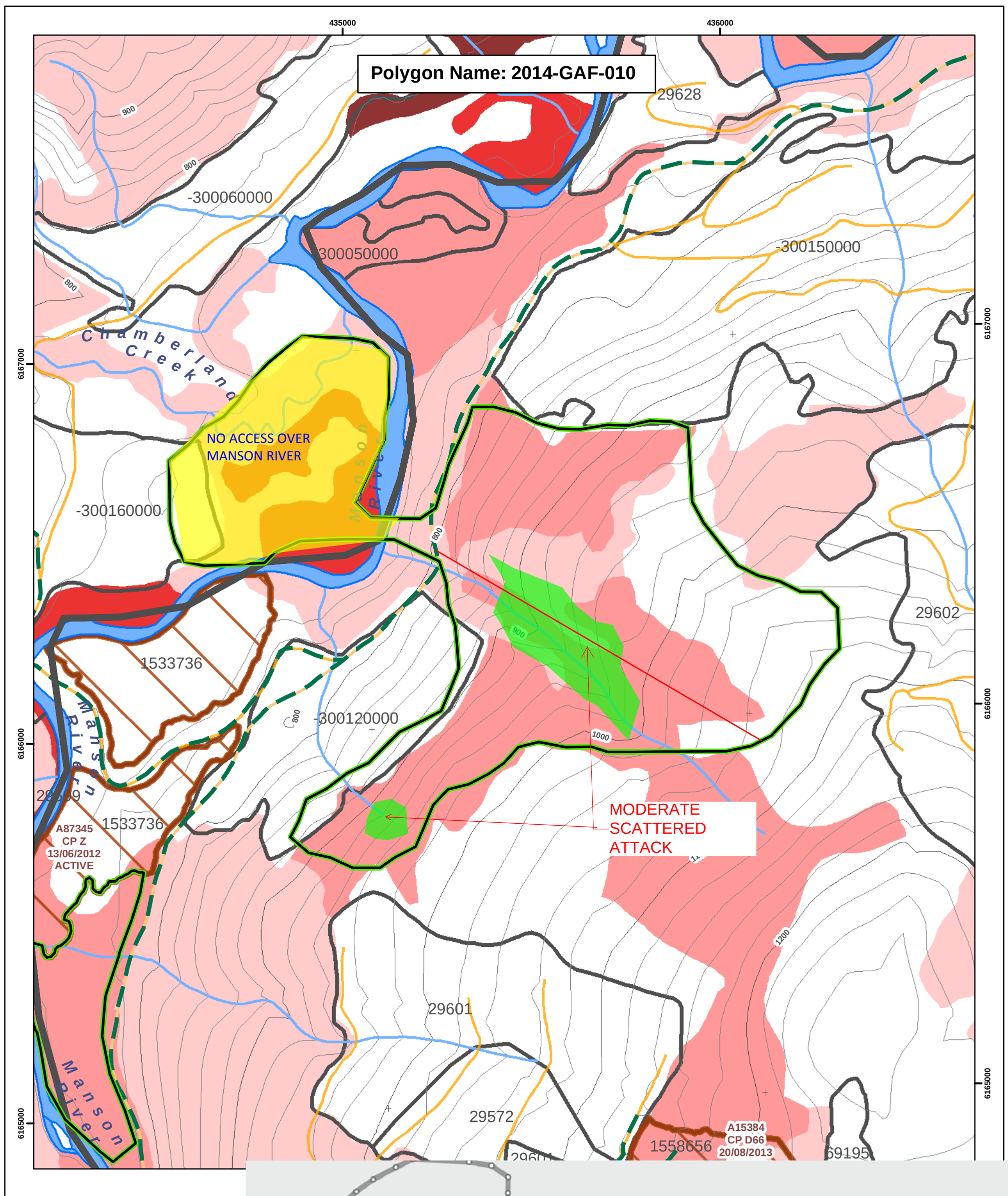
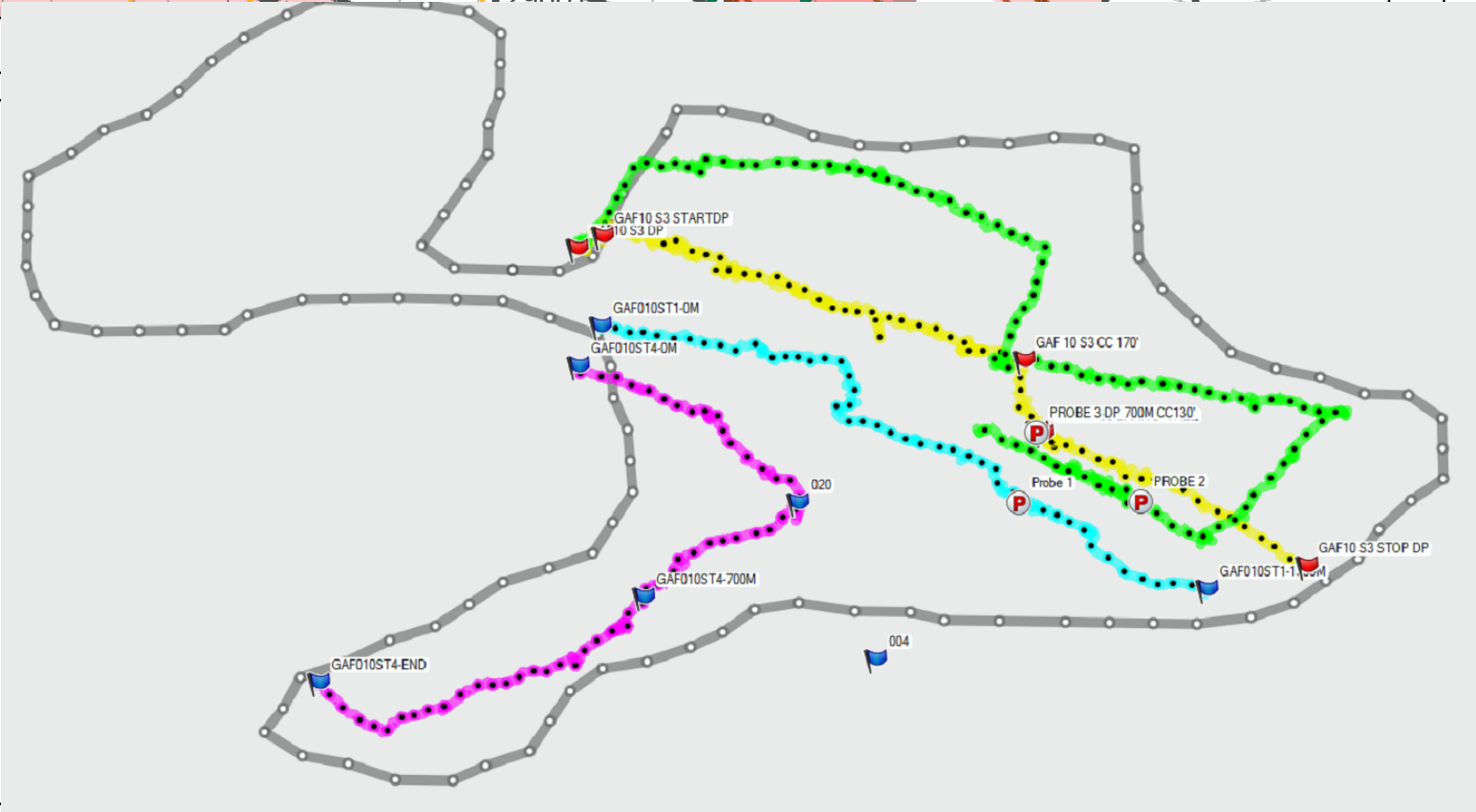




