Department of
CONSERVATION & LAND MANAGEMENT

File: 443

Nannup District
NANNUP 6275

29 July 1986

The Manager
Environmental Protection
Department of Conservation & Land Management
COMO 6152

ATTENTION; Mr Batini

BEATON QUARANTINE LOGGING TRIAL

Attached are Mr A Price's notes (marked 2) which are referred to in his initial notes (marked 1). This second series of notes details a number of incidents which may have led to a breakdown in hygiene.

I have discussed the contents of both series of notes with Mr Price on Friday 18 July 1986 (see attachment 3 for my detailed comments).

Points arising from these discussions:

1) From the outset both Mr Price and I were frank in our discussion. The meeting lasted approximately three hours. I was able to bring Mr Price up to date with the Department's latest advances in hygiene (landforms, 230 mm photography) and answered all his questions satisfactorily. Mr Price was particularly concerned as to why logging was permitted inside quarantine. He appeared to accept my explanation.

good

At all times the discussions were cordial.

good

2) I am convinced that Mr Price is genuine and have treated his comments in that regard.

When asked why he had not brought his notes 1 and 2 to my attention earlier Mr Price stated that he produced the notes when employed by Bunnings and gave them (Mr R Adams) a copy in late 1983. As he was then employed by the industry he felt it was up to senior industry personnel to pass his notes onto this Department.

check R. Adams

3) I believe his notes are useful for two reasons:

a) following remapping of the Beaton trial area in 1987/88 his notes will be invaluable in explaining possible dieback infections, or for that matter a lack of infections.

Yes

b) The notes are a valuable guide in that they list many minor and some major errors. I intend discussing his notes in detail with my logging officer to ensure similar mistakes are not being made in our current operations. (see attachment 3 for my comments on Mr Price's notes).

RECOMMENDATION

discuss with JS. NO.

That you pass these notes or a summary of the major points on to all Districts under confidential cover informing them of the points learnt from the Beaton trial and suggest they check out their current operations.

CONCLUSION

Mr Price is to be commended on his meticulous approach which I believe may enable the Department to determine causes of any new dieback infections provided there is appropriate follow up at a Departmental, Regional and local level.

D P Meehan

DISTRICT MANAGER

Attachment: Comments on Mr Price's Beaton Trial - Hygiene Faults

Mr Price's Beaton Logging Trial Notes 1 and 2

DISTRIBUTION: R/M Bunbury - Mr Spriggins

DPM/SEA

RESPONSE TO POINTS RAISED BY A. PRICE
(Mr Price's notes attached - Marked 1)

The dates refer to the dates listed in Mr Price's letter.

28.4.82 "road entrance was blocked"
During the period 16/3/82 to 20/4/82 a D7 walked off Gold Gully Road (after wash down) through green bush to clear the demarcated roads E1 and E2. A log barrier was placed across this entry on 16/3/82. Thus the D7 refuelled from its tender vehicle which was parked on the Gold Gully side of the barrier log. Therefore entry into quarantine via this "entry was not possible between 16/3/82 and 20/4/82". Entry may have been possible when the grader was forming the road between 20/4/82 - 28/4/82 as I can not recall if the track was blocked after the grader began work. The track was blocked on 28/4/82.

24.1.82 The residue gravel contained in the gravel trucks was not washed out as this was not considered necessary. The gravel had come from a dieback free pit. The trucks, when gravelling road K used clean gravel and gravelled road K from the pit out in dry soil conditions. The chances of the trucks picking up gravel when turning around on the ungravelled section of road K in dry soil conditions were and still are considered infinitesimal. Infection from the dozer when pushing up the pit is unlikely though in hindsight the dozer should have washed down.

14.2.83 This drain was inadvertently placed beyond the demarcation line. I estimate that 0.01 ha of forest was infected or put at risk.

16.2.83 Price and a Departmental officer agreed, after inspecting the plant deaths, that initially only one sample was necessary. Note that E2 (road plus upper and lower drain) was first sampled on 12/3/82 with a negative result. Indicator species deaths sampled on 15/7/83 gave a positive result for P.C. As the area had been logged in April 1983 it is possible that a maximum of 6-8 ha of forest may have been put at risk. An updated dieback free map produced from 7.5.82 photos showed this sample point to be in an interpreted risk zone. If this was known at the time of road demarcation/construction, the road would have been placed above this zone.

2.5.83 F.D. water tank driven 9 metres beyond the dieback demarcation pegs. Such an error adequately illustrates both the need for good training for both industry and Departmental personnel and the need for good permanent field supervision.
Rainfall figures for that period are:

	BEATON	NANNUP
22/4 to 30/4/83	0	no entry
1/5/83	0	0
2/5/83	11	4
3/5/83	0	18.5

6.5.83 inadequate washdown of log truck.
The Department is and always has been committed to full wash down.
Immediately after this incident was brought to the Department's attention, a Department representative discussed the matter with the industry supervisor to ensure the episode was not repeated.

Price had overall control

4) interim assessment
"only 10 sample sites in coupe six"
The aim of sampling was to confirm the presence of the P.C. where either visual symptoms were observed or where dieback was likely to be present e.g. road drains.
The most effective test to determine the presence or otherwise of P.C. over the whole area will be the dieback free maps to be produced following the 1988 photography.

yes.

5) only two of the road and drain samples (in cpe 6) are negative.

cpe 6 samples (see appendix 1 for full E2 results

SITE	NO. SAMPLES	+ FOR PC	P.cit.	OTHER	TOTAL	
E1	8	–	–	–	–	
E2	3	1	–	–	1	
E2A	4	1	–	1	2	lower drain
E2B	5	–	1	–	1	road surface
E2C	5	2	–	–	2	Upper drain
E2D	5	1	–	–	1	bush 20m above roa
E3	1	–	–	–	–	
E4	2	1	–	–	1	discovered prior to logging, excluded from logging
E5	5	2	–	–	2	taken from above road 6m from drain
E6	6	–	–	–	–	taken from upper drain
E7	4	3	–	–	3	taken from drain cut into bush
E8	6	–	–	1	1	
E9	1	1	–	–	1	
E10	1	1	–	–	1	
TOTAL	56	13	1	2	16	

Of the 10 sites sampled a total of 56 times, there are 5 sites located in the forest which were positive for P.C. See below for discussion of impact.

IMPACT

E2A – with current knowledge road would have been placed above interpretted risk zone.
E2C – as above
E2D – as above
E2A and E2C illustrate the value of low profile roading and barrier logging as hygiene techniques.

current practice

yes

E2D - only one out of five samples came up positive. As the bush now (July 1986) looks healthy I will arrange for the area to be inspected by an interpreter in spring/summer 1986. It is possible that P.C. was inadvertently introduced into the sample taken on 29/9/83. If in fact P.C. was present in the 29/9/83 sample it was probably there prior to logging as a latente infection. The fact that this could happen effectively illustrates the importance of washdown between mini-catchments and every second fallers block.

or introduced?

E4 - excluded from logging. A latent infection. Comments above are appropriate.

E5 - sample taken from bush approximately 6m above drain. A very remote possibility that infection was introduced by the road making (front end loader operator) crew. More likely a latent infection.

E7 - drain cut into bush (mentioned in E5). Either a latent infection which became active when disturbed or dieback introduced by roading crew. Approximately 0.01ha of forest put at risk.

E9 E10 - sampled 29/10/85
Possible sources of dieback
a latent infection
logging (snigging machine)
animals

I am relatively confident that logging was not the vector which introduced dieback as to date rather than a poka dot series of infections one would expect from a logging vector, only two isolated infections have appeared, however the potential is serious therefore I will arrange for additional sampling to occur in spring/summer 1986.

or from the road

6 & 7 "Between the first shunt and the trial entrance on Road E2....." This appears to be latent infections.

I am confident that all bush infections currently known are a result of latent infections or a result of a road being placed too low in the profile. Nevertheless the situation will be closely monitored with further samples being taken if considered necessary. I believe it is not essential to take many samples as the area is to photographed in 1988.

What about items 8 - 17?

BEATON DIEBACK SAMPLES.

appendix 1 - full sampled E2 History

TE LECTED	RESULT.
5 82	NEG.
3 82	NEG.
2 83	NEG.
6 83	NEG.
8 83	NEG.
9 83	NEG.
12 83	NEG.
5 84	NEG.
9 84	NEG.

SAMPLE N°	DATE COLLECTED	RESULT.
E2	12 3 82	NEG.
E2/2	16 2 83	NEG.
E2/3	3 6 83	P.CIN
E2/A	15 7 83	P.CIN
E2/B	15 7 83	NEG.
E2/C	15 7 83	NEG.
E2/D	15 7 83	NEG.
E2/B2	29 9 83	P.CIT
E2/C2	29 9 83	P.CIN
E2/D2	29 9 83	P.CIN
E2/A2	7 12 83	NEG.
E2/B3	7 12 83	NEG.
E2/C3	7 12 83	NEG.
E2/D3	7 12 83	NEG.
E2/A3	16 5 84	P.?
E2/B4	16 5 84	NEG.
E2/C4	16 5 84	P.CIN
E2/D4	16 5 84	NEG.
E2/A4	25 9 84	NEG.
E2/B5	25 9 84	NEG.
E2/C5	25 9 84	NEG.
E2/D5	25 9 84	NEG.

SAMPLE N°	DATE COLLECTED	RESULT
E3.	16 2 83	NEG.
E4	16 2 83	P.CIN
E4/2.	7 12 83	NEG.
E5	3 6 83	NEG.
E5/2	29 9 83	NEG.
E5/3.	7 12 83	NEG.
E5/4.	16 5 84	P.CIN
E5/5	25 9 84	P.CIN

① DB10

BEATON LOGGING TRIAL

19/4/86

Coupe 6 Road E1 and Road E2 Autumn 1983 logging.

History of events :-

12- 3-82	Demarcated roads E1 and E2: sampled four sites along proposed roads.
16- 3-82	D7G dozer commenced clearing road.
20- 4-82	Grader formed road.
28- 4-82	Road entrance was blocked; public could have used these roads since 16-3-82.
20- 1-83	Cleared area for washdown ramp; ramp transported from Autumn 82 area.
~~24~~- 1-83	Gravelling commenced - gravel trucks moved from Road K to Road E. (clean gravel 2 ...) Forest Dept. officer permitted the trucks to enter with a washdown of chassis and tyres; the residue of gravel in the bins was not washed out. Road K was later known to be infected; the truck should have had a total washdown.
14-2-83	A. Price detected tree deaths in four areas within the dieback free logging coupe. Took photos of area.
	Noted that Palmers roading crew had pushed a drain about nine metres beyond dieback demarcated area. The site of this error later showed a positive sample.
✓16- 2-83	(any need or were other deaths some distance from samples) Forests Dept, sampled two sites in coupe; sample E4 approx. 30m above road showed positive. Other deaths were not sampled ~~but sample E2D~~ was sampled on 28- 9-83 and showed positive six months after logging.
8 -3-83	Area scrubrolled. (Nannup file: zero 1/5, 4mm 2/5, 18.5 3/5)
20- 4-83	Log trucks carted logs from the area.
2- 5-83	Forests Dept. filled water tank but driver drove nine metres beyond dieback markers at the ramp. Eleven mm of rain in 24 hrs? roads were muddy.
(sampling) 6- 5-83	Palmers log truck only partially washed down, mud still on wheels; supervisor had earlier comlained to the driver that he was spending too much time washing down.
26- 5-83	Indicator species had died near road at the site of the drain error. (refer latter comments of 14-2-83)
22- 8-83	Unauthorised entry on Road E1 beyond gravel pit - firewood collector.
7-11-83	Completed moving of logs, up to now, marri chip logs had been stored in this area.
1984	Tops disposal / regeneration burn. Area to be quarantined until 1988/89.
1985	Poison all marri and most jarrah trees with Roundup.

-/2

R/M Bunbury att J. Skillen
D/M Nannup attn D. Meehan.
Mr. Price gave me a copy of this on 30/6/86. Also please could you examine please and comment. I'll then send you the 5 specific questions on P5.
I'll probably follow this up on reply to Adrian.
Monday 10 as I'll be at Nannup that morning 7/3 ...

COUPE DESCRIPTION.

Coupe 6 is bouded by Road E1 and Road E2; the roads and the whole of this coup had been interpreted as dieback free a few months before the trial commenced.

The logged area is 62 Ha of jarrah / marri forest with pockets of bullich and W.A.blackbutt.

A washdown ramp 50 metres long, water tanks and pump were situated immediately inside the dieback free area, All vehicles were washed down on entry during moist conditions.

Volume of logs for this area averaged :-

Jarrah sawlogs 52 m^3 per Ha (the highest for the Beaton Trial)

Marri chiplogs 25 m^3 per Ha

TRIAL AIMS. (as recorded in "Interim Report - Beaton Logging Trial" 30/8/83)

1. To test the ability of the timber industry and the Forests Dept. to carry out a rigorous hygiene logging operation in declared Disease Risk Area in Nanmup without introducing or spreading dieback.

2. To develop practical and hygiene techniques for logging in declared Disease Risk Areas in the Central Region using "dieback free" maps produced by the aerial photography group.

3. To develop a practical operational system of dieback terminology and mapping.

COMMENTS REGARDING AIMS.

1. On 28/5/80, Noel Ashcroft wrote regarding the Integrated Logging Plan for the Northern Jarrah Forest. " It is Forests Dept. policy not to permit re-entry of forest operations into quarantined areas without demonstrating they can operate without further spread of dieback disease ".

2. In reply to my letter of 2/1/85 to Dr.Syd Shea, Executive Director of Dept. of Conservation and Land Management; in which I sought explanation for the logging by the industry in Disease Risk Areas; some years prior to the results of this, and other trials. Dr.Shea wrote on 6/5/85 "Back in 1974 when the Government decided to establish Quarantine areas in State forest, it was on the proviso that the supply of sawlogs to the timber industry would not be reduced. Subsequent Governments have endorsed this policy".

