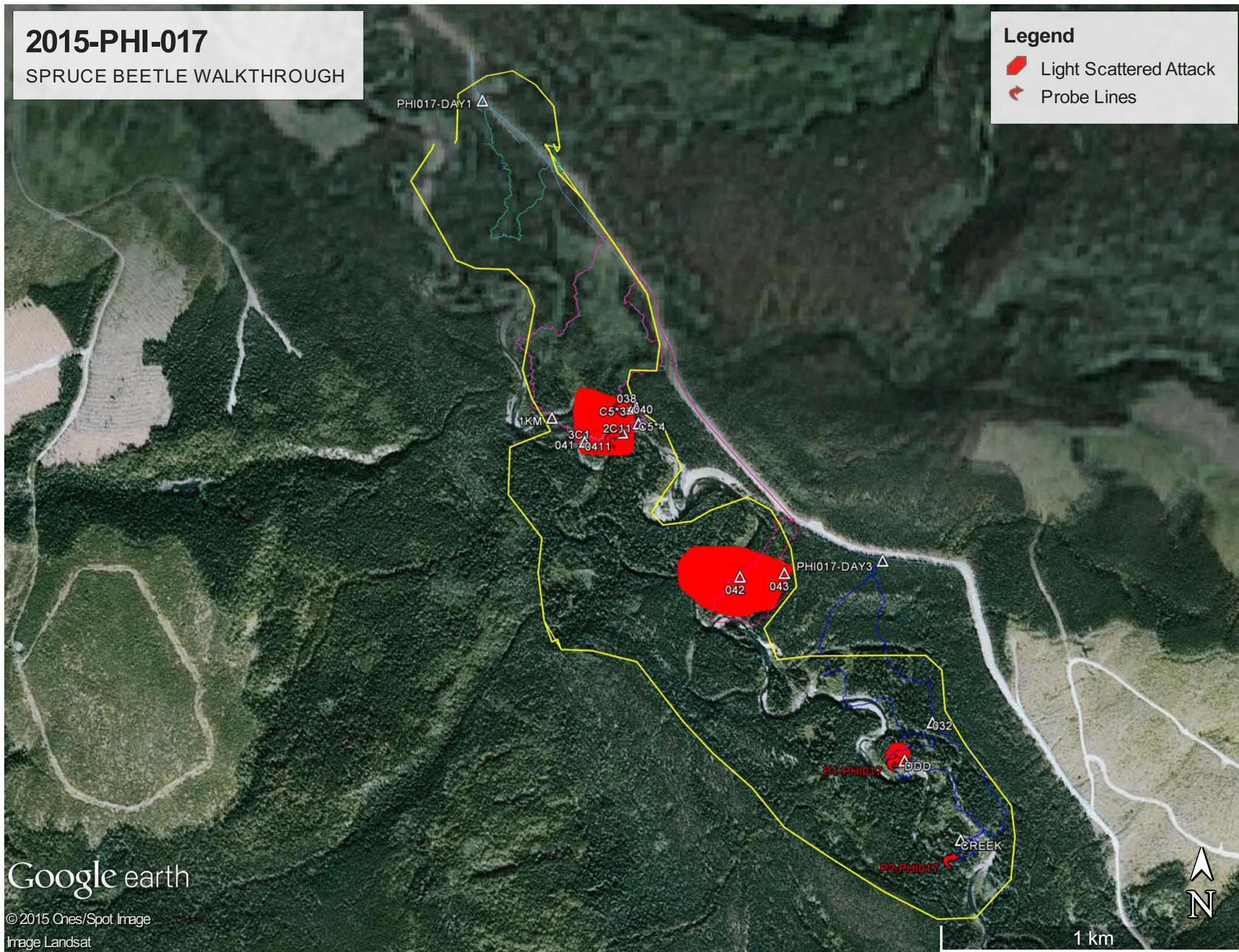
Small amount of attack noticed and may want to setup bait trees in areas off of mainline where found current attack. (2017) Most of the attack Code 1's on a 2 year cycle and more concentrated in the north.

2015-PHI-017

SPRUCE BEETLE WALKTHROUGH

Legend

-  Light Scattered Attack
-  Probe Lines



Google earth

© 2015 Qnes/Spot Image
Image Landsat

TABLE 5- Spruce Beetle Infestation Summary Sheet									
--	--	--	--	--	--	--	--	--	--

OF NOTE- Results taken from a 100m Probe Line established at 1 per 50 hectares to represent

Diameter Class	Surface Area Factor	Number of Healthy Hosts	Bark Beetle Code by Year of Attack						Other Tree Species
			2015		2014		2013		
			1	2	3	4	5	6	
17.5-25.0	3.3	29.7	0.0	0.0	0.0	0.0	0.0	0.0	23.1
25.1-30.0	5.3	42.4	0.0	0.0	0.0	0.0	0.0	0.0	21.2
30.1-35.0	7.1	63.9	0.0	0.0	0.0	0.0	0.0	0.0	78.1
35.1-40.0	9.4	150.4	0.0	0.0	0.0	0.0	0.0	0.0	75.2
40.1-45.0	11.6	58	0.0	0.0	0.0	0.0	0.0	0.0	0
45.1-50.0	13.8	110.4	0.0	0.0	0.0	0.0	0.0	0.0	0
50.1-55.0	16.2	97.2	16.2	0.0	0.0	0.0	0.0	0.0	0
55.1-60.0	18.7	74.8	0.0	0.0	0.0	0.0	18.7	0.0	0
60.1 +	25.3	50.6	25.3	0.0	0.0	0.0	0.0	0.0	0
TOTALS	737.6	677.4	41.5	0	0.0	0.0	18.7	0	197.6

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating

MEAN NO. OF ENTRANCE HOLES PER 225 cm2 PHLOEM SAMPLE	< 1 LOW Attack Density	MEAN NO. OF LIVING LARVAE PER 225 cm2 PHLOEM SAMPLE	< 4.9 LOW Mean Larval Density
	1.0- 1.9 MOD Attack Density		5.0 - 14.9 MOD Mean Larval Density
	2.0 - 3.9 HIGH Attack Density		15-24.9 HIGH Mean Larval Density
1.13	< 3.9 SEVERE Attack Density	1.63	>24.9 EXTREME Mean Larval Density