 BRITISH COLUMBIA	Ministry of Forests, Lands and Natural Resource Operations
<h1>Spruce Bark Beetle Field Map</h1>	
Polygon Name: 2014-GAF-010	
Landscape	
Unit/BMU:	Gaffney
Region:	Omineca
District:	Mackenzie
Mapsheet:	093N09
Hectares:	109.23
Scale:	1:10,000
When plotted on 11x17	
Coordinate	
System:	PCS Albers
Datum:	North American 1983
Date Drawn:	03/06/2015
Drawn By:	msnively



**SENECA ENTERPRISES LTD.**

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

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

**SPRUCE BARK BEETLE REPORT
FH16DMK010**

POLYGON: GAF-010

HECTARES: 109.23

WALKTHROUGH DISTANCE: 5300

ESTIMATED INFESTED PIXELS FROM
WALKTHROUGH (Code 1-4)

5 9.4%

SUMMARY OF CURRENT INFESTATION

Walkthrough estimate shows 10% of polygon has Code 1 and Code 3 attack. There are 2 areas that while scattered, are concentrated within the drainages. Sanitation Rating Moderate. (From Mainline through drainage 800-1100 m) (40%)

LIGHT SCATTERED ATTACK WITHIN DRAINAGES.

ACCESS

Access 2wd on Manson Main accesses East side of Polygon and runs along about 39% of it. Access to west portion of Polygon blocked off by Manson River,

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

Very steep with slopes running up from Mainline. Drainage runs down through main part of Polygon down to Manson River. 70% Spruce with average DBH around 30-35cm. West portion of Polygon not accessed due to Manson River, and bridge removed that crosses Manson River to the south.

SIZE, BOUNDARY and PATTERN OF INFESTATION

100+ Hectare Polygon where attack centered mainly along drainages. One Drainage runs down to mainline in NE where Code 1's concentrated although scattered through drainage. (4 Code 1's, 1 Code 3). Also, wet area in South of Polygon where found 1- Code 3.

INCIDENCE AND SEVERITY OF ATTACK

Scattered in Drainage which has light attack densities.

RISK OF BEETLE SPREAD

Polygon has isolated areas of attack that can be identified. Beetle could spread within Polygon.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access to edge, steep up from mainline with draw having additional concerns. Western portion of Polygon has no access, cut off by Manson River.

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

Sanitation and Salvage Rating is MODERATE and isolated to within drainages. With polygon having operability issues, may want to Monitor and schedule a further Walkthrough in Fall of 2016 to identify rate of spread as trees identified in year 1