INFLUENCE OF THE TRIALS

Evaluation of these logging trials will be made in 1988/89; despite the policy stated by Noel Ashcroft, logging on a non-trial basis has been carried out in Disease Risk Areas for a few years now but mainly on a small scale. In mid 198[illegible] full scale logging commenced in Ellis Creek, reputed to be amoung the best jarrah forest on Earth. To date, none of the trials have been able to demonstra[illegible] we can log without introducing or spreading dieback. The reverse appears to be the trend at present.

INTERIM ASSESSMENT (this report is regarding Coupe 6 only)

Coupe 6 is less than 10% of the Beaton Trial area; until May 1984, only ten sample sites exist in this area (from my observation, this has not been increased to this day). Two of the three samples within the logging area showed a positive sample of Phytophthora cinnamomi (commonly known as jarrah dieback). Only two of the road and drain samples are negative. These samples alone, indicate we have not achieved the aim of not introducing or spreading dieback. Between the first shunt and the trial entrance on Road E2, several indicator species have recently died, in an area up to 15 metres above the road. This is a definate extension of sampling made by myself and F.D.Officer M.Zwart in May 1984. Species recently died were :- patersonia, banksia grandis, adenanthos, macrozamia palm, xanthorrhoea preissii; all were in close proximity to each other.

At this early stage of the trial, it is difficult to accurately assess the reasons for the dieback appearing in areas believed to be free of dieback.

Among many possible theories; the undermentioned ideas should be considered :-

1. Interpretation; this was mainly a visual assessing of indicator species; firstly by use of aerial photographs and then by a ground crew. The failing in this method is that when a plant is dying from Pc, we have no idea how long the plant has been fighting the disease; it may be months or several years. For this reason, visual interpretation can be very inaccurate, yet it is still practised and often without the more positive aid of widespread soil sampling. We have no positive way of detecting where the disease is, or where it is not without strict sampling of soil and plant tissue. This involves sampling on a grid square of about every 20 metres and to a depth of up to two metres; this is economically out of the question and in itself

The Beaton Trial has demonstrated that while visual interpretation is a useful tool, it must be supported by intense sampling.

2. Infringement of hygiene regulations; I kept records of all events I considered placed the area at risk of infection. More infringements were made against the Forests Dept. than against the combined industry. For the purpose of the trial, I regarded errors, ignorance and deliberate violation of regulations as having equal value regarding forest hygiene. Coupe 6 has the benefit of the least infringements. This is one of the reasons I have chosen this coupe as an example of the most up to date techniques and strictest monitoring of any forest area in this region. Yet, human errors still occur as has already been shown in the History of Events on page 1.

3. A mapping error was made in this area; the first maps we received were the maps we used to demarcate the road. A later edition of the map indicated we have placed the final 200 metres of Road E2 in a ~~dieback~~ suspect zone. At the time of demarcating this road, indicator species all appeared healthy.

CONCLUSIONS - DIEBACK TRIAL

Disturbingly few Soil/tissue samples have been taken in Coupe 6 and the rest of the trial areas. For one sample to show positive in Coupe 6 is bad news, we have seven out of ten samples showing positive. Worse events occured in the other coupes, I have full details if required. To me it is clear that we have not yet perfected a technique to enable us to log an area without considerable risk increasing dieback spread. From these early results, it is not only irresponsible but criminal to log dieback free areas, knowing it is at great risk of being permanently affected by dieback.

The only reason these areas are being logged is because good jarrah cannot be found anywhere else; continued mis-management and overcutting has now revealled the truth and will soon have a dramatic affect on the workforce in the hardwood industry.

SILVICULTURE IN DIEBACK TRIAL (this project is known as "Jarrah Stand Improvement")

We have a conflict in that this trial area is being used for more than one trial, all marri trees and most jarrah trees have been poisoned using an axe and the cut being filled with the herbicide Roundup. Many banksia trees have also been poisoned; Banksias are the main indicator species of dieback and may be visible with aerial photography. It is most important that we can identify

the cause of death in these banksias when the area is to be aerially assessed. The cause of death cannot be determined from the air; foot patrols will be needed. From my experience, this will not happen; if it did, it would be by persons with a minimum of training for the task.

When the industry logged this coupe in 1983, the logging contractor supervisor who was a man showing great concern for the forest; he considered that we had left far too few standing trees and that many of those remaining would blow over due to their sudden lack of protection. Some of these trees have since blown over. Due to the poisoning programme, the few trees that are left are on their own. In 40 - 50 years time, the industry could have logged the trees that have now been poisoned. The earliest the industry could return to that area would be 120 - 150 years time; that is, provided dieback has not taken its toll.

Not only should we be alarmed about the so called silviculture project but the area they have chosen to do it. According to the trial prescription, "Regeneration/tops disposal burn to be carried out before Dec.1984 the area to be protected from fire for ten years or until regeneration will survive a fire" "Area to be re-quarantined from March 84 until March or May 1988" "Aerial dieback photography, re-mapping, evaluate results and report March 1989".

I regard the poisoning programme as a breach of the trial prescription and quarantine regulations; increasing the risk of dieback spread to the coupe. (15) see Shilen's letter

Visual detection of indicator species deaths is now very difficult.

Aerial photography will not be able to evaluate dieback infections from the air.

The use of chemicals in any form where they are used to "improve" native forests is a contradiction.

186 P.c-12 P.c17-5 P.074-10 2-P.c-2 N.1

16 I seek answers to the following questions :-
1. How many soil/tissue samples were taken at Beaton and especially Coupe 6 in 1984, 1985, 1986.?
17 2. What are the results of these samples ?.
3. What samples are intended to be taken in future ?.
4. In what way does the "poison axe" benefit the forest when used as at Beaton?.
5. Why have Forests Dept. (now CALM) broken their policy regarding re-entry to quarantine areas ?.

Adrian Price, A Price.
Beaton Trial Recorder (1981 to 1984)

M1	2	3	4	5	M1	6	7	8	M1	5A
S 82	A 82	W 82	Sh 82	S 83	S 83	A 83	W 83	Sh 83	S 84	S84

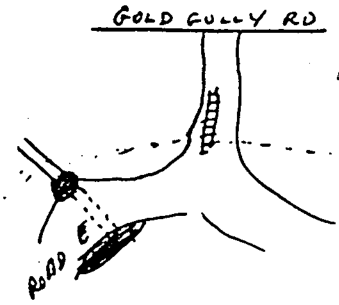
above road verge — upper drain — drain area cut into lines

BEATON LOGGING TRIAL

RECORD OF POSITIVE P.cinnammomi INFECTIONS

SAMPLE No. E7A E7B E7C DATE OF SAMPLE 16-6-83

LOCATION REF. MAP OF AREA



Same as E5, E6, E7

1st samples 3/6/83	-	-	+
29/9/83	-	-	+
7/12/83	-	-	+
16/5/84	+	-	+
25/9/84	+	-	-

ROAD E2 COUPE 6 AUTUMN 83

E6 { E7A LOWER DRAIN
E7B ROAD
E7C UPPER DRAIN }

SPECIES SAMPLED ADENANTHUS

I S D 's

ADENANTHUS

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION 26-5-83

REASONS FOR SAMPLING

1/ HYGIENE ERROR

2/ DEATHS OF INDICATOR SPECIES.

POSSIBLE VECTOR OR CAUSE 4/2/83 ROAD GANG LOADER DUG DRAIN APPROX 8 m BEYOND DIEBACK DEMARCATION

IS INFECTION LIKELY TO HAVE BEEN ~~INTRODUCED~~/SPREAD BY ROADING/~~LOGGING~~ ACTIVITY ? YES, BUT NOT CERTAIN

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

1/ FD ALLOWED GRAVEL TRUCKS TO MOVE FROM ROAD K TO ROAD E WITH A LOWER WASHDOWN ONLY. THE TRUCKS HAD A RESIDUE OF GRAVEL IN THEIR (FROM ROAD K PIT, WHICH WAS AT RISK FROM ROAD K INFECTIONS 21/4/83

2/ INFECTION (SAMPLES E2A, E2C, E2D)

3/ INFECTION (SAMPLE E4) ABOVE THE ROAD JUST BEYOND THIS INFECTION

OTHER REMARKS.

DEATHS WERE EVIDENT JUST OVER 3 MONTHS AFTER THE LOADER DUG THE DRAIN, THIS MAY MEAN THE DISEASE WAS ALREADY PRESENT AT THE SAMPLED AREA BEFORE THE ERROR WAS MADE. COMMENT FROM DWELLINGUP DIEBACK RESEARCH IS THAT Pc IS USUALLY NOT EXPRESSED AS A PLANT DEATH UNTIL MORE THAN 18 MONTHS AFTER INFECTION.

BEATON LOGGING TRIAL

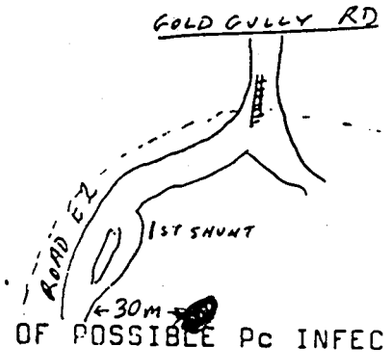
RECORD OF POSITIVE P.cinnammomi INFECTIONS

POSITIVE RESULT KNOWN BEFORE 17/5

SAMPLE No. E4 DATE OF SAMPLE 16-2-83

LOCATION REF. MAP OF AREA

ROAD E2 - COUPE 6 - AUTUMN 83



SPECIES SAMPLED BANKSIA GRANDIS

I S D 's

X. PRESSEI. ADENANTHUS

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION

14-2-83

REASONS FOR SAMPLING

DETECTION OF I.S.D's

POSSIBLE VECTOR OR CAUSE NONE APPARENT

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?. NO, AREA IS MORE THAN 30m UPHILL FROM ANY VEHICLE ACTIVITY.

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

- dressed prior to logging
- excluded from "

see Brandis's letter
of 9/5/83

OTHER REMARKS. STUDY OF 70mm PHOTOGRAPHY REVEALED NO INDICATION OF DISEASE.
AREA ISOLATED PRIOR TO LOGGING.
F.D. INTERPRETER, TONY BRANDIS DOUBTED THE ACCURACY OF THE SAMPLE RESULTS. HE RESAMPLED THE AREA AND AGAIN A POSITIVE RESULT WAS RECORDED.
A GREEN BANKSIA SEEDLING OR SUCKER WAS WITHIN 200mm OF THE BANKSIA SAMPLED

R. - Bunning - Nurses.

1st sampled 15/7/83 −ve

BEATON LOGGING TRIAL

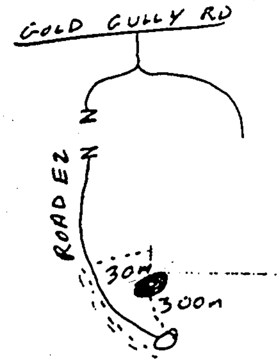
RECORD OF POSITIVE P.cinnammomi INFECTIONS

SAMPLE No. E2D

DATE OF SAMPLE 28 - 4 - 83 +ve

LOCATION REF.

MAP OF AREA



ROAD E2 - COUPE 6 - AUTUMN 83

SPECIES SAMPLED BANKSIA GRANDIS. MACROZAMIA.

I S D 's AS ABOVE

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION 14 - 2 - 83

REASONS FOR SAMPLING

1/ DETECTION OF ISD's FD NOT INTERESTED IN SAMPLING UNTIL - 2/ RESULTS OF SAMPLES E2A E2C WERE POSITIVE.

POSSIBLE VECTOR OR CAUSE NONE APPARENT, OTHER THAN MAPPING ERRO.

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?. NO, UNLIKELY

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

THE AREA HAD BEEN LOGGED MID APRIL 83 BUT DEATHS WERE DETECTED 14/2/83

- one of Prices original sites
- agreed between Price & F.D to sample E2 (drain (4+L) + road surface), and await result. When +ve sample separately lower & upper drain, road surface & 30m into bush (E2D) (where Price had originally seen ISD)

E2D came back +ve

ie d'b there before logging

all up 8ha could have been infected

- currently no ISD ∴ recommend intensive resampling

OTHER REMARKS.

~~THIS~~ AREA IS ABOUT 50m ABOVE THE DIEBACK DEMARCATION LINE AND SO IT SHOULD BE ABOUT 70m ABOVE THE NEAREST INFECTION

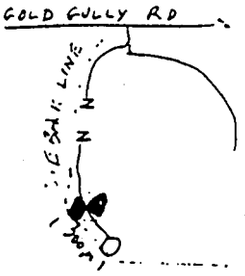
BEATON LOGGING TRIAL

RECORD OF POSITIVE P.cinnammomi INFECTIONS

SAMPLE No. E2A - E2B - E2C DATE OF SAMPLE 16-6-83

LOCATION REF.

MAP OF AREA



ROAD E2 - COUPE 6 - AUTUMN 83

E2A - LOWER DRAIN
E2B - ROAD
E2C - UPPER DRAIN

SPECIES SAMPLED NONE

I S D 's

NONE

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION

REASONS FOR SAMPLING ROUTINE SAMPLE POINT - SELECTED BECAUSE IT IS LOWEST IN PROFILE.

POSSIBLE VECTOR OR CAUSE MAPPING ERROR OR, INFECTION WITHIN CO OR SPREAD BY VEHICLES FROM E7 INFECTION

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?.. YES, BUT COULD HAVE BEEN LATENT DIEBACK

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

ON AT LEAST ONE ISSUE OF FD MAP (1607-12-1) THIS PORTION OF ROAD SHOWN AS BEING IN "INTERPRETED RISK" AREA. THE EDITION OF MA USED WHEN DEMARCATING THE ROAD, DID NOT SHOW THE AREA AS "INTERPRETE

AN INFECTION EXISTS (SAMPLE E2-D) APPROX 30m ABOVE THE ROA WITHIN THE COUPE.

THE INFECTION (SAMPLE E7) COULD HAVE BEEN SPREAD BY ROADING OR

THE INFECTION (SAMPLE E4) BEING ABOVE THE ROAD.