TABLE 2- Spruce Beetle Management Options after Walkthrough

% 2015 ATTACK	5.6%	5.6	SANITATION AND SALVAGE HARVEST PRIORITY RATING			
% 2014 ATTACK	0.0%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)	493.7
% 2013 ATTACK	2.5%	##	MODERATE	600-999	PROBE (To Obtain Further Info)	
% HOST IN STAND	78.9%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING	

THREE PROBE LINES AND 2 ADDITIONAL DARK SAMPLES TAKEN IN AREAS OF ATTACK

SUMMARY OF ALL CARDS FS1111						NUMBER OF CARDS				5	
ACCESS -		Truck access along east side of polygon, walk in to the south portion via new cutblock. River runs through most of the length of polygon and prevented access to lower risk west sections of polygon									
POLYGON FEATURES -		Mostly flat, with steep slopes in the south upon entering the polygon. Very similar to 2015-PHI-25, island of Spruce Balsam separated by rivers. Very wet, couldn't access portion in the west due to large rivers that couldn't cross. (Phillips River)									
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES		
			2015		2014		2013				
			1	2	3	4	5	6	BL	AT	
17.5-25.0	3.3	9	0	0	0	0	0	0	7	0	
25.1-30.0	5.3	8	0	0	0	0	0	0	4	0	
30.1-35.0	7.1	9	0	0	0	0	0	0	11	0	
35.1-40.0	9.4	16	0	0	0	0	0	0	8	0	
40.1-45.0	11.6	5	0	0	0	0	0	0	0	0	
45.1-50.0	13.8	8	0	0	0	0	0	0	0	0	
50.1-55.0	16.2	6	1	0	0	0	0	0	0	0	
55.1-60.0	18.7	4	0	0	0	0	1	0	0	0	
60.1 +	25.3	2	1	0	0	0	0	0	0	0	
TOTALS		67	2	0	0	0	1	0	30	0	
BARK SAMPLES 15 cm x 15 cm		NO. ENTRAN- CE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE ADULTS	NO. CALLOW	FRESH (GREEN) BLOWDOWN				
							Attacked Y r	Y r ____	Unattacked		
8		9	0	13	0	0	0	0	0	0	
SIZE, BOUNDARY AND PATTERN OF THE INFESTATION											
From walkthrough, covered most of the east half of polygon and rivers prevented a thorough walkthrough in the west. Light scattered attack with 6 pixels having a light attack density. In the north, more moderate attack density as more concentrated attack with more than a single attacked tree found											
INCIDENCE AND SEVERITY OF THE INFESTATION											
Incidence was light and low attack and larval density. Three probe lines established and stand looks much the same in areas not walked. It may be a little higher with a moderate attack density in northern portion identified as found 5 Code 1 Attacked trees clustered around some older attack Code 5's/											
RISK OF BEETLE SPREAD											
Polygon minimal spruce to the west and the east is mostly covered by cutblocks. Within polygon, low risk of spread as very patchy stands of spruce with low DBH.											
ACCESS, OPERABILITY AND INTEGRATED RESOURCE MANAGEMENT ISSUES											
Good access to the East part as road runs along most of the length of it. In the south, steep section upon entering polygon. Phillips River runs through entire length of Polygon preventing access to the west of it..											



BRITISH COLUMBIA

P1
BEETLE PROBE CARD

LOCATION		0464870		ELEVATION	LATITUDE		PAGE		OF	
PK1-017		6123492		814						
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES						
100°	P1	10m	100m	☒ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3	••								
25.1 - 30.0	5.3	•								
30.1 - 35.0	7.1	••								
35.1 - 40.0	9.4	•••								
40.1 - 45.0	11.6	••								
45.1 - 50.0	13.8									
50.1 - 55.0	16.2	•	①							
55.1 - 60.0	18.7	•••								
60.1 -	25.3	•								
TOTALS		14	1				1	8		
BARK SAMPLES 15cm x 15cm		NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
							Attacked	Unattacked		
P		2	/	5	/	/				
S		1	/	1	/	/				
COMMENTS										
- OPEN STAND . BY RIVER										
OBS										
CREW NAMES							DATE			
James / KAY							Y M D 15 11 25			

FS 1111A RPG 00/02 7530881049 (100/bdl)



BRITISH COLUMBIA

P2
BEETLE PROBE CARD

LOCATION		0464956		ELEVATION	LATITUDE		PAGE		OF	
PK1-017		6123156		850						
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES						
80°	P2	10m	100m	☒ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3	•								
25.1 - 30.0	5.3	•••								
30.1 - 35.0	7.1	••••								
35.1 - 40.0	9.4	••••								
40.1 - 45.0	11.6	••								
45.1 - 50.0	13.8	••								
50.1 - 55.0	16.2	•								
55.1 - 60.0	18.7									
60.1 -	25.3									
TOTALS		27						13		
BARK SAMPLES 15cm x 15cm		NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
							Attacked	Unattacked		
/										
COMMENTS										
- NO CURRENT ATTACK.										
- ALONG CRACK										
CREW NAMES							DATE			
James / PAT							Y M D 15 11 25			

FS 1111A RPG 00/02 7530881049 (100/bdl)

PH1-017



BEETLE PROBE CARD

LOCATION		0463734 6124680		ELEVATION	843		LATITUDE	PAGE		OF
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES						
260°	P3	10m	100m	☒ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3	..								
25.1 - 30.0	5.3	.								
30.1 - 35.0	7.1									
35.1 - 40.0	9.4	..								
40.1 - 45.0	11.6									
45.1 - 50.0	13.8	...								
50.1 - 55.0	16.2	..								
55.1 - 60.0	18.7	.								
60.1 -	25.3	.								
TOTALS		211							9	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
P			1							
S			0							
COMMENTS										
①:05 - OPEN STAND										
CREW NAMES						DATE				
JAMES / PAI						Y M D 5 11 24				

FS 1111A RPG 00/02 7530881049 (100/bd)