OPTION 2**PROBE/ TRAP TREES**

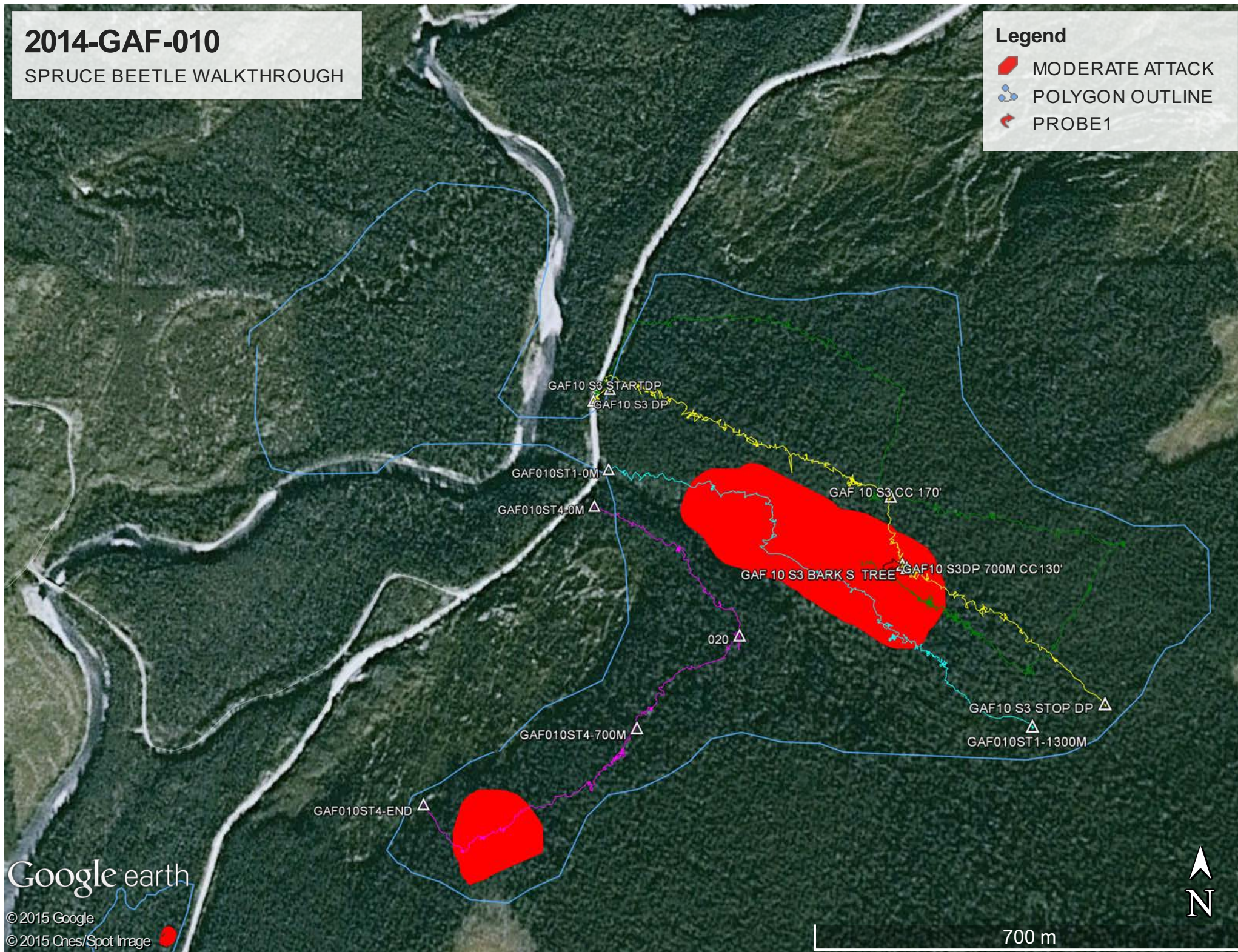
Schedule further Probe and lay trap tree trails down along main road to hold infestation.

2014-GAF-010

SPRUCE BEETLE WALKTHROUGH

Legend

-  MODERATE ATTACK
-  POLYGON OUTLINE
-  PROBE1



Google earth

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© 2015 Ones/Spot Image

Summary						
GAF-010	HEC	109.23	METERS WALKED	5300	% TRAVERSED	4.9%
PIXELS COVERED BY WALKTHROUGH	53	INFESTED PIXELS	5	ESTIMATED % OF BLOCK INFESTED (From Walk through)		9.4%

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	26.4	0.0	0.0	0.0	0.0	0.0	0.0	42.9
25.1-30.0	5.3	31.8	0.0	0.0	0.0	0.0	0.0	0.0	68.9
30.1-35.0	7.1	92.3	0.0	0.0	0.0	0.0	21.3	0.0	28.4
35.1-40.0	9.4	75.2	0.0	0.0	0.0	0.0	9.4	4.7	9.4
40.1-45.0	11.6	92.8	0.0	0.0	0.0	0.0	23.2	0.0	11.6
45.1-50.0	13.8	82.8	13.8	0.0	13.8	0.0	13.8	0.0	0
50.1-55.0	16.2	64.8	16.2	0.0	0.0	0.0	0.0	0.0	16.2
55.1-60.0	18.7	37.4	0.0	0.0	18.7	0.0	0.0	0.0	0
60.1 +	25.3	25.3	0.0	0.0	0.0	0.0	0.0	0.0	0
TOTALS	663.7	528.8	30.0	0	32.5	0.0	67.7	4.7	177.4

TABLE 4- Spruce Beetle Attack Density and Larval Density Rating			
MEAN NO. OF ENTRANCE HOLES PER 225 cm2 PHLOEM SAMPLE	< 1 LOW Attack Density 1.0- 1.9 MOD Attack Density 2.0 - 3.9 HIGH Attack Density	MEAN NO. OF LIVING LARVAE PER 225 cm2 PHLOEM SAMPLE	< 4.9 LOW Mean Larval Density 5.0 - 14.9 MOD Mean Larval Density 15-24.9 HIGH Mean Larval Density >24.9 EXTREME Mean Larval Density
0.67	< 3.9 SEVERE Attack Density	2.67	

TABLE 2- Spruce Beetle Management Options after Walkthrough					
% 2015 ATTACK	4.5%	4.5	SANITATION AND SALVAGE HARVEST PRIORITY RATING		
% 2014 ATTACK	4.9%	##	LIGHT	0-599	LEAVE (Monitor, Trap Trees, Baits, etc)
% 2013 ATTACK	10.9%	##	MODERATE	600-999	PROBE (To Obtain Further Info)
% HOST IN STAND	78.9%	##	HEAVY	1000+	RECOMMEND CRUISING/ LOGGING
					829.5

MODERATE ATTACK IN CONCENTRATED AREAS WHERE PROBE LINES ESTABLISHED. Wlkthrough estimates 70% spruce in stand

SUMMARY OF ALL CARDS FS1111						NUMBER OF CARDS	3
ACCESS -		Access 2wd on Manson Main accesses East side of Polygon and runs along about 39% oof it. Access to west portion of Polygon blocked off by Manson River,					
POLYGON FEATURES -		Very steep with slopes running up from Mainline. Drainage runs down through main part of Polygon down to Manson River. 70% Spruce with average DBH around 30-35cm. West portion of Polygon not accessed due to Manson River, and brdige removed that crosses Manson Rive to the south.					