FD ALLOWED GRAVEL TRUCKS TO MOVE FROM ROAD K TO ROAD E WITH A L WASHDOWN ONLY, THE TRUCKS HAD A RESIDUE OF GRAVEL IN THEIR BINS FR ROAD K PIT, WHICH WAS AT RISK FROM ROAD K INFECTIONS. 21/

FD TANKER DROVE BEYOND DIE BACK MARKERS AT RAMP WITHOUT WASHING CONDITIONS WERE WET. 2/5/83

A LOG TRUCK WAS SEEN LEAVING THE RAMP WITH MUD STILL ON ITS WHE 6/

OTHER REMARKS.

QUARANTINE LOGGING TRIAL BEATON

(1) Planning

Planning for this logging trial commenced in May 1980. The following groups have been involved in drawing up the trial specifications: Timber industry representatives Forests Department Dieback Review Group, Northern Region, Southern Region, Research Branch. Inventory & Planning Branch, Nannup Division and Central Region.

(2) Need for Quarantine Logging Trials

Noel Ashcroft's letter of 28/5/80 regarding the Integrated Logging Plan for the Northern Jarrah Forest to Millars, Bunnings, Whittakers and Palmers states that "It is Forests Department policy not to permit re-entry of forest operations into quarantined areas without demonstrating they can operate without further spread of dieback disease". The letter also states that a series of operational trials will be run, that it will be six years before results are available from these trials, and that in the interim, logs will have to be supplied from outside quarantine.

(3) Urgency

As a number of sawmills do not have more than 6 years life outside quarantine we considered that a logging trial should commence in the Central Region as soon as possible. Because of the urgency choice of trial areas was restricted to six quarantine areas photographed for dieback.

(4) Reasons For

Beaton Block was recommended for this logging trial because it would involve a big sawmill, in this case Millars Nannup, an adequate sawlog volume was available to cut, it is on unharnessed catchments (Donnelly and Blackwood), a long way from the Dwellingup trial area and has quite different vegetation types and dieback impact compared to Dwellingup and few illegal entries recorded.

(5) Aims of Trial

To develop practical and hygienic techniques for logging in quarantine areas in the Central Region, using "Dieback free maps" produced by 70mm photography and fieldwork.

(6) Brief Trial Specifications

(i) Quarantine for 3 years +
(ii) Produce "Dieback free maps"
(iii) Demarcate dieback management boundaries.
(iv) Advance burn — Late 1981
(v) Road selection — late 1981
(vi) Roadworks — early 1982

About 26km of roadworks. All roads low in terrain. Specifications vary depending on season of cutting, volume to be cut etc.

(vii) Two years cutting 1982, 1983 - early 1984.

Concurrent cutting of sawlog, SEC poles and marri chiplogs. Chip to be cut in year 2 only, providing that adequate arrangements can be made with W.A.C.A.P. etc.

...2/.

Summary of cutting	1982	1983
Area to be cutover	437ha	348ha
Sawlog to be cut	16,300m3	12,500m3
Marri chip to be cut	0	13,000m3
SEC poles to be cut	approx. 300poles	approx. 200 poles

Note: All of above are estimates, subject to revision.

viii) Regeneration/tops disposal burn
ix) Re-quarantine until 1988.
x) Produce new Dieback free maps 1988.
xi) Evaluate results and report.
xii) Other Details

The best possible dieback hygiene to be applied.
Cutting in four seasons: Summer, Autumn, Winter, Spring.
Coupes in protectable, non-protectable and dieback.
Only jarrah dominant stands to be cut.
Any karri in these coupes to be cut also.
Self draining coupes as in Dwellingup trial.
Cutting by fallers blocks and sub-coupes.
Split phase logging-snigging separated from loading.
Maximum snig distance of 400 metres.
Beaton is in Marri Chip Licence Area so relevant environmental constraints apply.

6) Prescriptions

The Quarantine Logging Trial Plan document includes prescriptions for cutting and regeneration, roadwork, hygiene, logging, Southern Region Industry Control and Dieback terminology available at time of preparation which was 24/6/81.
All prescriptions are subject to revision based on experience gained in the Dwellingup trial and elsewhere.

.....
. HEBERLE,
/2/82
ile 415.2

(3)

Marked (2)

COMMENTS ON MR PRICE'S BEATON TRIAL - HYGIENE FAULTS

Point 1-3 Current local policy at the time was to wash down at the District H.Q. then proceed to the trial area.

Point 4 Jalbarragup is a notoriously dry area and the officer involved would have known this.

was vehicle inspected and clean?

Point 5 occurred without Departmental knowledge. Procedure was stopped as soon as Department became aware of incorrect procedure. This was within one or two days of the initial incident.
lesson - increased Department supervision and training of roading contractors required.

Point 6 current washdown policy at the time was followed by the F.D. vehicle. Departmental officers had no knowledge of Palmers ute entering quarantine without washdown. Did it wash down in town?
These incidents occurred under dry soil conditions.
lesson - as for point 5.

Point 7 F.D. vehicle would have definately followed current practice and washed down at the District H/Q.
Industry vehicles were checked at Nannup, declared safe and allowed to proceed to the trial area (in dry soil conditions).

Point 8 Comments same as points 1-4 above.

Rainfall for the period 6/1/82 to 23/1/82 at Nannup H.Q.

6/1	0.8
7/1-8/1	0.0
9/1	0.5
10/1	0.0
11/1	0.25
12/1-20/1	0.0
21/1	13.5
22/1	40.0
23/1	0.7

Nannup flood stopped all forest operations for approximately 1-2 weeks.

Point 9 fault accepted. However it must be borne in mind that we were caught out by unseasonal wet conditions. Ministerial order to stop all forestry work and attend to flood relief.
lesson - illustrates the importance of adequate operator training and ongoing supervision including weekends.

Point 10 Gates were erected on 26/1 and 29/1 on road A and road H respectively. Inspections by local officers found no evidence of hygiene infringements.
lesson - illustrates the importance of early planning to ensure gates and entry signs constructed as soon as road clearing begins.

Point 11 Prior to this a Departmental heavy duty was used to wash down. Mr Price's point that washdown on ramp should have been used earlier as it would have been more hygienic is accepted, but it must be accepted that the use of ramps was in its infancy at the time. Further, to the best of the Beaton logging officers' memory the ramp was used as soon as it was constructed.

Point 12 operator error, did not follow accepted practice .
lesson - closer supervision and training in disease biology and hygiene.

Point 13 even though this error occurred in dry soil condition with a low probability of infection being introduced, Any repeat must be guarded against.
lesson - better communication required between weekend staff and weekday staff.

Point 14 This type of problem i.e. entry by people on only one occasion (e.g. service people) is likely to reoccur.
lesson - To overcome this, signs clearly stating washdown is required must be erected at every entry point. Similar comments must be added to logging plans and job prescriptions.
Note: Beaton diary shows entry was on 18/3/82 (dry soil conditions) not 17/3/82.

Point 15 This event occurred due to latent infections showing up after mapping. At the time the loader driver had not committed an error.
lesson - Chances of this reoccuring now that landform identification has been introduced are minimal.
- local follow up now required to check what impact has been.

Point 16 At the time accepted practice was followed. With hindsight it would have been prudent to either wash down or walk the machinery through the bush assuming it (the machinery) was clean before entry.
lesson - Immediately following this incident and after discussion, locally, washdown upon entry to any logging coupe was insisted upon.

units could have been clean

Point 17 The chances of infection were considered to be insignificant thus washdown of wheels and lower body was considered adequate. The trucks had left the trial area to carry out minor gravelling on Gold Gully Road in dry soil condition. No change to this practice is recommended.

OK

Point 18 apparently young staff involved. This access had been used previously and only recently blocked off by Mr Price.
lesson - A no entry sign would have ensured to all concerned that a small tree had not simply fallen across the track, rather the track had been deliberately blocked off.

Point 19 F.D. vehicle drove along shunt road up to where it was blocked off then exitted via shunt island - a width of approximately 2 m. Amount of bush put at risk was approximately 40 m^2.
lesson - In principle would have been better for the vehicle not to have left the road.

Page 3 Road H Autumn 82

Point 1 — Error noted - washdown of complete trucks essential. This illustrates a lack of understanding of washdown technique.
lesson - there appears to be a need to appoint within each District, a senior hygiene officer, who would be responsible for all hygiene and training i.e. would cover both Departmental and non Departmental personnel.

Point 2 — at that stage it was accepted practice to wash down once only at the District H.Q. Current practice would be to wash down after leaving each logging coupe and before entering the next coupe. No further change recommended.

if necessary!

Point 3 — discussed with research personnel at the time who indicated the chances of picking up disease at that time would have been very slight.
lesson - In conditions such as those described it would have been better to walk through the bush just above the road to avoid picking up excess mud.
Note - at Mr Price's suggestion excess mud was knocked off boots at this time.

Point 4 — A very minor point, the truck washed down (which was accepted practice) immediately above washdown site (to be prepared) thus fall of water was downhill into the washdown site. Incident occurred under dry soil conditions. Change not recommended.

Point 5 — Trucks were washed down on boundary of dieback and green bush.
lesson - would have been wiser to have washed down 5m passed the dieback demarcation line.

Point 6 — with current practice at the time the men would have considered they were following accepted procedure i.e. washdown was effected. No change to this practice is recommended.
Rainfall for March 1983:
1/3 & 2/3 - Nil 3/3 - 0.5 4/3 - Nil 5/3 - 0.7 6/3 - Nil
lesson - it would have been better to wash down on edge of green bush at road A.

Point 7, 8 — lesson - illustrates the need for better training, supervision and explanatory signs.
Two mistakes were made under dry soil conditions; industry supervisor warned on both occasions.

Road I

Point 1 — a comment only from Mr Price. No action necessary.
All work was done under hygienic conditions.

Point 2 — at the time this incident occurred, local officers had reservations about the technique used.
lesson - In future a trackscavator should be used.
Note - soil and root material from side of creek has been sampled with a negative result.

Point 3 — This point needs to be put into perspective. When road demarcation was carried out, scrub was very high and dieback boundaries were difficult, in fact, sometimes impossible to see. Very shortly after initial road clearing, road alignment was changed and area higher in profile excluded from logging.
Done
lesson - involve interpreters in field demarcation of all dieback and landform boundaries.

Point 4 — lesson - as mentioned earlier as soon as road is cleared a gate with a lock fitted and a sign should be erected at the point of entry.

Point 5 — drain (pipes) had broken up. This incident was dealt with at one of the regular Beaton meetings (see minutes of 15 July 1982 attached).
lesson - good quality drainage with adequate cover essential i.e. do not take short cuts - it is more expensive in the long run.

Point 6 — No comment

Point 7 — Mr Price noting that he had followed correct hygiene practice.

Point 8 — such action is always on as it is impossible to stop such illegal entries.

Road E Autumn 83

Point 1 — The possibility of infection is remote. The gravel transported in the trucks came from a dieback free pit. However, with the value of hindsight, there is a remote possibility that the dozer which pushed the gravel up immediately after forming road K may have carried infected soil.
was dozer clean?
lesson - thus it would have been prudent to wash the dozer down before it entered the pit.

Point 2 — lesson - again illustrates the value of adequate training and supervision.

Point 3 — same comment as road H point 7,8.

Point 4 — The Department is and then was committed to full wash down. Immediately after this incident, a Departmental representative discussed the matter with the industry supervisor to ensure the episode was not repeated.
lesson - refresher training of industry personnel required.

3 points below Mr Price's signature

Point 1 — Research advise that the sooner samples are processed the better as it is possible that if Phytophthora cinnamomi is present in the sample it maybe destroyed by other micro-organisms present in the soil.
If soil samples have to be stored they should be kept cool and moist (using distilled water).

Point 2 accepted practice not followed. Fault occurred due to lack of supervision - industry put road in on a Saturday.
lesson - Departmental officers or adequately trained supervisors must be available after hours to supervise this work.

Point 3 Beaton logging trial officer could not comment on this as he could not recall the incident.
Current practice was not to wash down every trip during dry soil conditions. This has been approved by the dieback research group at Dwellingup.

JLO
398/85 Keene 297

F

P.O. Box 94 154
Nannup 6275

Phone 097 561150

Mr Frank Batini
Dept of Conservation & Land Management.
50 Hayman Ave
Como.

22/7/86

Department of Conservation and Land Management
28 JUL 1986
COMO, W.A.

Dear Frank,

Enclosed, a list of infringements or actions which I considered could increase the risk of introducing or spreading Pc.

During our discussion a few weeks ago, you asked me why I had not provided this information to you earlier; I believe I did not adequately answer your question. I remember passing a copy of the enclosed list to Bunnings, Ron Adams about the time Nannup manager Vic Moore was replaced by Jim Timms in August '83.

While employed by Millars I was asked to record such events; on passing the list to Ron Adams, he said he would handle it as required or words to that effect. I may have made a wrong move by Bunnings in revealling this list to you and Dave Meehan but I believe this information may be used to further reduce the risk of Pc spread. The only people I have now supplied this list to is Ron Adams, Dave Meehan and yourself, ~~and~~ at present, I have no intention of supplying it to anyone else. Dave Meehan spent three or four hours with me last week discussing the list in detail.

Yours sincerely
Adrian Price.

Protection copy on file 8/8/86.

HYGIENE FAULTS - PLACING ROADS/BUSH AT RISK

(2)

BEATON QUARANTINE LOGGING TRIAL

ROAD A Summer 82/84, Winter/Spring 1983

1. A vehicle had been along old formation in summer 81/82 area, possibly a Forest Dept vehicle on fire control; in view of the attitude at the time, it is unlikely this vehicle was washed down after moving off Gold Gully Rd.

2. 6/1/82 Two FD vehicles entered old formation (item 1.) without washing down after moving off Gold Gully Rd. Roads were still wet after previous day.

3. 13/1/82 FD vehicle again entered above formation without washdown. (in bush)

4. 13/1/82 Scottie Larsen told by FD senior officer to take his ute (which had come straight from Jalbarragup die back area) along above formation without washdown.

5. 15/1/82 Palmers ute and fuel tanker trailer supporting the Cat D7 dozer was parked at the junction of winter 83 and summer 83 roads, this is approx .5 km from Gold Gully Rd. Only the dozer was washed down.

6. 18/1/82 Palmers ute driving to the above point each day. FD vehicle drove along all newly dozed summer roads. Palmers service vehicle drove to dozer to fit new hose. None of these vehicles were washed down after leaving Nannup.