PH1-017



BEETLE PROBE CARD

LOCATION		0463769 6124682		ELEVATION	912		LATITUDE	PAGE		OF
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES						
				☐ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3									
25.1 - 30.0	5.3									
30.1 - 35.0	7.1									
35.1 - 40.0	9.4									
40.1 - 45.0	11.6									
45.1 - 50.0	13.8	.								
50.1 - 55.0	16.2									
55.1 - 60.0	18.7									
60.1 -	25.3									
TOTALS										
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
P	1	1	2	1	1					
S	2	1	1	1	1					
COMMENTS										
CREW NAMES						DATE				
JAMES / PAI						Y M D 5 11 24				

FS 1111A RPG 00/02 7530881049 (100/bd)

PHI-017

BARK SAMPLE 2

BRITISH
COLUMBIA

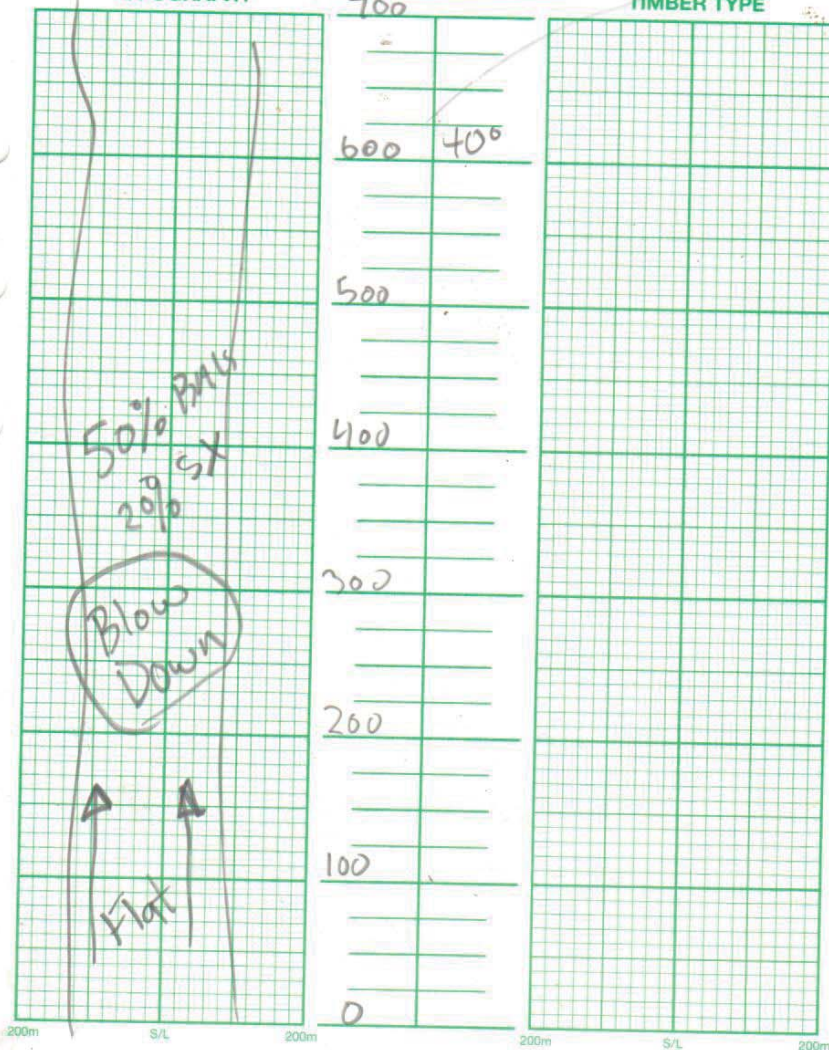
BEETLE PROBE CARD

LOCATION		0460763 6124686		ELEVATION	210		LATITUDE	PAGE 2 OF 2		
BEARING	STRIP LINE NO	STRIP WIDTH	DISTANCE	BEETLE SPECIES ☐ SB ☐ MPB ☐ DFB						
DIAMETER CLASS	SURFACE AREA FACTOR	NUMBER OF HEALTHY HOSTS	BARK BEETLE CODE BY YEAR OF ATTACK						OTHER TREE SPECIES	
			1	2	3	4	5	6	MAIN	OTHER
12.5 - 17.4	2.0									
17.5 - 25.0	3.3									
25.1 - 30.0	5.3									
30.1 - 35.0	7.1									
35.1 - 40.0	9.4									
40.1 - 45.0	11.6									
45.1 - 50.0	13.8									
50.1 - 55.0	16.2									
55.1 - 60.0	18.7									
60.1 -	25.3									
TOTALS										
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
1	2	1	3	1						
3	1	1	1	1						
COMMENTS										
CREW NAMES						DATE				
JAMES / PAT						Y 15 M 11 D 24				