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	8	0	0	0	0	0	0	13	0
25.1-30.0	5.3	6	0	0	0	0	0	0	13	0
30.1-35.0	7.1	13	0	0	0	0	3	0	4	0
35.1-40.0	9.4	8	0	0	0	0	1	1	1	0
40.1-45.0	11.6	8	0	0	0	0	2	0	1	0
45.1-50.0	13.8	6	1	0	1	0	1	0	0	0
50.1-55.0	16.2	4	1	0	0	0	0	0	1	0
55.1-60.0	18.7	2	0	0	1	0	0	0	0	0
60.1 +	25.3	1	0	0	0	0	0	0	0	0
TOTALS		56	2	0	2	0	7	1	33	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		Unattacked		
Yr _____		Yr _____								
6	4	0	16	0	0	0		0	0	

SIZE, BOUNDARY AND PATTERN OF THE INFESTATION

100+ Hectare Polygon where attack centered mainly along drainages. One Drainage runs down to mAinline in NE where Code 1's concentrated although scattered through drainage. (4 Code 1's, 1 Code 3). Also, wet area in South of Polygon where found 1- Code 3.

INCIDENCE AND SEVERITY OF THE INFESTATION

Scattered in Drainage which has light attack densities.

RISK OF BEETLE SPREAD

Polygon has isolated areas of attack that can be identified. Beetle could spread within Polygon.

ACCESS, OPERABILITY and INTEGRATED RESOURCE MANAGEMENT ISSUES

Good access to edge, steep up from mainline with draw having additional concerns. Western portion of Polygon has no access, cut off by Manson River.

SPRUCE BEETLE PROBE CARD

LOCATION GAF 10		N. 55° 38.206' W 124° 01.128'		PAGE 1 OF 1						
BEARING 310°		DISTANCE 100 m		STRIP WIDTH 10 m						
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		
17.5 - 25.0	3.3									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		31							12	
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN				
						Attacked	Unattacked			
NO SAMPLE	NONE	NONE	NONE	NONE	NONE					
NO SAMPLE	1	1	1	1	1					
COMMENTS WIDE SPACED SX NO ATTACK SOME BLOW DOWN SOME ALDER										
CREW NAMES Don & Dave						DATE Y M D 15 10 15				

SPRUCE BEETLE PROBE CARD

GAF-010 Probe 3

LOCATION 55° 38' 05.1" 124° 01' 44.4"		PAGE 1 OF 1							
BEARING 224°		DISTANCE 100m							
STRIP WIDTH 10m									
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	
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				1				
50.1 - 55.0	16.2								
55.1 - 60.0	18.7								
60.1 +	25.3								
TOTALS		12	-	-	1	-	3	-	19
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 beetle found - steep terrain blow-down - wide spaced SX 30-60									
CREW NAMES Don & Dave						DATE Y M D 15 10 15			

GAF-010 Probe 1

SPRUCE BEETLE
PROBE CARD

LOCATION 55°38'11.8" 124°01'16.3"		PAGE 1		OF 1					
BEARING 122°		DISTANCE 100m		STRIP WIDTH 10m					
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	
17.5 - 25.0	3.3	1							
25.1 - 30.0	5.3	11							
30.1 - 35.0	7.1	1111							
35.1 - 40.0	9.4	111				1			
40.1 - 45.0	11.6	1				11		1	
45.1 - 50.0	13.8	111	1			1			
50.1 - 55.0	16.2		1					1	
55.1 - 60.0	18.7				1				
60.1 +	25.3								
TOTALS		14	2	-	1	-	5		3
BARK SAMPLES 15cm x 15cm	NO. ENTRANCE HOLES	NO. PARENT ADULTS	NO. LARVAE	NO. PUPAE	NO. CALLOW ADULTS	FRESH (GREEN) BLOWDOWN			
						Attacked	Unattacked		
NE	25	0	12	0	0		-		
SW	20	0	4	0	0		-		
COMMENTS gentle slope - some larvae in two trees - mostly 5's - few other species were Balsam									
CREW NAMES Don & Dave						DATE Y M D 15 10 18			

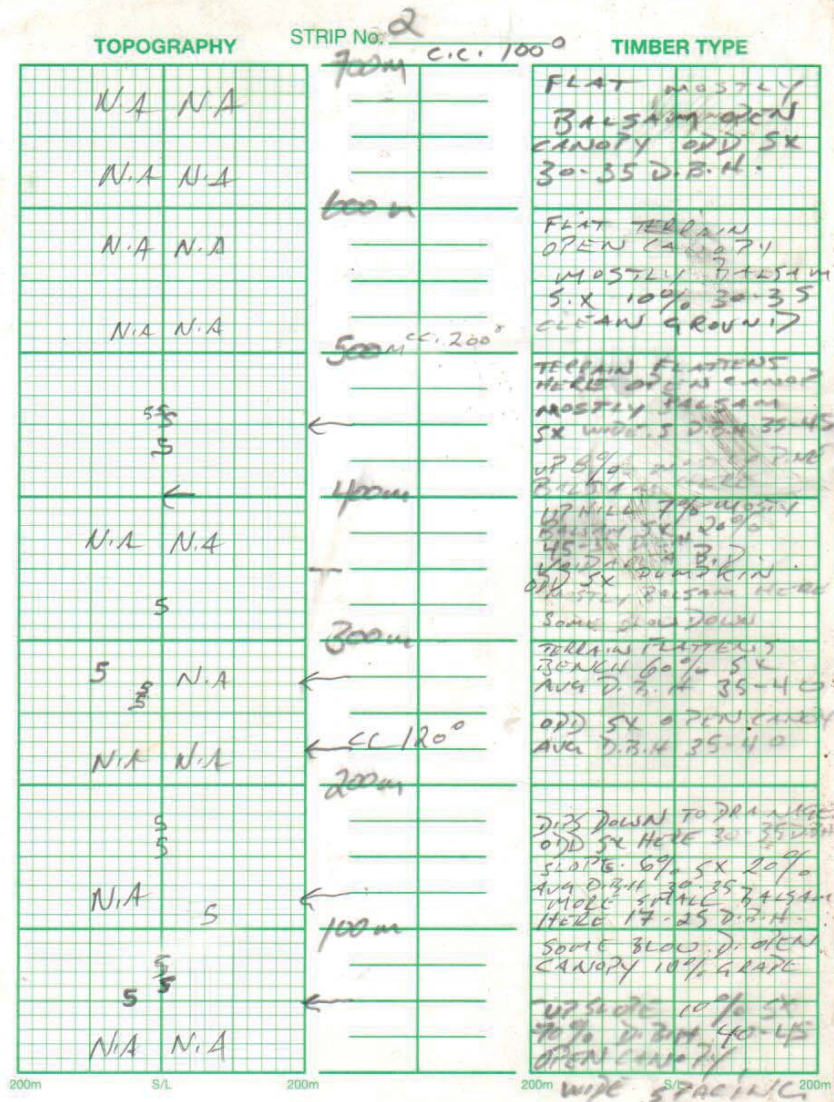
FS 1111 BPG 2000/01 7530001/010 (1001b-4)