7. 19/1/82 Palmers took pipes to summer culvert using a ute, FD vehicle was also there; neither vehicle washed down.

8. 20/1/82 FD vehicle again in summer areas without washdown.

9. 21/1/82 Heavy rain (14 mm at Darradup, appeared to be more at Beaton) At this stage, FD had not established a "stop work" regulation regarding wet weather. Considering these conditions to be a hygiene risk, A.Price was at Beaton at 7am to stop the dozer but the dozer had already moved along the road about 300m. Palmers ute and fuel tank were still at the winter junction and FD were aware of this. Palmers ute almost became bogged as it went through the mud to get back to Gold Gully Rd.

   23/1/82 NANNUP FLOOD. FD raised hygiene standards. From this point on, all vehicles were washed down (to my knowledge).

10. FD installed lockable gates on roads A and H, four weeks after roads were first "open to the public". 2/2/82.

11. 2/3/82 Washdown ramp used for the first time (it had been ready for three weeks), washdowns prior to this were all on bare soil.

12. The snigging machine was washed down on entry to Beaton but did not wash down when entering the coupe. This machine was also driving over service vehicle tracks. 5/3/82

13. 8/3/82 Monday, being unaware that the washdown truck had been used on road H on Saturday; (I had left the truck in the "green area" indicating it was clean on Friday). On Monday the truck was still in "green" so I drove it down road A to the summer pool to refill the tank. It had not been washed down again after going to road H.

14. 17/3/82 FD stores vehicle drove past dieback markers at washdown ramp and then down to where the canvas tank was to be placed, it did not wash down.

ROAD A and K

15. December 82. A loader had scrub rolled along winter 83 coupe near Gold Gully Rd boundary. Although it kept outside the dieback demarcations; the Pc had spread past the demarcation.

16. 12/1/83. Up to this date, loaders searching for gravel had been allowed to enter coupes without a washdown (in dry soil conditions). Now that the loader was operating off roads which had been formed 12 months earlier and used a little, it was considered necessary to washdown each time the loader entered the coupe. Prior to tightening of this restraint, the loader and previously the dozer had entered winter and spring 83 coupes from road K without further washdown. Road K was later discovered to be an infected road, possibly at the time of the dozing and forming operations.

17. 19/1/83. FD allowed gravel trucks to re-enter the trial area with a washdown of wheels and lower bodywork only.

18. 10/6/83. In moist conditions, an FD vehicle had driven across bare soil regarded as dieback suspect (after removing a log blocking off the area). This was at the Road K and A fishtail, the vehicle then travelled into the summer 81/82 area, right u to the first fallers blocks to be logged along an old formatio

19. 15/7/83. FD drove onto first winter 83 shunt past A/K fishtail this shunt was already a positive Pc site and had been closed to traffic. The vehicle then went across the shunt "island" which was muddy, then drove along road K to the next set of pipes. The vehicle entered the coupe for about six metres.

ROAD H AUTUMN 82.

1. 5/1/82 A wet day (8mm at Darradup) puddles on Gold Gully Rd. Palmers D7 dozer was delivered in spotless condition. After passing along old formation through dieback area, the dozer did a sharp right turn burying the tracks deep in the soil. The dozer was washed down by FD heavy duty just inside the green area. The dozer was not moved during the washdown and drove away from the area to push through the whole of road H; mud still adhered to the tracks which had been at the bottom during washdown.

2. Dozer entered bush at various points to look for gravel, without further washdown.

3. 22/1/82 New roads very soggy (47mm of rain in under 48 hours) no vehicles allowed in the area. We walked into autumn area to demarcate autumn/ summer boundary. First we walked through about 100m of dieback road, our boots were sinking quite a depth into the mud. We then went along dieback free track and into the forest.

4. 10/2/82 Timber for washdown ramp delivered alongside washdown ramp site, the truck was washed down at this point (it would have been more hygienic not to have washed down at all). When gravel was carted, this area was regarded as green, trucks and grader moved over this site to the gravel pits without further washdown.

5. 3/3/82 Gravel trucks were washed down in dieback zone on the edge of the road; the area turned to mud and the truck had to be pushed out by the logloader after the truck had been inspected and passed. This truck carried a great deal of mud on it into the green area; this mud was picked up from an area demarcated as dieback affected. FD were officiating all the time; I believe the truck should have been washed down immediately inside the green area.

6. 6/3/82 Saturday - gravel trucks and loader picked up pipes from outside road H and washed down at the junction of Gold Gully Rd and road H : about 60m inside dieback area; trucks and loader then went into road H without further washdown. Washdown truck returned to green area in road A without washdown.

7. 17/3/82 Washdown trailer was taken 12m past the dieback markers for refill and taken back down road H without further washdown.

8. 2/4/82 same as for No.7 (different person).

ROAD I WINTER/SPRING 82.

1. Confusion of dieback markers near winter/spring crossover. Similar problem with markers near Gold Gully Rd. and D road.

2. 22/3/82 Waterhole blasted at winter/spring crossing; a great deal of mud landed on surrounding roads; this creek is regarded as a dieback risk.

3. Originally the winter road went right up alongside the high dieback pocket but this pocket could drain to the road.

4. 16/4/82 lockable gate erected; lock fitted 20/4/82. The dozer started pushing this road 8/2/82; the road was unprotected from unauthorised entry for nine weeks.

5. Road allowed to become rutted (almost to the point of bogging) during log hauling.

6. 29/6/82 noticed a quantity of potatoes had been dumped within the gravelled edge of the road in the green area. Soil in which the potatoes appeared to have grown was still stuck to the potatoes. The log truck tyres were running over the dumped potatoes which were growing and well rooted into the gravel and soil below. It is not known at what stage the potatoes had been deposited there.

7. 6/7/82 Water trailer tanker taken past dieback posts to be filled up with water; I took it round to the ramp entrance and washed it down before returning it to green area. This action avoided risk of infection.

8. 26/7/82 What appeared to be a motor cycle track was found in the bush along old formation off road D.

ROAD E Autumn 83.

1. 21/1/83. FD allowed gravel trucks to move from road K to road E with a lower washdown only, the trucks had residue of gravel in their bins, this had come from the gravel pit on road K which had been placed at risk due to later discovery of a road infection on road K.

2. 4/2/83. Road E2 approx 100m from washdown ramp. Roading crew using a Cat 950 loader pushed a drain approx 9m beyond dieback demarcation. The area between the road and the demarcation showed positive Pc when sampled on 3/6/83.

3. 2/5/83. (overnight rain 11mm) FD filled water tanks in autumn 83 driver drove 9m beyond dieback markers at the ramp without washing down. This section became boggy the next day following 18mm of rain during 2/5/83.

4. A log truck drove in after an inadequate washdown, there was still mud on the wheels. The contractor supervisor had just been complaining to the driver that he was taking too long washing down. 6/5/83.

The above information has been collated to keep in touch with hygiene errors up to now, some of these points may be "splitting hairs"; in the event of dieback spread even these points could be valuable in establishing a possible cause.

Adrian Price

Adrian Price

Beaton Trial Recorder/Supervisor.

(1) — Soil samples collected on 15/7/83 still at FD Nursery on 22/8/83. It is considered that results can be affected by long storage.

(2) — Boundary Rd - believed infected - drains onto Spring 83 logging area. New road pushed through in wet soil conditions on 5/11/83.

(3) 15/12/83 log truck drove into road A without washdown, did not stop to check, drove in on exit road.

HYGIENE FAULTS - PLACING ROADS/BUSH AT RISK

BEATON QUARANTINE LOGGING TRIAL

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13. 8/3/82 Monday, being unaware that the washdown truck had been used on road H on Saturday; (I had left the truck in the "green area" indicating it was clean on Friday). On Monday the truck was still in "green" so I drove it down road A to the summer pool to refill the tank. It had not been washed down again after going to road H.

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ROAD A and K

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ROAD I WINTER/SPRING 82.

1. Confusion of dieback markers near winter/spring crossover. Similar problem with markers near Gold Gully Rd. and D road.

2. 22/3/82 Waterhole blasted at winter/spring crossing; a great deal of mud landed on surrounding roads; this creek is regarded as a dieback risk.

3. Originally the winter road went right up alongside the high dieback pocket but this pocket could drain to the road.

4. 16/4/82 lockable gate erected; lock fitted 20/4/82. The dozer started pushing this road 8/2/82; the road was unprotected from unauthorised entry for nine weeks.

5. Road allowed to become rutted (almost to the point of bogging) during log hauling.

6. 29/6/82 noticed a quantity of potatoes had been dumped within the gravelled edge of the road in the green area. Soil in which the potatoes appeared to have grown was still stuck to the potatoes. The log truck tyres were running over the dumped potatoes which were growing and well rooted into the gravel and soil below. It is not known at what stage the potatoes had been deposited there.

7. 6/7/82 Water trailer tanker taken past dieback posts to be filled up with water; I took it round to the ramp entrance and washed it down before returning it to green area. This action avoided risk of infection.

8. 26/7/82 What appeared to be a motor cycle track was found in the bush along old formation off road D.

ROAD E Autumn 83.

1. 21/1/83. FD allowed gravel trucks to move from road K to road E with a lower washdown only, the trucks had residue of gravel in their bins, this had come from the gravel pit on road K which had been placed at risk due to later discovery of a road infection on road K.

2. 4/2/83. Road E2 approx 100m from washdown ramp. Roading crew using a Cat 950 loader pushed a drain approx 9m beyond dieback demarcation. The area between the road and the demarcation showed positive Pc when sampled on 3/6/83.

3. 2/5/83. (overnight rain 11mm) FD filled water tanks in autumn 83 driver drove 9m beyond dieback markers at the ramp without washing down. This section became boggy the next day following 18mm of rain during 2/5/83.

4. A log truck drove in after an inadequate washdown, there was still mud on the wheels. The contractor supervisor had just been complaining to the driver that he was taking too long washing down. 6/5/83.

The above information has been collated to keep in touch with hygiene errors up to now, some of these points may be "splitting hairs"; in the event of dieback spread even these points could be valuable in establishing a possible cause.

Adrian Price

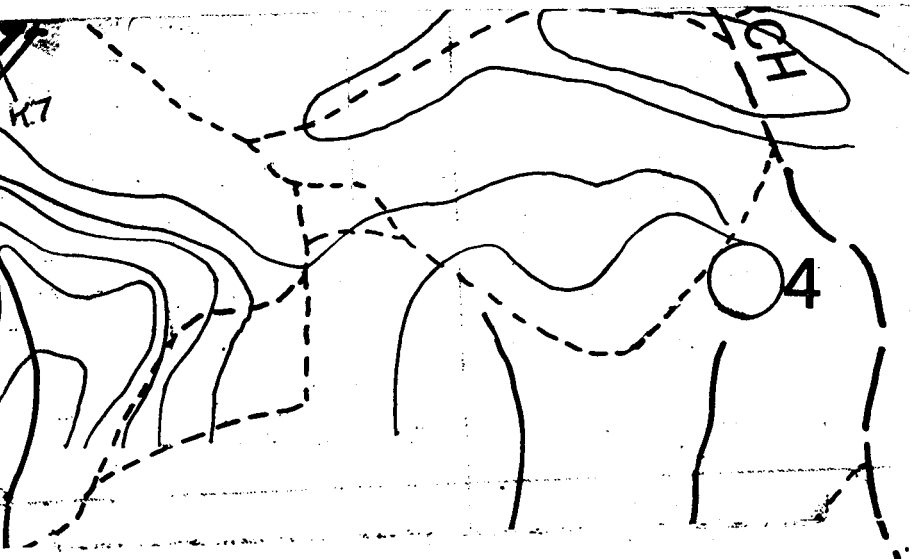
Adrian Price

Beaton Trial Recorder/Supervisor.

Soil samples collected on 15/7/83 still at FD Nannup on 22/8/83. It is considered that results can be affected by long storage.

Boundary Rd - believed infected - drains onto Spring 83 logging area. Haul road pushed through in wet soil conditions, on 5/11/83.

5/12/83 log truck drove into road A without washdown, did not stop to check, drove in on exit road.



•15→NPB854.
•16→NPB861.
•17→NPB862.
•18→NPB863.
•19→NPB7181
GO
•20→NPB812

DIEBACK SAMPLE POINTS •E1.