TOPOGRAPHY

STRIP No. 1

TIMBER TYPE



STRIP NO.: 1 DIRECTION: 190°, 40°
 START STRIP: 0-700
 JOB NO.: PHI-017 DATE: NOV 23, 15
 CREW: _____
 REMARKS: _____

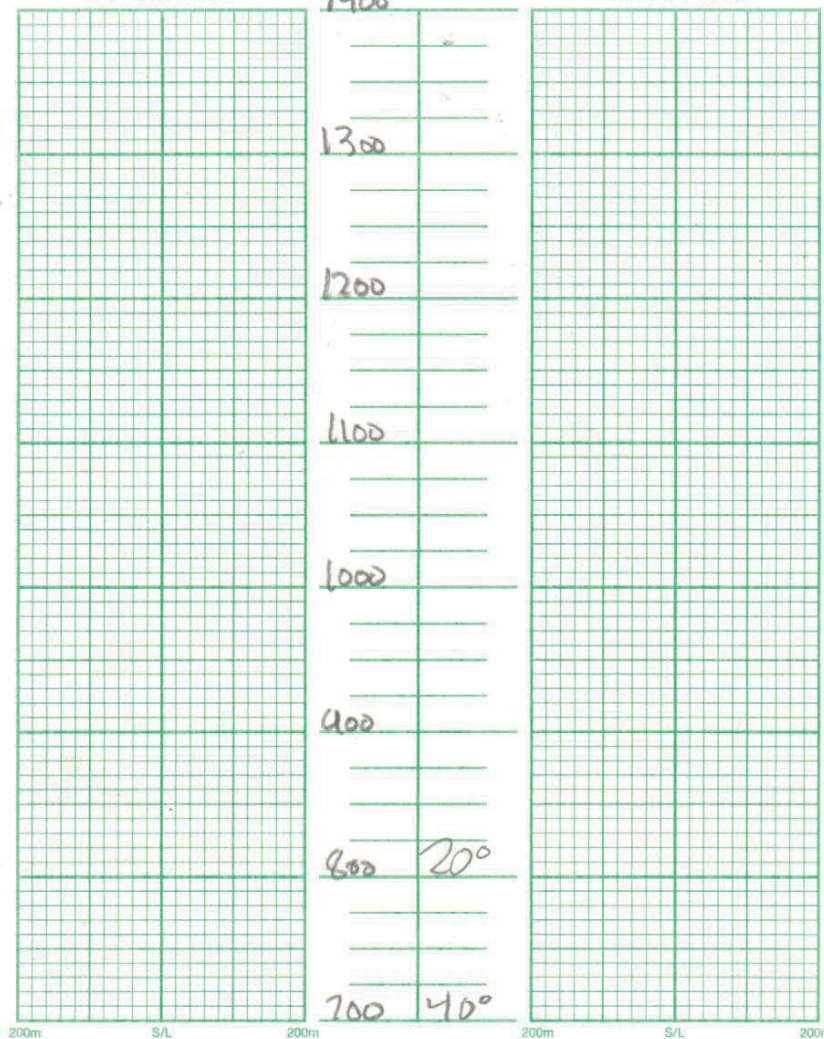


www.irlsupplies.com
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TOPOGRAPHY

STRIP No. 1

TIMBER TYPE



STRIP NO.: 1 DIRECTION: 40°, 20°
 START STRIP: 700-1400
 JOB NO.: PHI-017 DATE: NOV 23, 15
 CREW: _____
 REMARKS: _____

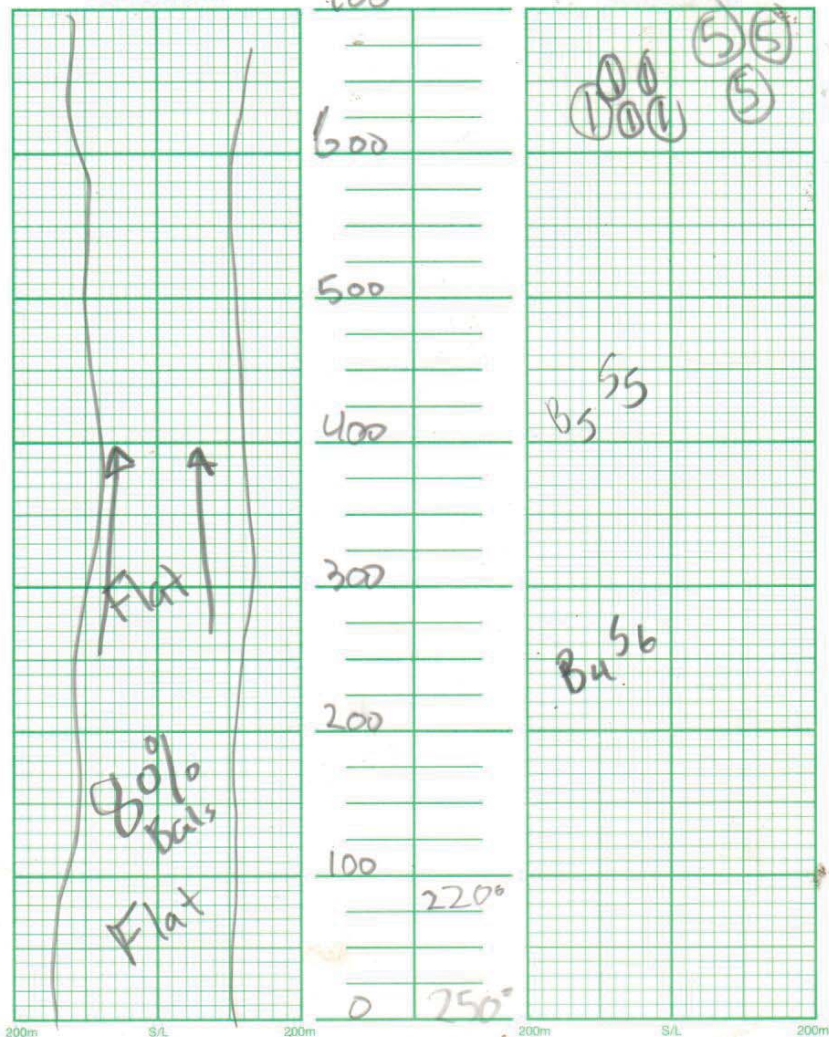


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TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.: 2

DIRECTION: 250°, 220°

START STRIP: 0-700

JOB NO.: PH1-017

DATE: NOV 24, 15

CREW:

REMARKS:

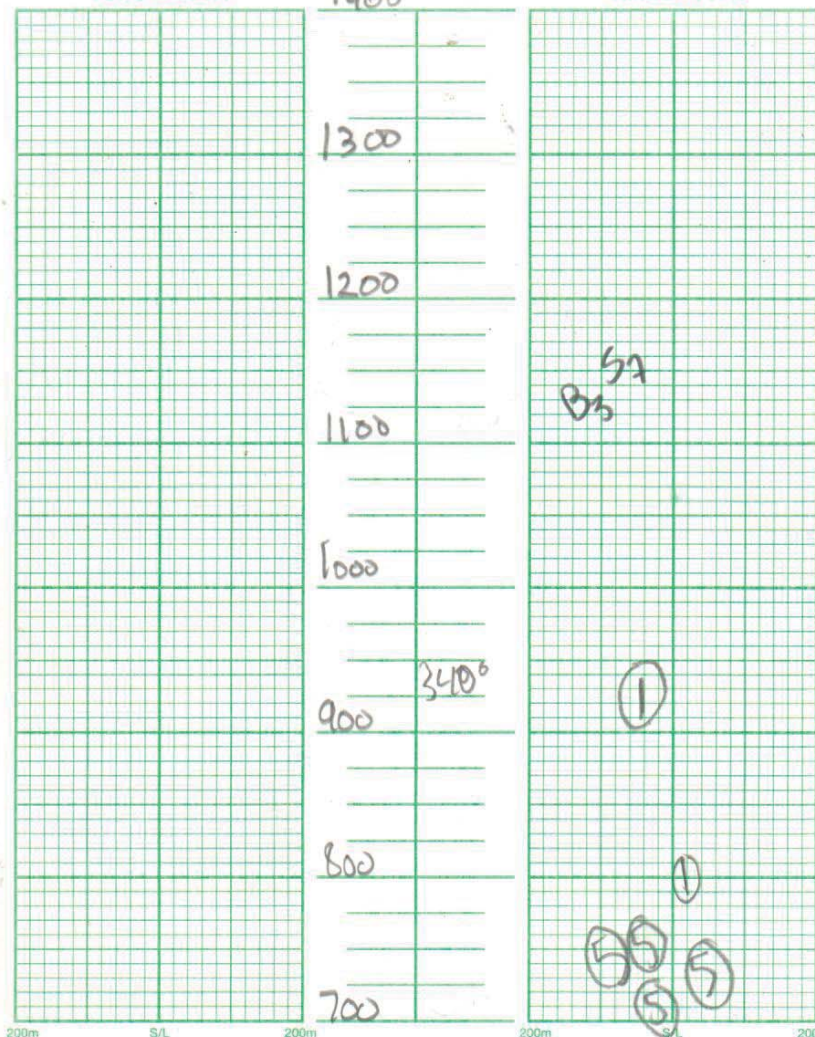


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TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.: 2

DIRECTION: 3410°

START STRIP: 700-1400

JOB NO.: PH1-017

DATE: NOV 24, 15

CREW:

REMARKS:

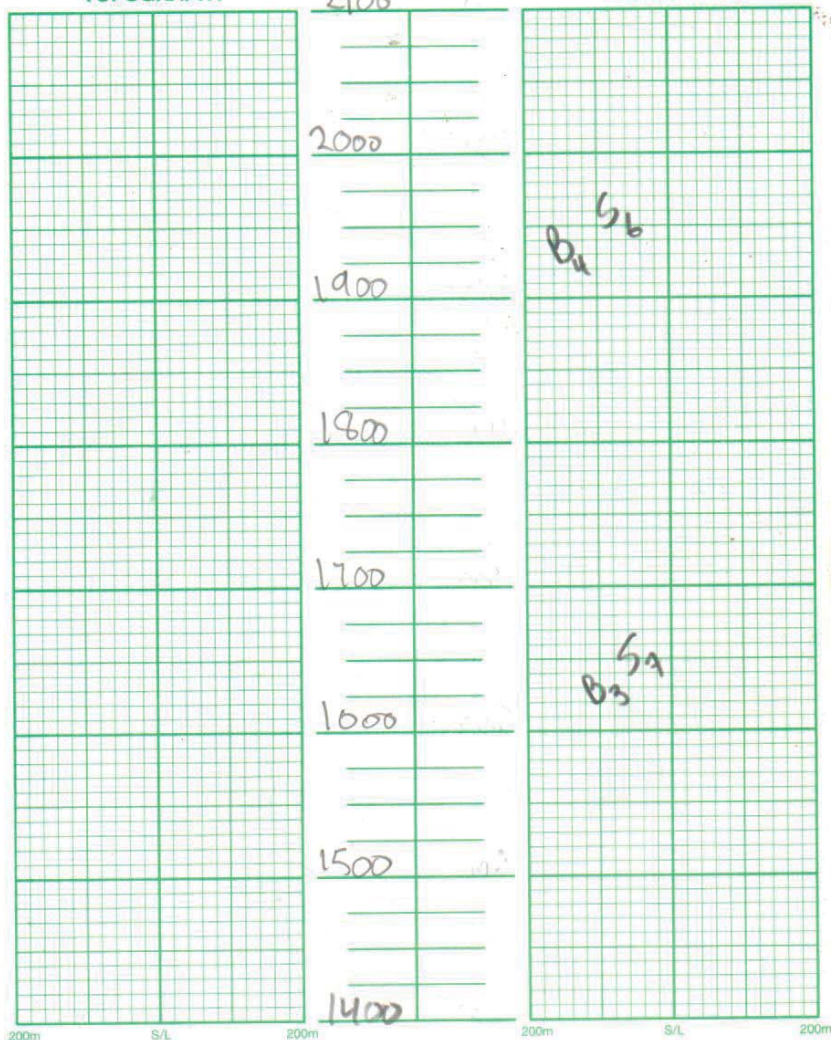


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TOPOGRAPHY

STRIP No. 2

TIMBER TYPE



STRIP NO.: 2

DIRECTION:

START STRIP:

1400-2100

JOB NO.:

PHI-017

DATE:

NOV 24, 15

CREW:

REMARKS:

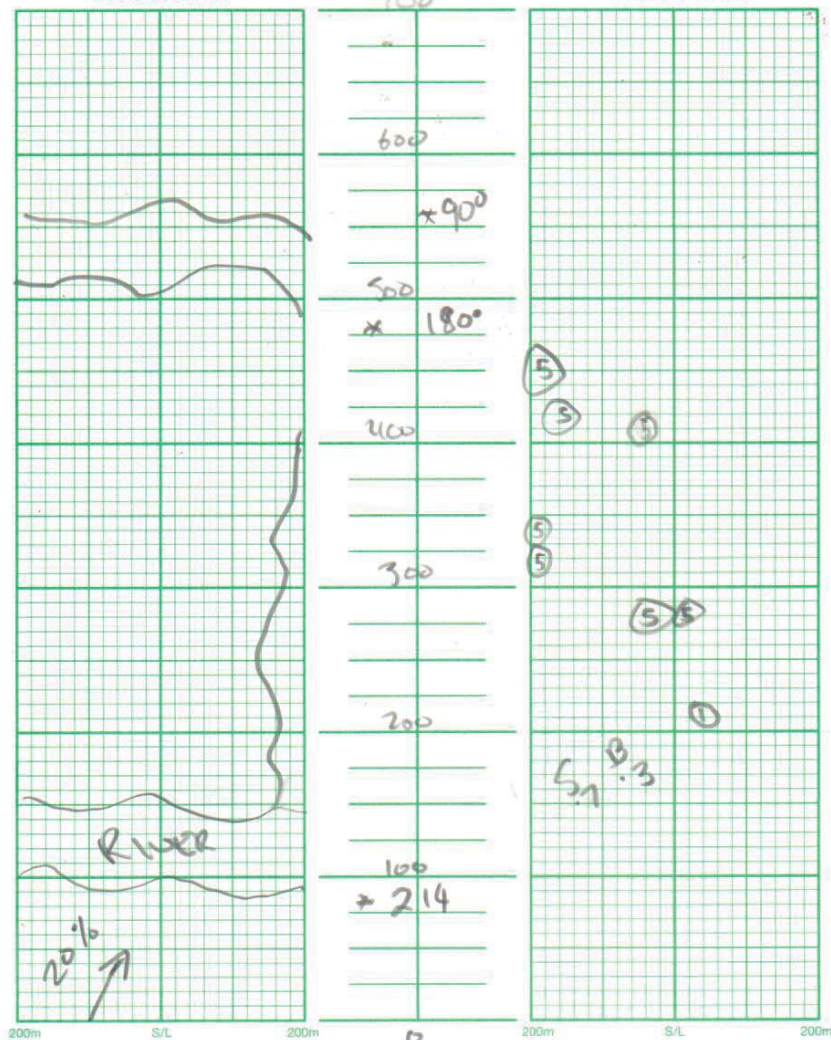


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TOPOGRAPHY

STRIP No. 3

TIMBER TYPE



STRIP NO.: 3

DIRECTION:

250°-214°-180°-90°

START STRIP:

0-700

JOB NO.:

PHI-017

DATE:

NOV 24, 15

CREW:

JAMES / PAT

REMARKS:



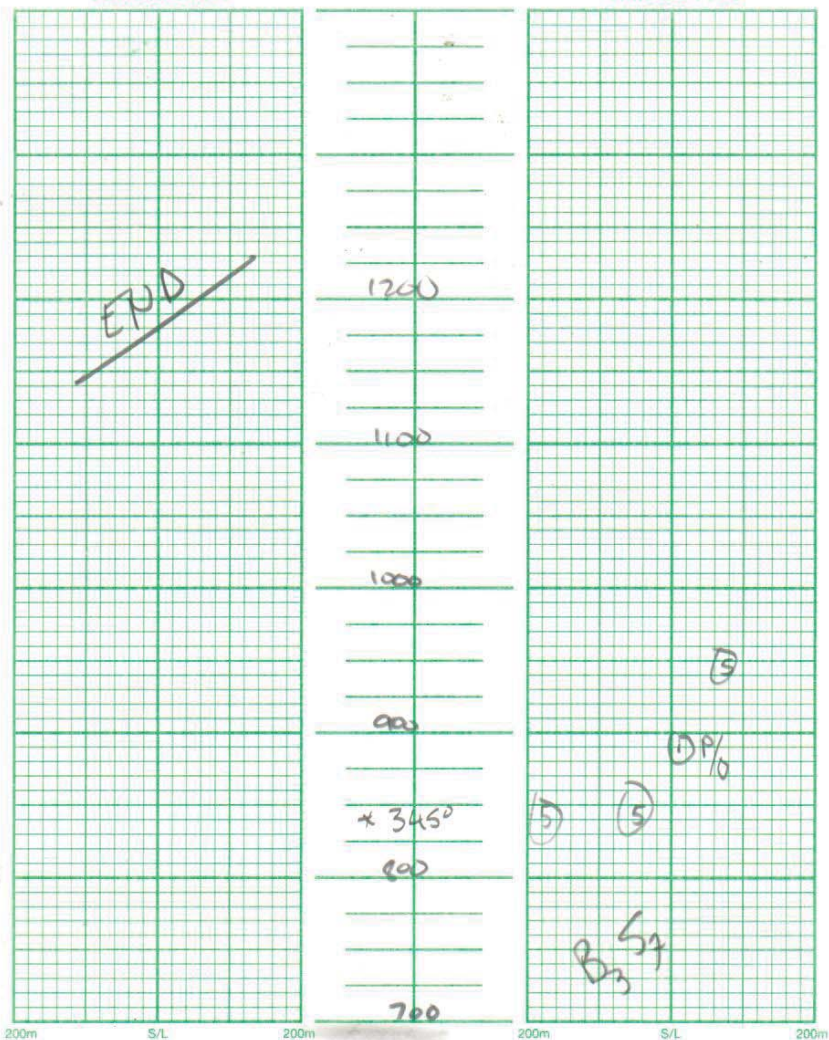
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Ph: 1-800-663-6843

3

TOPOGRAPHY

STRIP No. 3

TIMBER TYPE



STRIP NO.: 3 DIRECTION: 90° - 345°
START STRIP: 700 - 1200 m
JOB NO.: PH1-017 DATE: Nov 24 / 15
CREW: SAMOS / PAT
REMARKS:

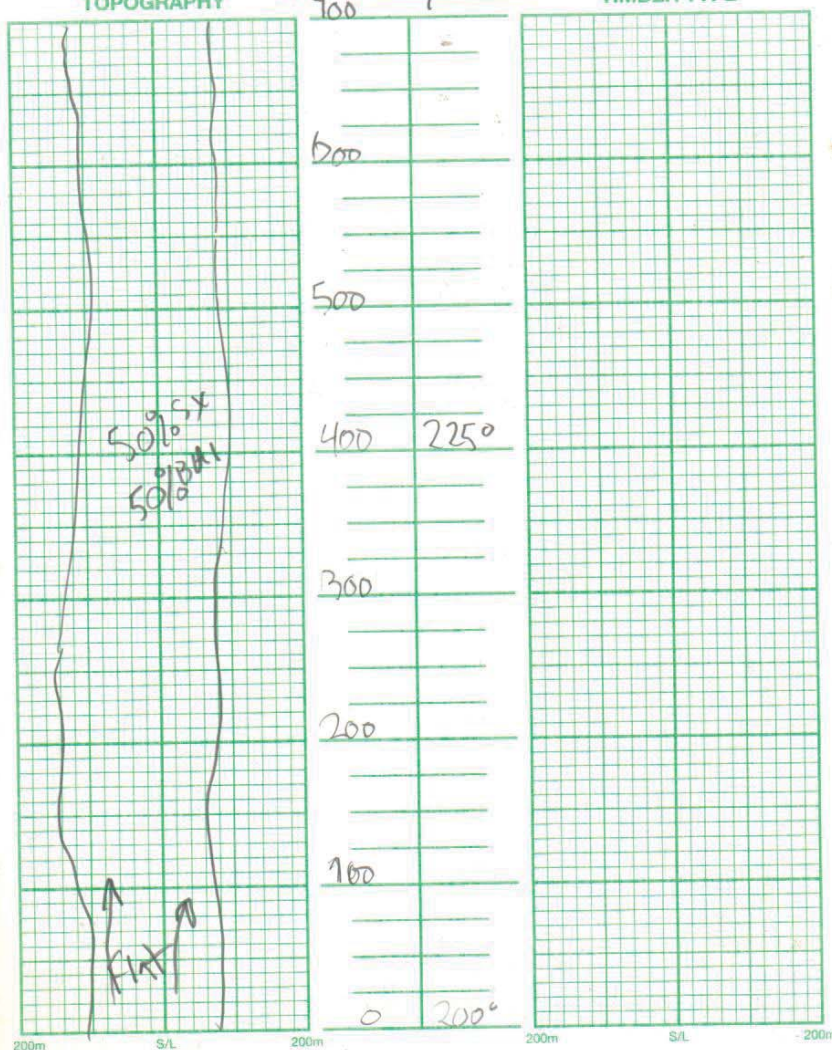


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TOPOGRAPHY

STRIP No. 4

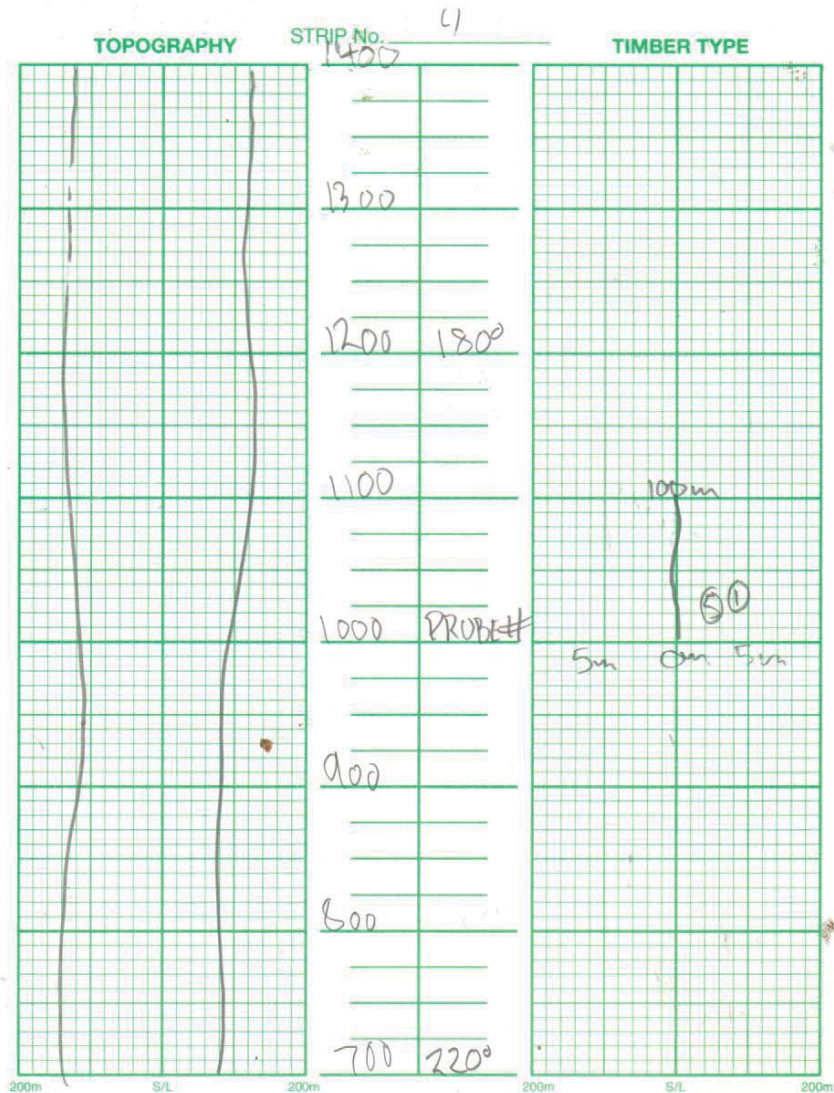
TIMBER TYPE



STRIP NO.: 4 DIRECTION: 200°, 225°
START STRIP: 0 - 700
JOB NO.: PH1-017 DATE: NOV 25, 15
CREW: Pat / Jannec
REMARKS:



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STRIP NO.: 4 DIRECTION: 220°, 180°