BARK SAMPLE

SPRUCE BEETLE
PROBE CARD

LOCATION GAF-10		N 55°38'26.9" W 124°01'24.2"		PAGE 1		OF 1			
BEARING 130°		DISTANCE		STRIP WIDTH 10					
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	
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						1	
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		
N. SAMPLE	6	NONE	3	NONE	NONE				
S. SAMPLE	7	NONE	3	-	-				
COMMENTS									
CREW NAMES						DATE Y M D 15 10 19			

FS 1111 BPG 2000/01 7530001/010 (1001b-4)



STRIP NO.: 2 DIRECTION: 90°
 START STRIP: 0-M
 JOB NO.: GAF-10 DATE: OCT/18/15
 CREW: DON & DAVE
 REMARKS:

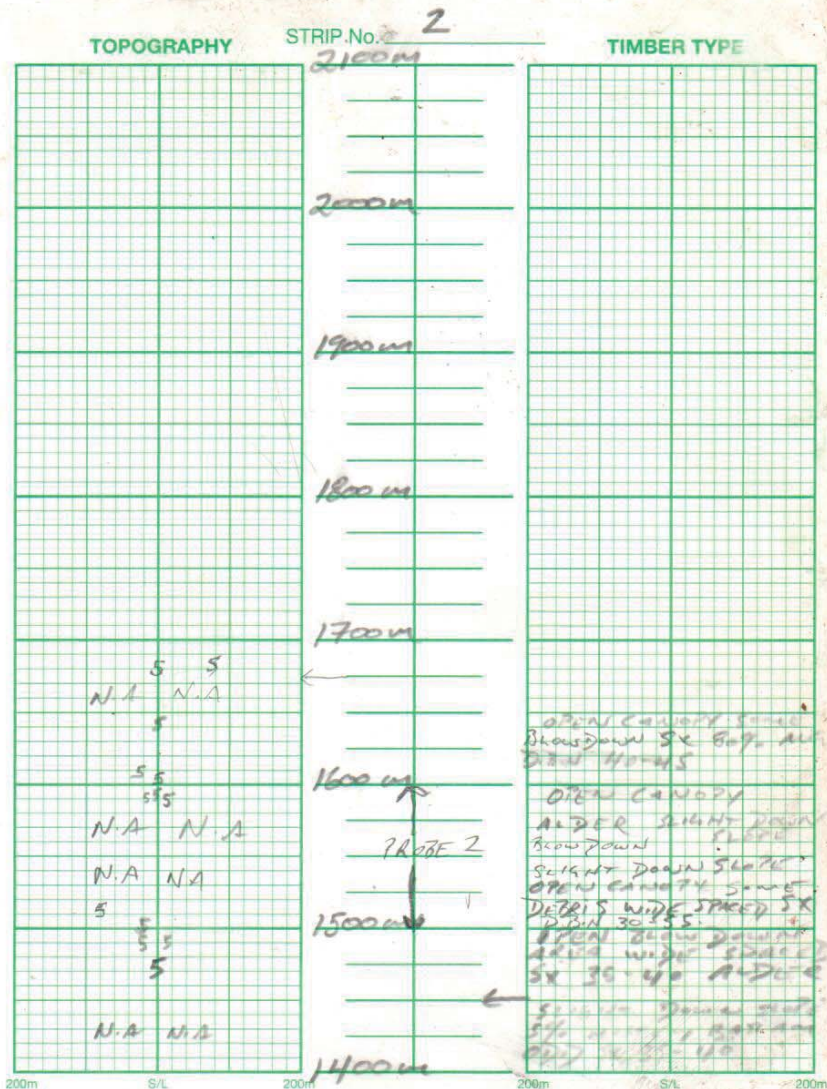


www.irisupplies.com
 Ph: 1-800-663-6843

STRIP NO.: 2 DIRECTION: 100°
 START STRIP: 700m
 JOB NO.: GAF-10 DATE: OCT/18/15
 CREW: DON & DAVE
 REMARKS: NOT ENOUGH SX HERE