POSITIVE RESULTS. •E1

PYTOPTHORA ? (NEW STRAIN) [redacted]
PYTOPTHORA CITRICOLA. •E1

BEATON COUPES

SCALE 1:12 500

•1→NPB251→258
•2→NPB211→218
•3→NPB221→228
GP •4→NPB369
•5→NPB3151→3158
•6→NPB361→368
•7→NPB391→398
•8→NPB771→778
•9→NPB7101→7108.
•10→NPB7141→7148

LEGEND

Coupe Boundary
Dieback Infected
Interpreted Risk
Uninterpretable For Dieback
Wash Down Ramp

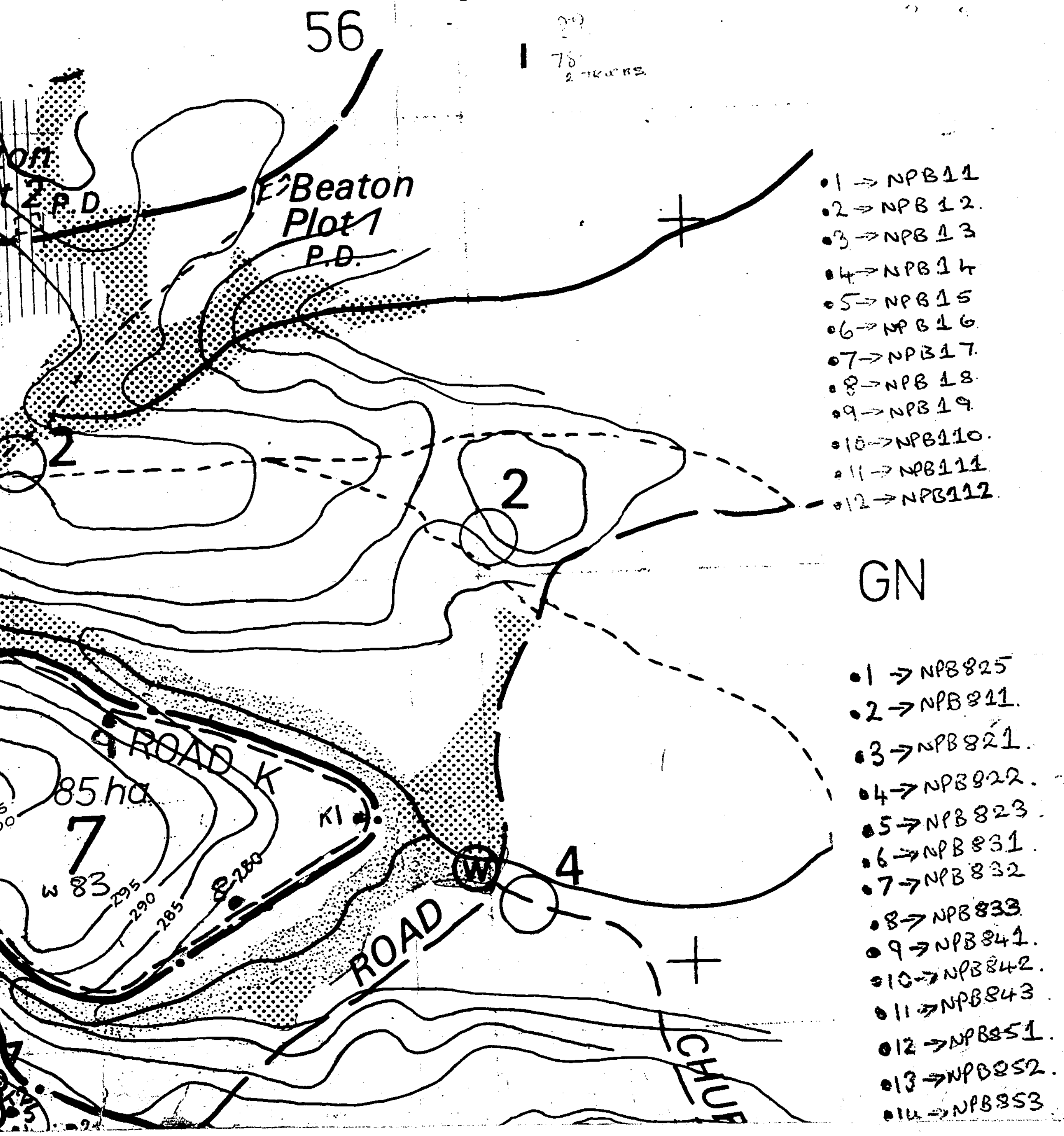
NOTE Contours are form lines only
Revised from 7/5/82 photos

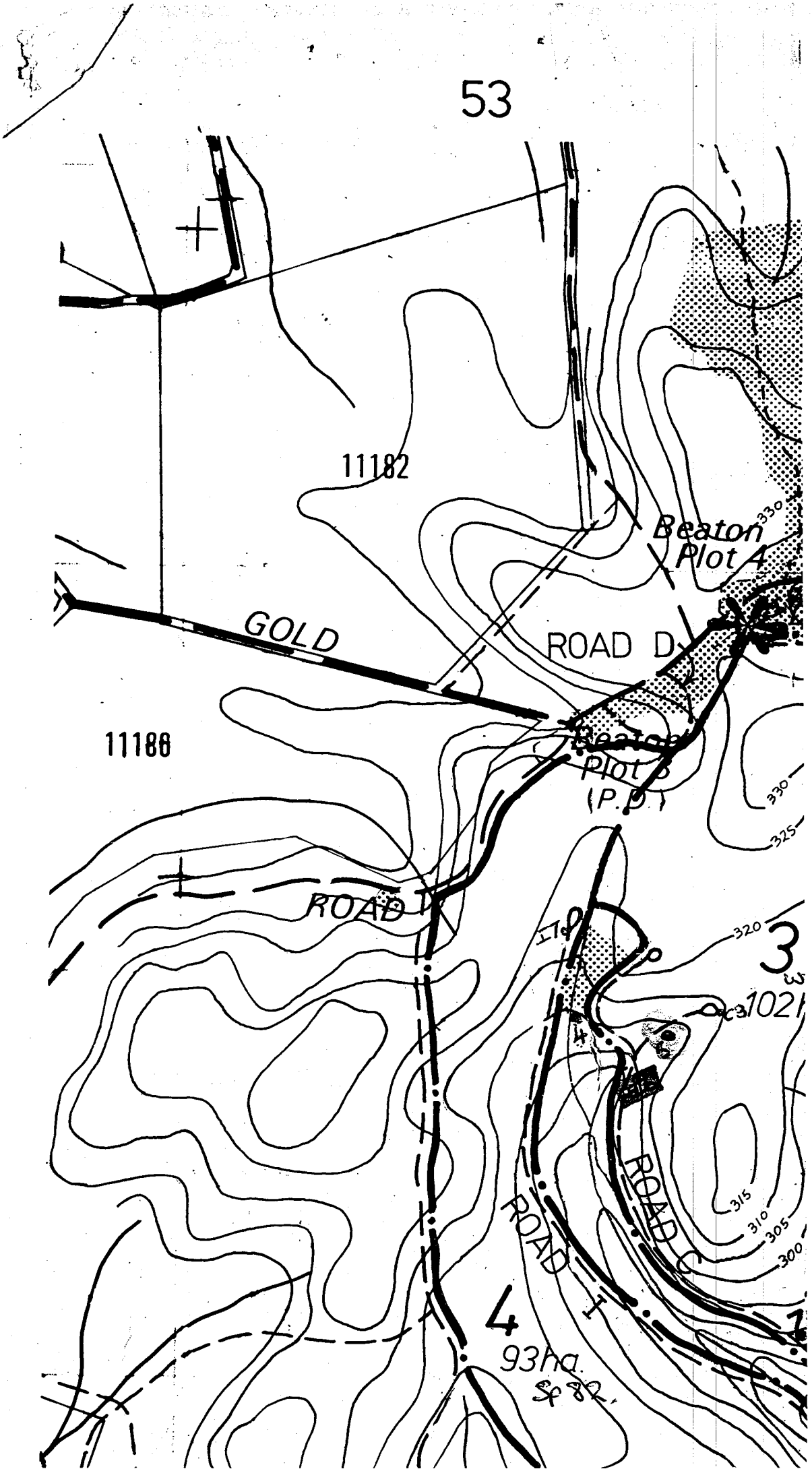
00 400 300 200 100 0 500 1000 metres

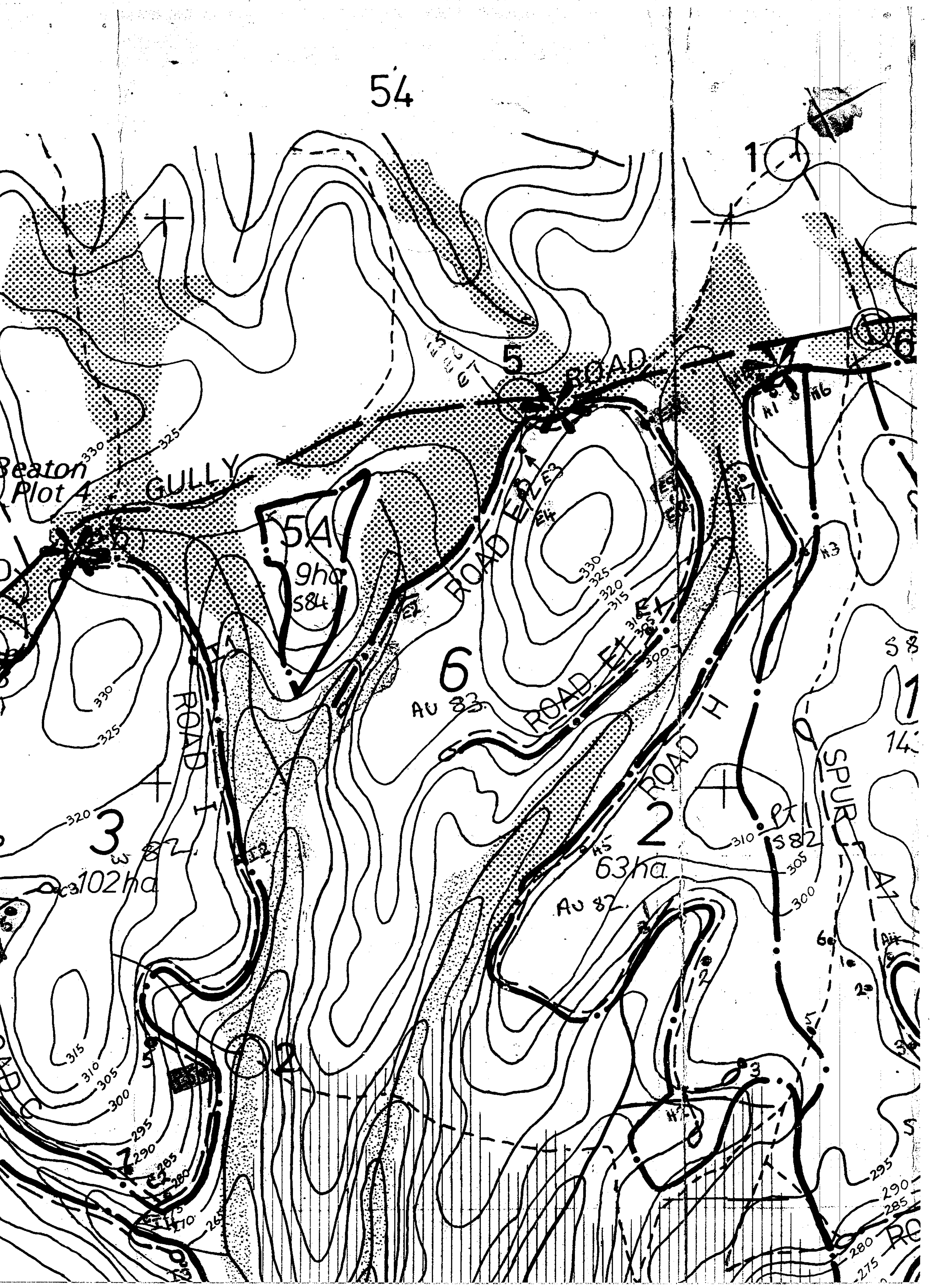
DAT 29·6·82

ED 1807-12-1

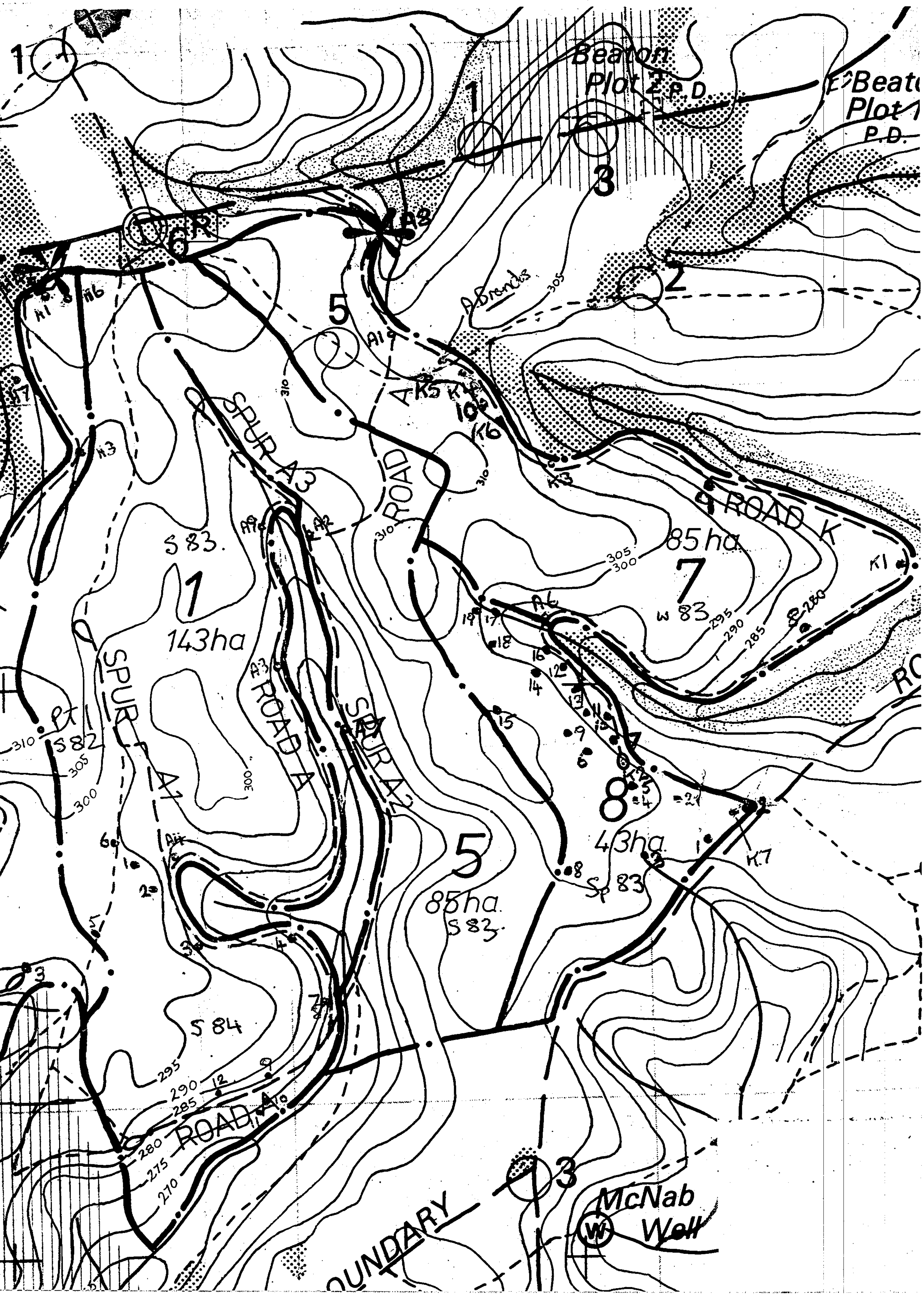
F.D. 1607-12-1


56
Beaton
Plot 1
P.D.
P.D
2
2
4
GN
ROAD K
85 ha
7
w 83
K1
W
ROAD
CHUR
295
290
285
280
•1 → NPB11
•2 → NPB12
•3 → NPB13
•4 → NPB14
•5 → NPB15
•6 → NPB16
•7 → NPB17
•8 → NPB18
•9 → NPB19
•10 → NPB110
•11 → NPB111
•12 → NPB112
•1 → NPB825
•2 → NPB811
•3 → NPB821
•4 → NPB822
•5 → NPB823
•6 → NPB831
•7 → NPB832
•8 → NPB833
•9 → NPB841
•10 → NPB842
•11 → NPB843
•12 → NPB851
•13 → NPB852
•14 → NPB853