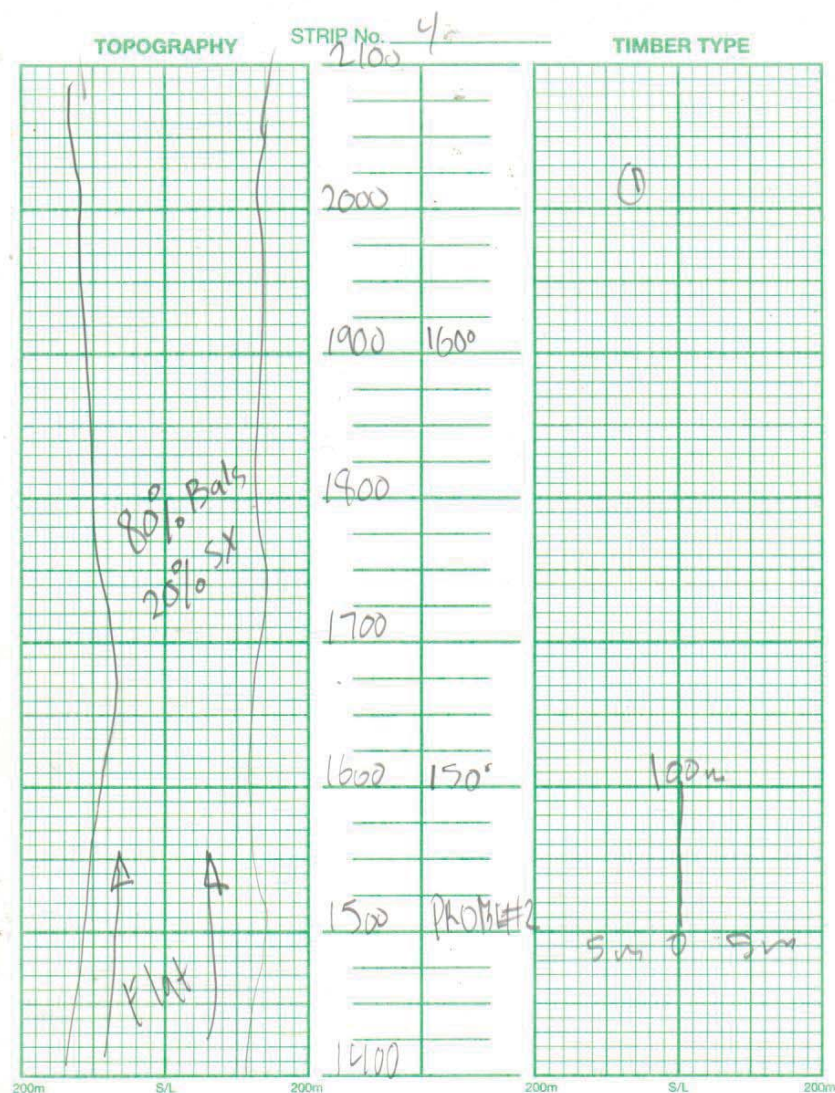
START STRIP: 700 - 1400

JOB NO.: PHI-017 DATE: NOV 25, 15

CREW: Pat / James

REMARKS:

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STRIP NO.: 4 DIRECTION: 180°, 150°, 160°

START STRIP: 1400 - 2100

JOB NO.: PHI-017 DATE: NOV 25, 15

CREW: Pat / James

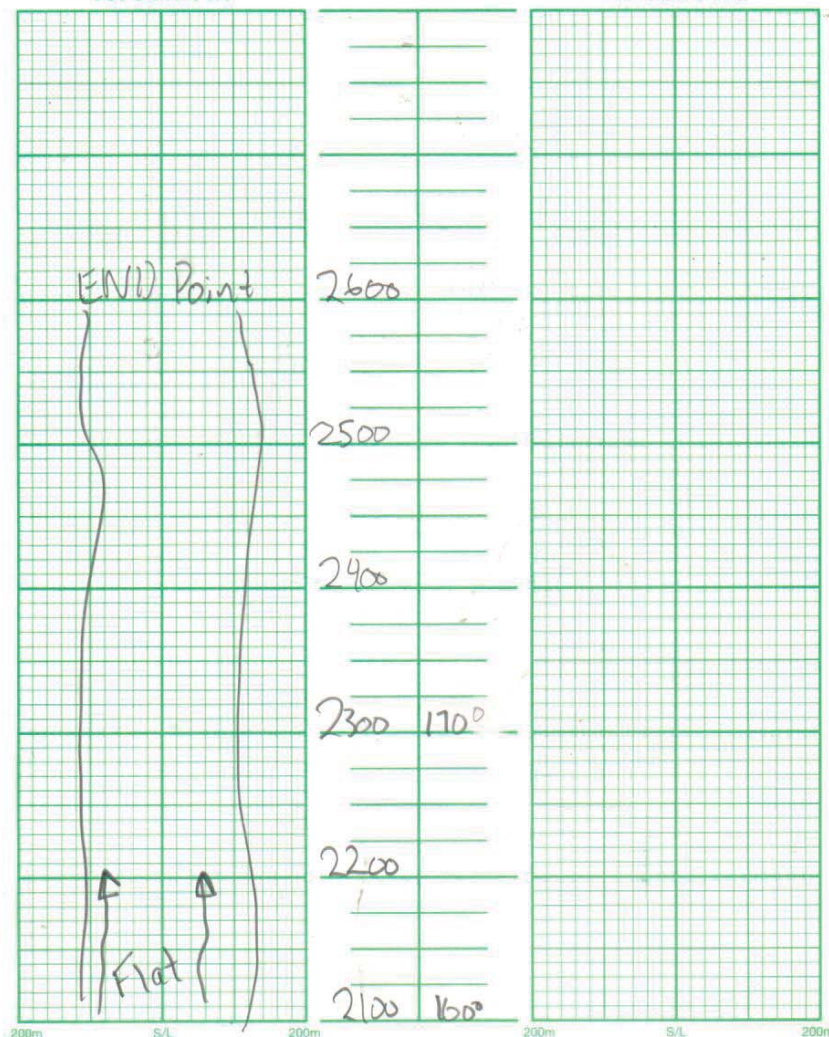
REMARKS:

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TOPOGRAPHY

STRIP No. 4

TIMBER TYPE



STRIP NO.:

4

DIRECTION:

 $160^\circ, 170^\circ$

START STRIP:

2100 - 2600

JOB NO.:

PH1-017

DATE:

NOV 25, 15

CREW:

Pat / James

REMARKS:



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Ph: 1-800-663-6843