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 Ph: 1-800-663-6843



STRIP NO.: 2 DIRECTION: 310°

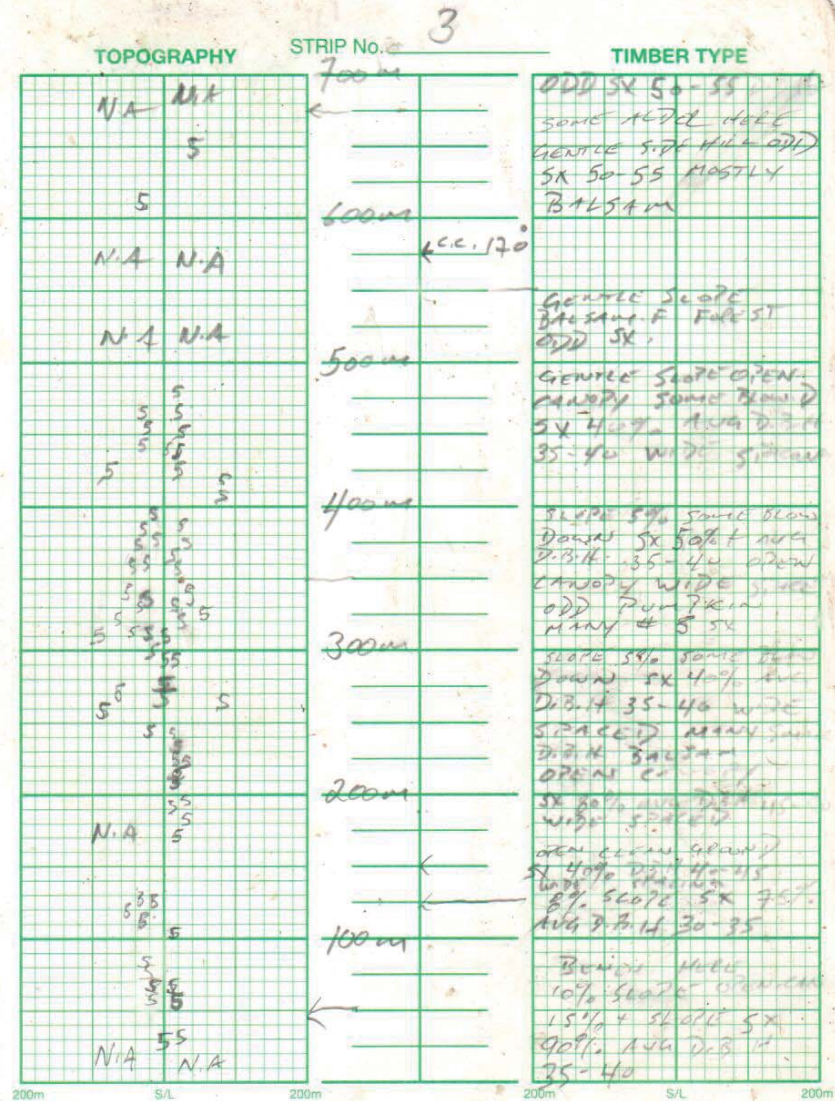
START STRIP: 1400m

JOB NO.: GAF-10 DATE: OCT/18/15

CREW: DON & DAVE

REMARKS:

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STRIP NO.: 3 DIRECTION: 120°

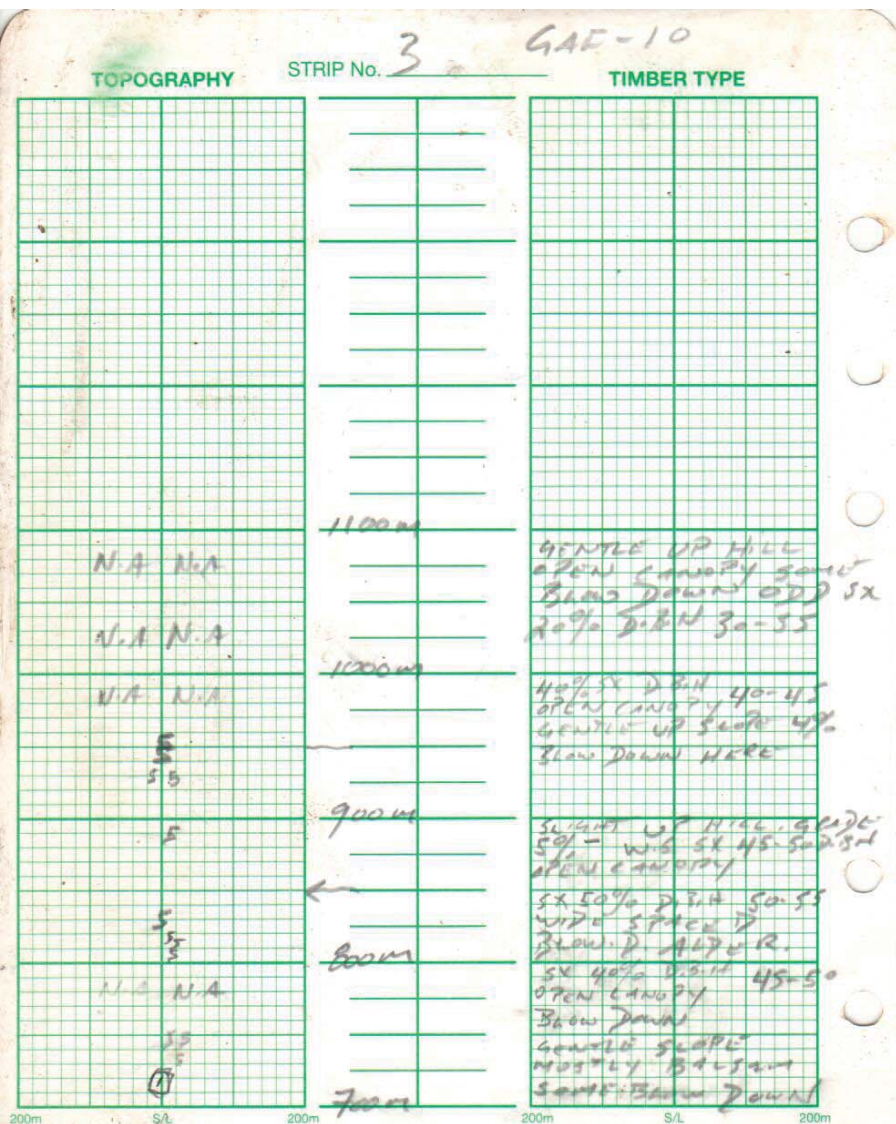
START STRIP: 0-m

JOB NO.: GAF-10 DATE: OCT/19/15

CREW: DON & DAVE

REMARKS:

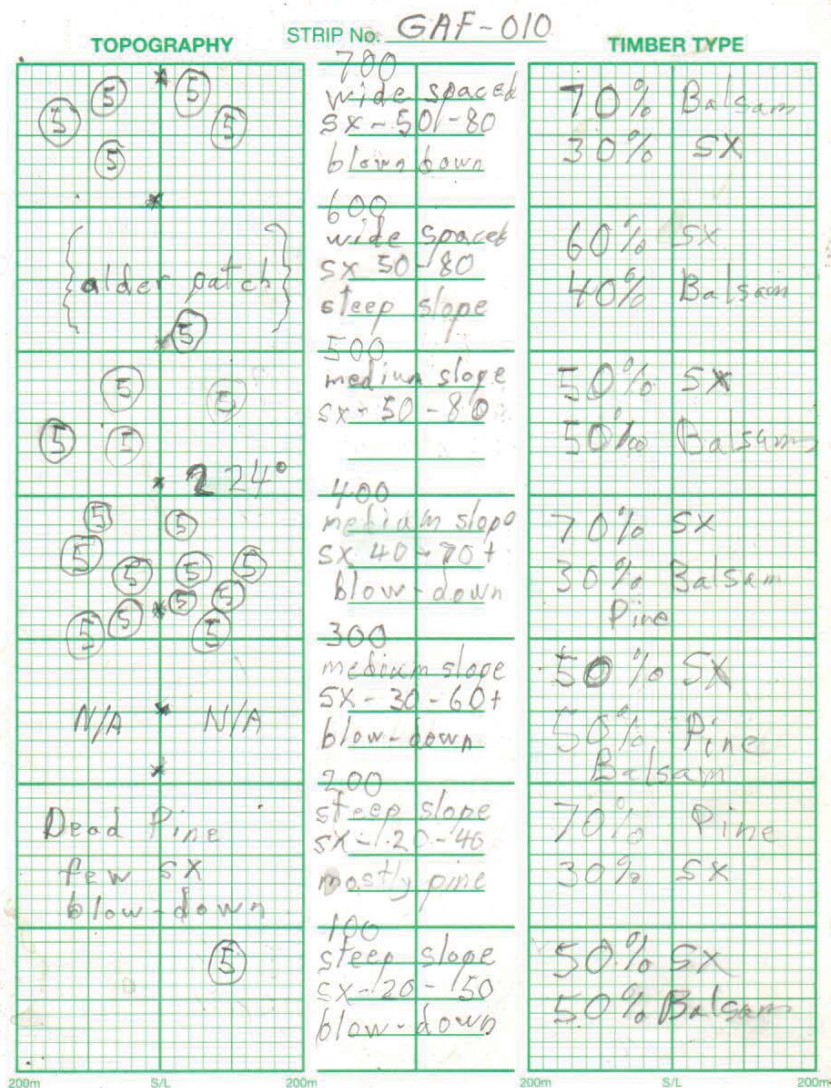
www.irisupplies.com
Ph: 1-800-663-6843



STRIP NO.: 3 DIRECTION: 130°
 START STRIP: 700m
 JOB NO.: GAF-10 DATE: OCT/19/15
 CREW: PAUL & DAVE
 REMARKS: OLD ATTACK ALONG THIS STRIP



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STRIP NO.: 4 DIRECTION: 120°
 START STRIP: _____
 JOB NO.: _____ DATE: 15/10/19
 CREW: Don & Dave
 REMARKS: _____

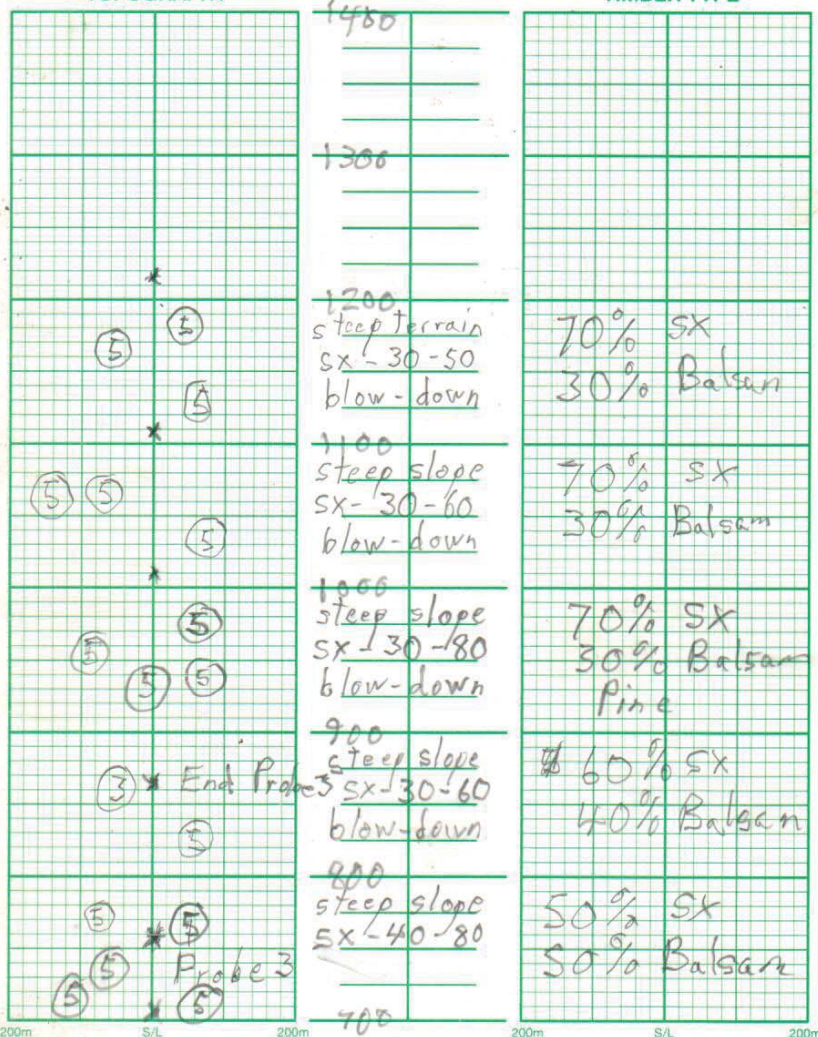


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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. GAF-010

TIMBER TYPE



STRIP NO.: 4

DIRECTION: 224°

START STRIP:

JOB NO.:

DATE: 15/10/19

CREW: Don & Dave

REMARKS:

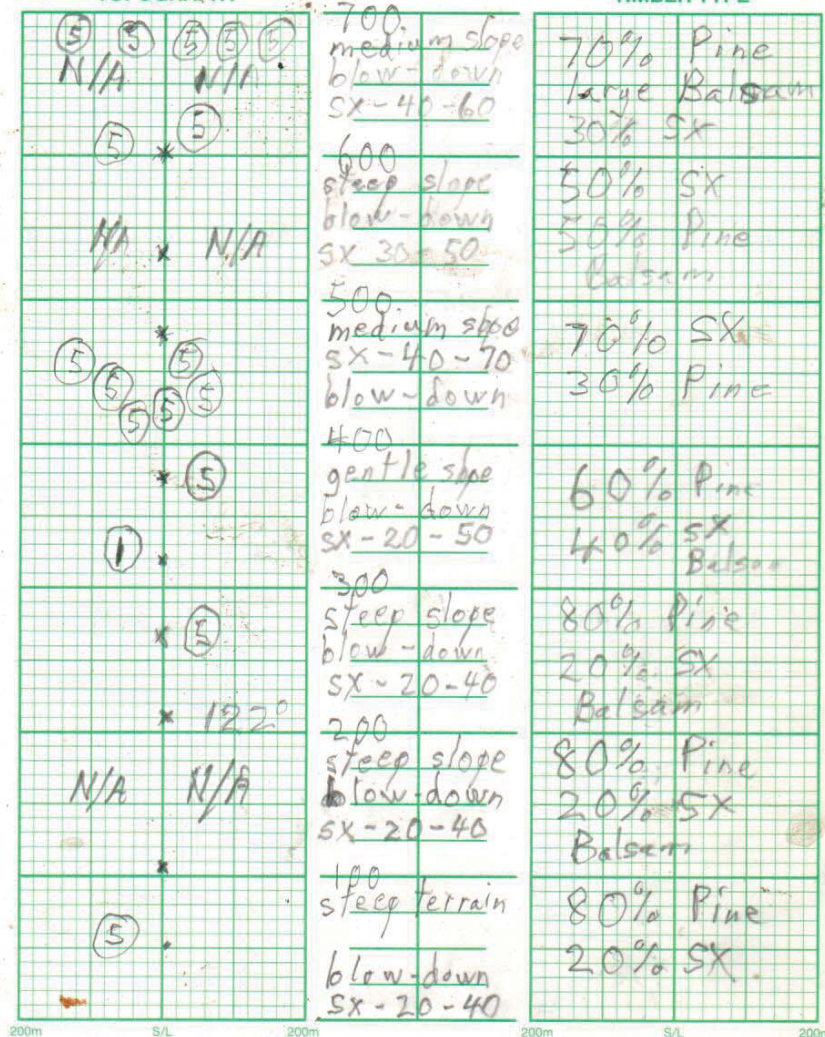


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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. GAF-010

TIMBER TYPE



STRIP NO.: 1

DIRECTION: 93°

START STRIP:

JOB NO.:

DATE: 15/10/18

CREW: Don & Dave

REMARKS:

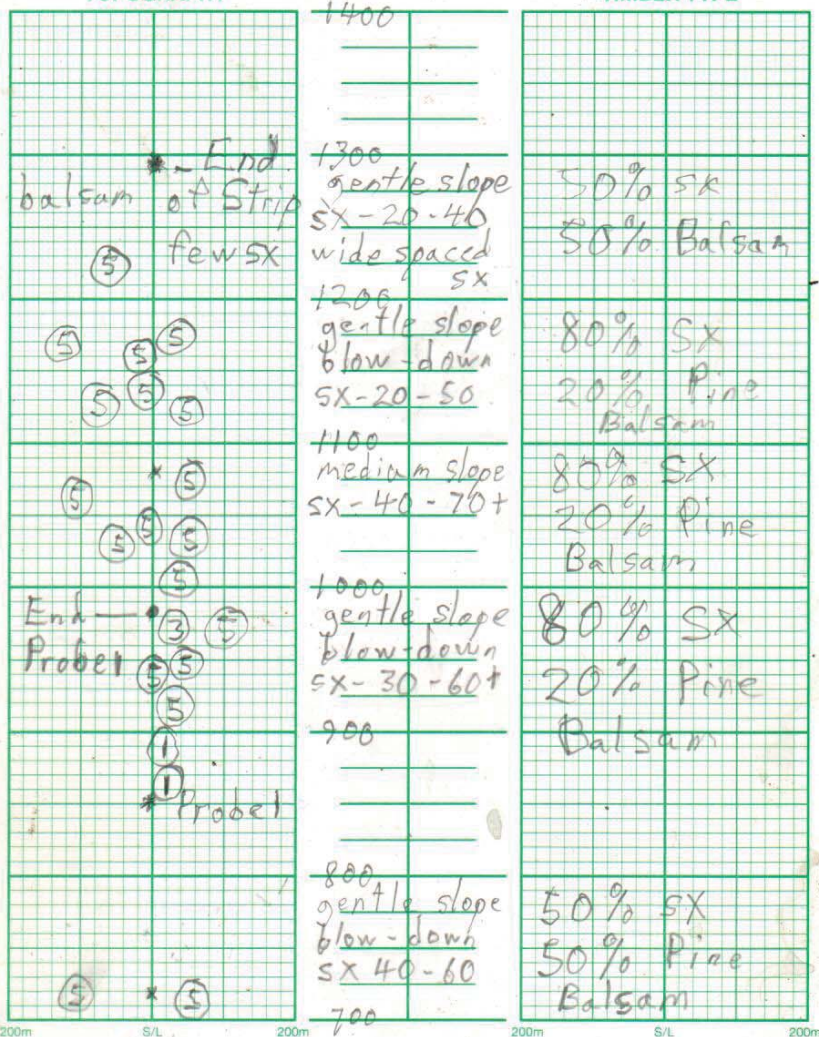


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Ph: 1-800-663-6843

TOPOGRAPHY

STRIP No. GAF-010

TIMBER TYPE

STRIP NO.: 1DIRECTION: 122°

START STRIP: _____

JOB NO.: _____

DATE: 15/10/18CREW: Don & Dave

REMARKS: _____



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