53
11182
Beaton
Plot A
GOLD
ROAD D
11186
Beaton
Plot B
(P.D.)
ROAD T
ROAD C
ROAD T
4
93Ha.
330
325
320
315
310
305
300



54
5
ROAD
Beaton
Plot 4
GULLY
54
9ha
S84
ROAD E2
ROAD E1
6
AU 83
ROAD I
3
102ha
ROAD H
2
63ha
AU 82
SPUR
S82
ROAD C


Beaton Plot 2 P.D
Beaton Plot 1 P.D.
A Brends
SPUR A3
ROAD A
ROAD K
SPUR A1
SPUR A
S 83
1
143ha
5
85ha
S 83
7
85 ha
w 83
8
43ha
Sp 83
S 84
S 82
ROAD A
BOUNDARY
McNab Well
K1
K3
K5
K6
K7
A2
A3
A6
A8
A10
A11
A16
A19
310
305
300
295
290
285
280
275
270

DIEBACK ASSESSMENT SHEET
FIELD OBSERVATIONS & I.S.D. TISSUE/SOIL SAMPLE INFORMATION

103

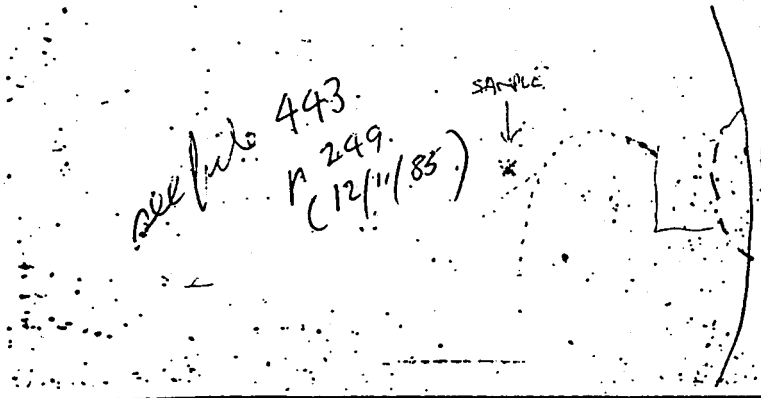
(ORIGINAL: TO BE SENT WITH SAMPLES DUPLICATE: FILE IN DIVISION)

INTERPRETER: F/F M.E. ZWART DIVISION: NANNUP DATE: 29-10-85

FOREST TYPE	JMB x.
UNDERSTOREY DESCRIPTION	B. grandis, sundry bush, M. reidlei, patersonia
ASPECT & LOCATION CLASS	NE aspect mid-slope.
SOIL TYPE	gravelly sandy loam
INDICATOR SPECIES DEATHS	B. grandis ☑ X. preissei ☐ M. reidlei ☐ P. longifolia ☐ E. marginata ☐ OTHER: Patersonia
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES ☑ NO ☐ DESCRIBE: Down hill from an area where a machine has broken in to pick up timber
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH ☑ ½ DEATH ☐ DEATH BY STAGES ☐ OLD AGE ☐ EPICORMICS PRESENT ☐ FIRE ☐ COPPICING ☐ COMMENTS:
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS ☐ DROUGHT PRONE AREA ☐ COMPETITION ☐ WATER GAINING DEPRESSION ☐ CREEK ☐ COMMENTS/OTHERS
POSSIBLE DISEASE VECTOR	NONE APPARENT ☐ ROADSIDE ☐ TRACK ☐ ANIMAL ☐ OTHER: Introduced by machine
OTHER OBSERVATIONS	THIS SAMPLE WAS TAKEN FROM A DISTURBED SITE AREA WAS TOPS DISPOSAL BURNT 9-11-83. AREA WAS FELLED AND SNIGGED DURING APRIL 1983
SPECIES SAMPLED	B GRANDIS SAMPLE NUMBER: NJC9
FIELD INTERPRETATION DECISION.	DIEBACKFREE ☐ SUSPECT* ☐ DIEBACK ☑

SAMPLE LOCATION TIE SKETCH

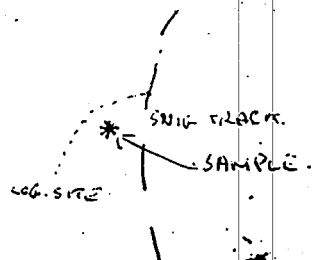
BEATON - COUPE 6.
F/B 8.



See file 443 P 249 (12/11/85)

SAMPLE LOCATION SIX FIGURE GRID REFERENCE.
GN 54 95

lab test 4.2



SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK I

~~FIELD OBSERVATIONS & I.D.D. TISSUE/SOIL SAMPLE INFORMATION~~

(ORIGINAL: TO BE SENT WITH SAMPLES DUPLICATE: FILE IN DIVISION)

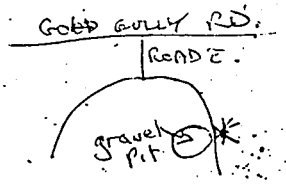
27

INTERPRETER: A/F M.E. ZWART DIVISION: NANNUP DATE: 3/6/93.

FOREST TYPE	
UNDERSTOREY DESCRIPTION	B. grandis; Leuca pogon sp.; Adonanthis; Emu bush P. longifolia
ASPECT & LOCATION CLASS	NE aspect; mid-slope.
SOIL TYPE	Sandy gravel.
INDICATOR SPECIES DEATHS	B. grandis ☐ X. preissei ☐ M. reidlei ☐ P. longifolia ☐ E. marginata ☐ OTHER: .....
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES ☐ NO ☑ DESCRIBE: .....
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH ☐ ½ DEATH ☐ DEATH BY STAGES ☐ OLD AGE ☐ EPICORMICS PRESENT ☐ FIRE ☐ COPPICING ☐ COMMENTS: ..... N/A
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS ☐ DROUGHT PRONE AREA ☐ COMPETITION ☐ WATER GAINING DEPRESSION ☐ CREEK ☐ COMMENTS/OTHERS .....
POSSIBLE DISEASE VECTOR	NONE APPARENT ☑ ROADSIDE ☐? TRACK ☐ ANIMAL ☐ OTHER: .....
OTHER OBSERVATIONS	
SPECIES SAMPLED	Soil SAMPLE NUMBER: NPBE3
FIELD INTERPRETATION DECISION.	DIEBACKFREE ☐ SUSPECT* ☑ DIEBACK ☐

SAMPLE LOCATION TIE SKETCH

Sample both drains and road surface.



SAMPLE LOCATION SIX FIGURE GRID REFERENCE.

GN 54 96

SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK IS INCONCLUSIVE.

(ORIGINAL: TO BE SENT WITH SAMPLES   DUPLICATE: FILE IN DIVISION)

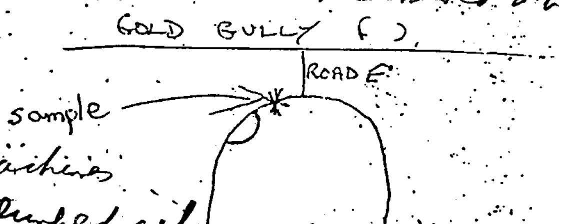
INTERPRETER: A/F M.E. ZWART   DIVISION: NANNUP   DATE: 3/6/83

FOREST TYPE	
UNDERSTOREY DESCRIPTION	X. preissii, ~~[illegible]~~, Emu bush, M. reidlei, Native Pear, Adonanthis, P. longifolia
ASPECT & LOCATION CLASS	W aspect, lower mid slope.
SOIL TYPE	Sandy gravel
INDICATOR SPECIES DEATHS	B. grandis ☐ X. preissei ☑ M. reidlei ☐ P. longifolia ☐ E. marginata ☐ OTHER: Adonanthis
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES ☐ NO ☑ DESCRIBE:
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH ☑ ½ DEATH ☐ DEATH BY STAGES ☐ OLD AGE ☐ EPICORMICS PRESENT ☐ FIRE ☑ COPPICING ☐ COMMENTS:
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS ☐ DROUGHT PRONE AREA ☐ COMPETITION ☐ WATER GAINING DEPRESSION ☑ CREEK ☐ COMMENTS/OTHERS ...
POSSIBLE DISEASE VECTOR. ... THIS DISEASE ...	NONE APPARENT ☐ ROADSIDE ☐? TRACK ☐ ANIMAL ☐ OTHER: possibly natural uphill spread.
OTHER OBSERVATIONS	WHILST CUTTING DRAIN, OPERATOR PASSED OVER D/b demarcation line.
SPECIES SAMPLED	Soil with some ISD roots SAMPLE NUMBER: NPB E5, E6, E7.
FIELD INTERPRETATION DECISION.	DIEBACKFREE ☐ SUSPECT* ☑ DIEBACK ☐

SAMPLE LOCATION TIE SKETCH

SAMPLE LOCATION SIX FIGURE GRID REFERENCE. 6N 54 76

E5 taken from above road. verge up to 6m from drain.
E6 ✓ ✓ road (with upper drain).
E7 ✓ ✓ drain cut 9m into bush. drain area only including 1st mound of dirt
↳ just entered d/b area; done under dry soil condition



+ve
not roading machines had not disturbed site

SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK IS INCONCLUSIVE.

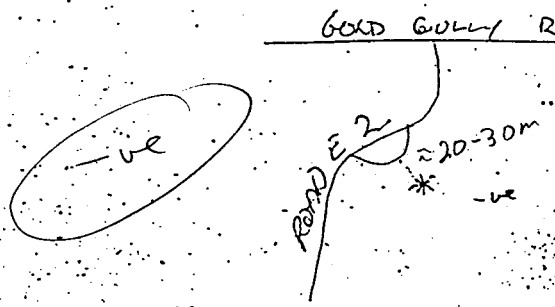
FIELD OBSERVATIONS & I.S.D. TISSUE/SOIL SAMPLE INFORMATION

(ORIGINAL: TO BE SENT WITH SAMPLES DUPLICATE: FILE IN DIVISION)

INTERPRETER: A/F. M.E. ZWART DIVISION: NANNUP DATE: 16-2-83

FOREST TYPE	M70 JmA
UNDERSTOREY DESCRIPTION	B. grandis. Acacia sp., P. longifolia, Leucapogon
ASPECT & LOCATION CLASS	West aspect. Mid-slope
SOIL TYPE	Gravelly sand
INDICATOR SPECIES DEATHS	B. grandis [✓] X. preissei [ ] M. reidlei [ ] P. longifolia [ ] E. marginata [ ] OTHER: .....
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES [ ] NO [✓] DESCRIBE: .....
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH [✓] ½ DEATH [ ] DEATH BY STAGES [ ] OLD AGE [ ] EPICORMICS PRESENT [ ] FIRE [ ] COPPICING [ ] COMMENTS: .....
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS [ ] DROUGHT PRONE AREA [ ] COMPETITION [ ] WATER GAINING DEPRESSION [ ] CREEK [ ] COMMENTS/OTHERS .....
POSSIBLE DISEASE VECTOR	NONE APPARENT [ ] ROADSIDE [ ] TRACK [✓] ANIMAL [ ] OTHER: OLD SNIG TRACK
OTHER OBSERVATIONS	
SPECIES SAMPLED	B. grandis SAMPLE NUMBER: NP B E3
FIELD INTERPRETATION DECISION.	DIEBACKFREE [ ] SUSPECT* [✓] DIEBACK [ ]

SAMPLE LOCATION TIE SKETCH



SAMPLE LOCATION SIX FIGURE GRID REFERENCE.
GN 5477

SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK IS INCONCLUSIVE.

102

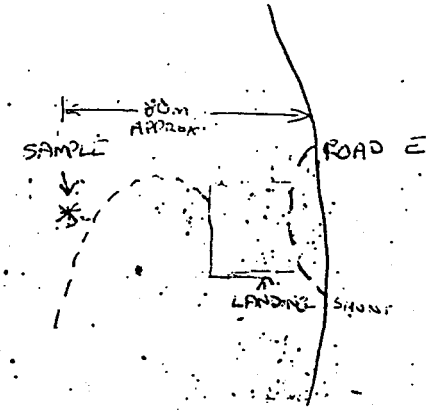
DIEBACK ASSESSMENT SHEET
FIELD OBSERVATIONS & I.S.D. TISSUE/SOIL SAMPLE INFORMATION

(ORIGINAL: TO BE SENT WITH SAMPLES DUPLICATE: FILE IN DIVISION)

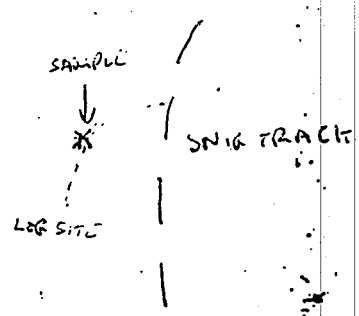
INTERPRETER: A/F M.E. Ward DIVISION: NANNUP DATE: 29-10-85

FOREST TYPE	JMB+.
UNDERSTOREY DESCRIPTION	B. grandis, Amo. bush, M reidlei, petersonia
ASPECT & LOCATION CLASS	N.E aspect mid-slope
SOIL TYPE	gravelly sandy loam
INDICATOR SPECIES DEATHS	B. grandis ☑ X. preissei ☐ M. reidlei ☐ P. longifolia ☐ E. marginata ☐ OTHER: P. intersaepta
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES ☑ NO ☐ DESCRIBE: SEE NPBE9
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH ☑ ½ DEATH ☐ DEATH BY STAGES ☐ OLD AGE ☐ EPICORMICS PRESENT ☐ FIRE ☐ COPPICING ☐ COMMENTS:
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS ☐ DROUGHT PRONE AREA ☐ COMPETITION ☐ WATER GAINING DEPRESSION ☐ CREEK ☐ COMMENTS/OTHERS
POSSIBLE DISEASE VECTOR	NONE APPARENT ☐ ROADSIDE ☐ TRACK ☐ ANIMAL ☐ OTHER: Introduced by machine
OTHER OBSERVATIONS	SEE NPBE9
SPECIES SAMPLED	Petersonia SAMPLE NUMBER: NPBE10
FIELD INTERPRETATION DECISION.	DIEBACKFREE ☐ SUSPECT* ☐ DIEBACK ☐

SAMPLE LOCATION TIE SKETCH Beaton Coupe 6. F/B 8



SAMPLE LOCATION SIX FIGURE GRID REFERENCE.
...GN.54.95...



SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK

DIEBACK ASSESSMENT SHEET
FIELD OBSERVATIONS & I.S.D. TISSUE/SOIL SAMPLE INFORMATION

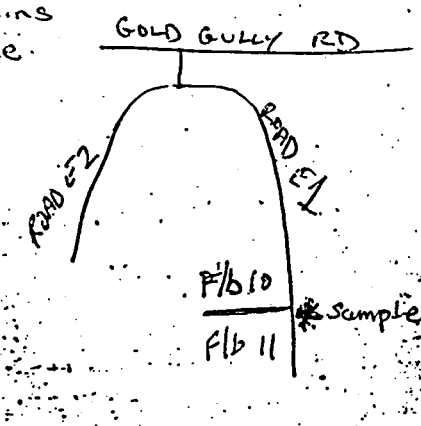
(ORIGINAL: TO BE SENT WITH SAMPLES DUPLICATE: FILE IN DIVISION)

INTERPRETER: A/F M.E. ZWART DIVISION: NANNUP DATE: 18-8-83

FOREST TYPE	JMB+.
UNDERSTOREY DESCRIPTION	B. grandis, Emu bush, B. aquafolia, P. longifolia.
ASPECT & LOCATION CLASS	E aspect lower slope.
SOIL TYPE	Gravel with some sand
INDICATOR SPECIES DEATHS	B. grandis ☐ X. preissei ☐ M. reidlei ☐ P. longifolia ☐ E. marginata ☐ OTHER: ....NIL.....
IS THERE A D'b DEATH PATTERN EVIDENT AMONGST ISD'S ON THIS SITE?	YES ☐ NO ☐ DESCRIBE: .... NIL. .....
WHAT IS THE NATURE OF THE PLANT STRESS OR DEATHS WHICH OCCUR ON THIS SITE?	SUDDEN DEATH ☐ ½ DEATH ☐ DEATH BY STAGES ☐ OLD AGE ☐ EPICORMICS PRESENT ☐ FIRE ☐ COPPICING ☐ COMMENTS: NIL.....
MAJOR SITE FACTORS INFLUENCING PLANT GROWTH ON THIS SITE.	ROCK OUTCROPS ☐ DROUGHT PRONE AREA ☐ COMPETITION ☐ WATER GAINING DEPRESSION ☑ CREEK ☐ COMMENTS/OTHERS ....
POSSIBLE DISEASE VECTOR	NONE APPARENT ☑ ROADSIDE ☐ TRACK ☐ ANIMAL ☐ OTHER: .....
OTHER OBSERVATIONS	
SPECIES SAMPLED	Soil (road). SAMPLE NUMBER: NPRE 1
FIELD INTERPRETATION DECISION.	DIEBACKFREE ☑ SUSPECT* ☐ DIEBACK ☐

SAMPLE LOCATION TIE SKETCH

Sample both drains and road surface.



SAMPLE LOCATION SIX FIGURE GRID REFERENCE.

[redacted]
GN5493

SAMPLE RESULT:

*SUSPECT: AN AREA OF FOREST IN WHICH THE EVIDENCE FOR THE PRESENCE OR ABSENCE OF DIEBACK I

DB10

BEATON LOGGING TRIAL

19/4/86

Coupe 6 Road E1 and Road E2 Autumn 1983 logging.

History of events :-

12- 3-82 Demarcated roads E1 and E2: sampled four sites along proposed roads.

16- 3-82 D7G dozer commenced clearing road. D7 walked off gold gully and thro' green bush

20- 4-82 Grader formed road. F.D. 04 opened up entry from 6.6 road to road E on 18-19/4/82. No hygiene infringement reported

28- 4-82 Road entrance was blocked; public could have used these roads since 16-3-82.

20- 1-83 Cleared area for washdown ramp; ramp transported from Autumn 82 area.

24- 1-83 Gravelling commenced - gravel trucks moved from Road K to Road E. Forest Dept. officer permitted the trucks to enter with a washdown of chassis and tyres; the residue of gravel in the bins was not washed out. Road K was later known to be infected; the truck should have had a total washdown. no need to wash down, research has indicated logging no need to wash down under dry soil conditions.

14-2-83 A. Price detected tree deaths in four areas within the dieback free logging coupe. Took photos of area. not 2 - sampled

Noted that Palmers roading crew had pushed a drain about nine metres beyond dieback demarcated area. The site of this error later showed a positive sample. E5,6,7

16- 2-83 Forests Dept. sampled two sites in coupe; sample E4 approx. 30m above road showed positive. Other deaths were not sampled but sample E2D was sampled on 28- 9-83 and showed positive six months after logging. any need or were other deaths some distance from ?

8 -3-83 Area scrubrolled.

20- 4-83 Log trucks carted logs from the area.

2- 5-83 Forests Dept. filled water tank but driver drove nine metres beyond dieback markers at the ramp. Eleven mm of rain in 24 hrs, roads were muddy.

6- 5-83 Palmers log truck only partially washed down, mud still on wheels; supervisor had earlier comlained to the driver that he was spending too much time washing down. adrian was mills rep

26- 5-83 Indicator species had died near road at the site of the drain error. (refer latter comments of 14-2-83) E2?

22- 8-83 Unauthorised entry on Road E1 beyond gravel pit - firewood collector.

7-11-83 Completed moving of logs, up to now, marri chip logs had been stored in this area.

1984 Tops disposal / regeneration burn. Area to be quarantined until 1988/89.

1985 Poison all marri and most jarrah trees with Roundup.

-/2

M Bunbury att J. Skillen

M Nannup attn D. Meehan

this on 30/6/86

COUPE DESCRIPTION.

Coupe 6 is bouded by Road E1 and Road E2; the roads and the whole of this coup had been interpreted as dieback free a few months before the trial commenced.

The logged area is 62 Ha of jarrah / marri forest with pockets of bullich and W.A.blackbutt.

A washdown ramp 30 metres long, water tanks and pump were situated immediately inside the dieback free area, All vehicles were washed down on entry during moist conditions.

Volume of logs for this area averaged :-

Jarrah sawlogs 52 m^3 per Ha (the highest for the Beaton Trial)

Marri chiplogs 25 m^3 per Ha

TRIAL AIMS. (as recorded in "Interim Report - Beaton Logging Trial" 30/8/83)

1. To test the ability of the timber industry and the Forests Dept. to carry out a rigorous hygiene logging operation in declared Disease Risk Area in Nanmup without introducing or spreading dieback.

2. To develop practical and hygiene techniques for logging in declared Disease Risk Areas in the Central Region using "dieback free" maps produced by the aerial photography group.

3. To develop a practical operational system of dieback terminology and mapping.

COMMENTS REGARDING AIMS.

1. On 28/5/80, Noel Ashcroft wrote regarding the Integrated Logging Plan for the Northern Jarrah Forest. " It is Forests Dept. policy not to permit re-entry of forest operations into quarantined areas without demonstrating they can operate without further spread of dieback disease ".

2. In reply to my letter of 2/1/85 to Dr.Syd Shea, Executive Director of Dept. of Conservation and Land Management; in which I sought explanation for the logging by the industry in Disease Risk Areas; some years prior to the results of this, and other trials. Dr.Shea wrote on 6/5/85 "Back in 1974 when the Government decided to establish Quarantine areas in State

Evaluation of these logging trials will be made in 1988/89; despite the policy stated by Noel Ashcroft, logging on a non-trial basis has been carried out in Disease Risk Areas for a few years now but mainly on a small scale. In mid 198[illegible] full scale logging commenced in Ellis Creek, reputed to be amoung the best jarrah forest on Earth. To date, none of the trials have been able to demonstra we can log without introducing or spreading dieback. The reverse appears to be the trend at present.

INTERIM ASSESSMENT (this report is regarding Coupe 6 only)

Coupe 6 is less than 10% of the Beaton Trial area; until May 1984, only ten sample sites exist in this area (from my observation, this has not been increased to this day). Two of the three samples within the logging area showed a positive sample of Phytophthora cinnamomi (commonly known as jarrah dieback). Only two of the road and drain samples are negative. These samples alone, indicate we have not achieved the aim of not introducing or spreading dieback. Between the first shunt and the trial entrance on Road E2, several indicator species have recently died, in an area up to 15 metres above the road. This is a definate extension of sampling made by myself and F.D.Officer M.Zwart in May 1984. Species recently died were :- patersonia, banksia grandis, adenanthos, macrozamia palm, xanthorrhoea preissii; all were in close proximity to each other.

At this early stage of the trial, it is difficult to accurately assess the reasons for the dieback appearing in areas believed to be free of dieback.

Among many possible theories; the undermentioned ideas should be considered :-

1. Interpretation; this was mainly a visual assessing of indicator species; firstly by use of aerial photographs and then by a ground crew. The failing in this method is that when a plant is dying from Pc, we have no idea how long the plant has been fighting the disease; it may be months or several years. For this reason, visual interpretation can be very inaccurate, yet it is still practised and often without the more positive aid of widespread soil sampling. We have no positive way of detecting where the disease is, or where it is not without strict sampling of soil and plant tissue. This involves sampling on a grid square of about every 20 metres and to a depth of up to two metres; this is economically out of the question and in itself

eful tool, it must be supported by —

fringement of hygiene regulations; I kept records of all events I considered placed the area at risk of infection. More infringements were made against the Forests Dept. than against the combined industry. For the purpose of the trial, I regarded errors, ignorance and deliberate violation of regulations as having equal value regarding forest hygiene. Coupe 6 has the benefit of the least infringements. This is one of the reasons I have chosen this coupe as an example of the most up to date techniques and strictest monitoring of any forest area in this region. Yet, human errors still occur as has already been shown in the History of Events on page 1.

. A mapping error was made in this area; the first maps we received were the maps we used to demarcate the road. A later edition of the map indicated we have placed the final 200 metres of Road E2 in a dieback suspect zone. At the time of demarcating this road, indicator species all appeared healthy.

ONCLUSIONS - DIEBACK TRIAL

Disturbingly few Soil/tissue samples have been taken in Coupe 6 and the rest of the trial areas. For one sample to show positive in Coupe 6 is bad news, we have seven out of ten samples showing positive. Worse events occured in the other coupes, I have full details if required. To me it is clear that we have not yet perfected a technique to enable us to log an area without considerable risk increasing dieback spread. From these early results, it is not only irresponsible but criminal to log dieback free areas, knowing it is at great risk of being permanently affected by dieback.

The only reason these areas are being logged is because good jarrah cannot be found anywhere else; continued mis-management and overcutting has now revealled the truth and will soon have a dramatic affect on the workforce in the hardwood industry.

SILVICULTURE IN DIEBACK TRIAL (this project is known as "Jarrah Stand Improvement")

We have a conflict in that this trial area is being used for more than one trial, all marri trees and most jarrah trees have been poisoned using an axe and the cut being filled with the herbicide Roundup. Many banksia trees have also been poisoned; Banksias are the main indicator species of dieback and may be visible with aerial photography. It is most important that we can identify

the cause of death in these banksias when the area is to be aerially assessed. The cause of death cannot be determined from the air; foot patrols will be needed. From my experience, this will not happen; if it did, it would be by persons with a minimum of training for the task.

When the industry logged this coupe in 1983, the logging contractor supervisor who was a man showing great concern for the forest; he considered that we had left far too few standing trees and that many of those remaining would blow over due to their sudden lack of protection. Some of these trees have since blown over. Due to the poisoning programme, the few trees that are left are on their own. In 40 - 50 years time, the industry could have logged the trees that have now been poisoned. The earliest the industry could return to that area would be 120 - 150 years time; that is, provided dieback has not taken its toll.

Not only should we be alarmed about the so called silviculture project but the area they have chosen to do it. According to the trial prescription, "Regeneration/tops disposal burn to be carried out before Dec.1984 the area to be protected from fire for ten years or until regeneration will survive a fire." "Area to be re-quarantined from March 84 until March or May 1988" "Aerial dieback photography, re-mapping, evaluate results and report March 1989."

I regard the poisoning programme as a breach of the trial prescription and quarantine regulations; increasing the risk of dieback spread to the coupe.

Visual detection of indicator species deaths is now very difficult.

Aerial photography will not be able to evaluate dieback infections from the air.

The use of chemicals in any form where they are used to "improve" native forests is a contradiction.

I seek answers to the following questions :-

1. How many soil/tissue samples were taken at Beaton and especially Coupe 6 in 1984, 1985, 1986.?
2. What are the results of these samples ?.
3. What samples are intended to be taken in future ?.
4. In what way does the "poison axe" benefit the forest when used as at Beaton?.
5. Why have Forests Dept. (now CALM) broken their policy regarding re-entry to quarantine areas ?.

Adrian Price,
Beaton Trial Recorder (1981 to 1984)

BEATON LOGGING TRIAL

RECORD OF POSITIVE P.cinnammomi INFECTIONS

SAMPLE No. E7A E7B E7C DATE OF SAMPLE 16-6-83

LOCATION REF.

ROAD E2 COUPE 6 AUTUMN '83

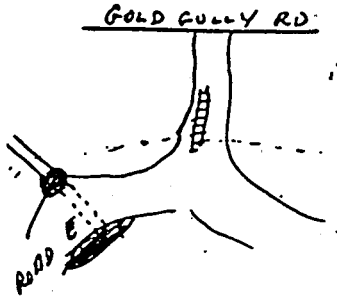
E6 { E7A LOWER DRAIN
E7B ROAD
E7C UPPER DRAIN

SPECIES SAMPLED ADENANTHUS

I S D 's

ADENANTHUS

MAP OF AREA



above road verge | drain | drain cut in

Name as	E5	E6	E7
1st sample 3/6/83	-	-	+
29/9/83	-	-	+
7/12/83	-	-	+
16/5/84	+	-	+
25/9/84	+	-	-

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION 26-5-83

REASONS FOR SAMPLING

1/ HYGIENE ERROR

2/ DEATHS OF INDICATOR SPECIES.

POSSIBLE VECTOR OR CAUSE 4/2/83 ROADGANG LOADER DUG DRAIN APPROX 8m BEYOND DIEBACK DEMARCATION

IS INFECTION LIKELY TO HAVE BEEN ~~INTRODUCED~~/SPREAD BY ROADING/~~LOGGING~~ ACTIVITY ?. YES, BUT NOT CERTAIN

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

1/ FD ALLOWED GRAVEL TRUCKS TO MOVE FROM ROAD K TO ROAD E WITH A LOWER WASHDOWN ONLY. THE TRUCKS HAD A RESIDUE OF GRAVEL IN THEIR FROM ROAD K PIT, WHICH WAS AT RISK FROM ROAD K INFECTIONS 21/8/83

2/ INFECTION (SAMPLES E2A, E2C, E2D)

3/ INFECTION (SAMPLE E4) ABOVE THE ROAD JUST BEYOND THIS INFECTION

OTHER REMARKS.

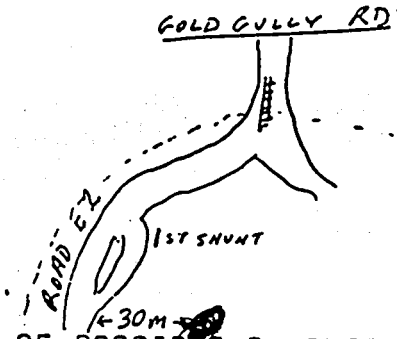
DEATHS WERE EVIDENT JUST OVER 3 MONTHS AFTER THE LOADER DUG THE DRAIN, THIS MAY MEAN THE DISEASE WAS ALREADY PRESENT AT THE SAMPLED AREA BEFORE THE ERROR WAS MADE. COMMENT FROM DWELLINGUP DIE BACK RESEARCH IS THAT Pc IS USUALLY NOT EXPRESSED AS A-PLANT DEATH UNTIL MORE THAN 18 MONTHS AFTER INFECTION.

SAMPLE NO. E4 DATE OF SAMPLE 16-2-83

LOCATION REF.

ROAD E2 - COUPE 6 - AUTUMN 83

MAP OF AREA



SPECIES SAMPLED BANKSIA GRANDIS

I S D 's

X. PRESSEI. ADENANTHUS.

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION 14-2-83

REASONS FOR SAMPLING- DETECTION OF I.S.D.s

POSSIBLE VECTOR OR CAUSE NONE APPARENT

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?. NO., AREA IS MORE THAN 30m UPHILL FROM ANY VEHICLE ACTIVITY.

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

- discovered prior to logging
- excluded from "

see Brandis's letter of 9/5/83

OTHER REMARKS. STUDY OF 70mm PHOTOGRAPHY REVEALLED NO INDICATION OF DISEASE.
AREA ISOLATED PRIOR TO LOGGING.
F.D. INTERPRETER, TONY BRANDIS DOUBTED THE ACCURACY OF THE SAMPLE RESULTS. HE RESAMPLED THE AREA AND AGAIN A POSITIVE RESULT WAS RECORDED.
A GREEN BANKSIA SEEDLING OR SUCKER WAS WITHIN 200mm OF THE BANKSIA SAMPLED

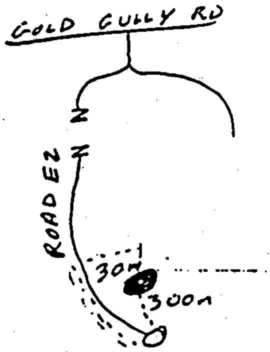
RECORD OF POSITIVE P.cinnammomi INFECTIONS

SAMPLE No. E2D

DATE OF SAMPLE 28-9-83 +ve

LOCATION REF.

MAP OF AREA



ROAD E2 - COUPE 6 - AUTUMN 83

SPECIES SAMPLED BANKSIA GRANDIS. MACROZAMIA.

I S D 's AS ABOVE

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION 14-2-83

REASONS FOR SAMPLING

1/ DETECTION OF ISD's FD NOT INTERESTED IN SAMPLING UNTIL - 2/ RESULTS OF SAMPLES E2A E2C WERE POSITIVE.

POSSIBLE VECTOR OR CAUSE NONE APPARENT, OTHER THAN MAPPING ERRO.

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?. NO, UNLIKELY

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

THE AREA HAD BEEN LOGGED MID APRIL 83 BUT DEATHS WERE DETECTED 14/2/83

- one of Prices original sites
- agreed between Price + FD to sample E2 (drain (4+L) + road surface) and await result. When +ve sample separately lower part of drain, road surface + 30m into bush (where Price had originally [illegible]) (E2D)

[illegible]

ie d/l [illegible] before logging

[illegible]

- [illegible] [illegible] intensive [illegible]

OTHER REMARKS.

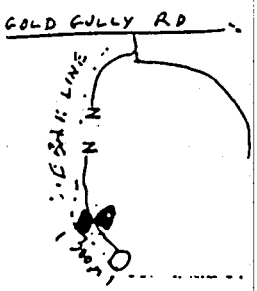
THIS AREA IS ABOUT 50m ABOVE THE DIEBACK DEMARCATION LINE AND SO IT SHOULD BE ABOUT 70m ABOVE THE NEAREST INFECTION

E2B

SAMPLE No. E2A - E2C DATE OF SAMPLE 16-6-83

LOCATION REF.

MAP OF AREA



ROAD E2 - COUPE 6 - AUTUMN 83

E2A - LOWER DRAIN
E2B - ROAD
E2C - UPPER DRAIN

SPECIES SAMPLED NONE

I S D 's

NONE

DATE OF FIRST SIGNS OR AWARENESS OF POSSIBLE Pc INFECTION

REASONS FOR SAMPLING ROUTINE SAMPLE POINT - SELECTED BECAUSE IT IS LOWEST IN PROFILE.

POSSIBLE VECTOR OR CAUSE MAPPING ERROR OR, INFECTION WITHIN CO OR SPREAD BY VEHICLES FROM E7 INFECTION

IS INFECTION LIKELY TO HAVE BEEN INTRODUCED/SPREAD BY ROADING/LOGGING ACTIVITY ?. YES, BUT COULD HAVE BEEN LATENT DIEBACK

LIST ANY OTHER ACTIVITIES THAT MAY HAVE PLACED THIS AREA AT RISK.

ON AT LEAST ONE ISSUE OF FD MAP (1607-12-1) THIS PORTION OF ROAD SHOWN AS BEING IN "INTERPRETED RISK" AREA. THE EDITION OF MA USED WHEN DEMARCATING THE ROAD, DID NOT SHOW THE AREA AS "INTERPRETE

AN INFECTION EXISTS (SAMPLE E2-D) APPROX 30m ABOVE THE ROA WITHIN THE COUPE.

THE INFECTION (SAMPLE E7) COULD HAVE BEEN SPREAD BY ROADING OR THE INFECTION (SAMPLE E4) BEING ABOVE THE ROAD.

FD ALLOWED GRAVEL TRUCKS TO MOVE FROM ROAD K TO ROAD E WITH A L WASHDOWN ONLY, THE TRUCKS HAD A RESIDUE OF GRAVEL IN THEIR BINS FR ROAD K PIT, WHICH WAS AT RISK FROM ROAD K INFECTIONS. 21/

FD TANKER DROVE BEYOND DIE BACK MARKERS AT RAMP WITHOUT WASHING CONDITIONS WERE WET. 2/5/83

A LOG TRUCK WAS SEEN LEAVING THE RAMP WITH MUD STILL ON ITS WHE 6/

OTHER REMARKS.

QUARANTINE LOGGING TRIAL BEATON

(1) Planning

Planning for this logging trial commenced in May 1980. The following groups have been involved in drawing up the trial specifications: Timber industry representatives Forests Department Dieback Review Group, Northern Region, Southern Region, Research Branch. Inventory & Planning Branch, Nannup Division and Central Region.

(2) Need for Quarantine Logging Trials

Noel Ashcroft's letter of 28/5/80 regarding the Integrated Logging Plan for the Northern Jarrah Forest to Millars, Bunnings, Whittakers and Palmers states that "It is Forests Department policy not to permit re-entry of forest operations into quarantined areas without demonstrating they can operate without further spread of dieback disease". The letter also states that a series of operational trials will be run, that it will be six years before results are available from these trials, and that in the interim, logs will have to be supplied from outside quarantine.

(3) Urgency

As a number of sawmills do not have more than 6 years life outside quarantine we considered that a logging trial should commence in the Central Region as soon as possible. Because of the urgency choice of trial areas was restricted to six quarantine areas photographed for dieback.

(4) Reasons For

Beaton Block was recommended for this logging trial because it would involve a big sawmill, in this case Millars Nannup, an adequate sawlog volume was available to cut, it is on unharnessed catchments (Donnelly and Blackwood), a long way from the Dwellingup trial area and has quite different vegetation types and dieback impact compared to Dwellingup and few illegal entries recorded.

(5) Aims of Trial

To develop practical and hygienic techniques for logging in quarantine areas in the Central Region, using "Dieback free maps" produced by 70mm photography and fieldwork.

(6) Brief Trial Specifications

(i) Quarantine for 3 years +
(ii) Produce "Dieback free maps"
(iii) Demarcate dieback management boundaries.
(iv) Advance burn — Late 1981
(v) Road selection — late 1981
(vi) Roadworks — early 1982

About 26km of roadworks. All roads low in terrain. Specifications vary depending on season of cutting, volume to be cut etc.

(vii) Two years cutting 1982, 1983 - early 1984.

Concurrent cutting of sawlog, SEC poles and marri chiplogs. Chip to be cut in year 2 only, providing that adequate arrangements can be made with W.A.C.A.P. etc.

...2/,...

ary of cutting	1982	[illegible]
to be cutover	437ha	348ha
og. to be cut	16,300m3	12,500m3
i chip to be cut	0	13,000m3
poles to be cut	approx. 300poles	approx. 200 poles

e: All of above are estimates, subject to revision.

1) Regeneration/tops disposal burn
Re-quarantine until 1988.
Produce new Dieback free maps 1988.
Evaluate results and report.

) Other Details

The best possible dieback hygiene to be applied.
Cutting in four seasons: Summer, Autumn, Winter, Spring.
Coupes in protectable, non-protectable and dieback.
Only jarrah dominant stands to be cut.
Any karri in these coupes to be cut also.
Self draining coupes as in Dwellingup trial.
Cutting by fallers blocks and sub-coupes.
Split phase logging-snigging separated from loading.
Maximum snig distance of 400 metres.
Beaton is in Marri Chip Licence Area so relevant environmental constraints apply.

5) Prescriptions

The Quarantine Logging Trial Plan document includes prescriptions for cutting and regeneration, roadwork, hygiene, logging, Southern Region Industry Control and Dieback terminology available at time of preparation which was 24/6/81.
All prescriptions are subject to revision based on experience gained in the Dwellingup trial and elsewhere.

.....
HEBERLE,
/2/82
ile 415.2

M. Wright.

SAMPLING RECORDS SHEET.

CELL NUMBER:-

RUN NUMBER:- BEATON **PAGE NUMBER:-** 2. **APPENDIX 7**

FRAME & SAMPLE No.	DATE	LN	SY	FIELD INT.	DATE REC.	DATE OF PROCESSING 1ST	2ND	SUBS	RESULT PLATE	CUP
	COULD THE RESULTS PLEASE BE									
	SENT TO MIKE WRIGHT AT									
	BUNBURY									
BEATON COUPE 4										
LINE 54 60mE 10mS	14:10 86	L	I	NPC	28/10/86				NPC	NPC
LINE 52 260mE	11.10.	L	I	SUS-P.C	"				NPC	NPC
BEATON COUPE 2										
LINE 11 100mE	15.10.	M	I	SUS	"				NPC	NPC
LINE 48 0mW 20mS	"	M	I	NPC	"				NPC	S/C
BEATON COUPE 3										
SAMPLE 15 WASHDOWN RAMP.	15.10.	M	M	P.C.	"				PC	PC

1. LN - LOCATION CLASS
2. SY - SYMPTOM CLASS
3. FIELD INT - FIELD INTERPRETATION BY INTERPRETER

SAMPLING RECORDS SHEET. M. Wright

CELL NUMBER:- BEATON

RUN NUMBER:-

PAGE NUMBER:- 1

APPENDIX 7

FRAME & SAMPLE No.	DATE	LN	SY	FIELD INT.	DATE REC.	DATE OF PROCESSING 1ST	2ND	SUBS	RESULT PLATE	CUP
	COULD THE RESULTS PLEASE BE									
	SENT TO MIKE WRIGHT AT BUNBURY.									
BEATON COUPE 3										
LINE 22 270m E	23.9	M	I	SUS-Pc	13/10/86				NPC NPC	NPC NPC
LINE 25 500m W	26.9	M	C	P.C					NPC NPC	NPC NPC
LINE 40 280m E	26.9	M	C	NPC					NPC NPC	NPC NPC
BEATON COUPE 4										
LINE 3 370m E	30.9	L	I	Pc	*	S/C = subcultured			NPC NPC	NPC NPC
LINE 5 0m W	30.9	L	M	Pc					PC	PC
LINE 11 290m E	30.9	M	M	ARM.					NPC NPC	NPC NPC
LINE 11 1400m E 20m S	30.9	L	I	P.C					NPC NPC	NPC s/c
LINE 20 230m W 10m N	1.10	M	I	SUS-NPC					NPC NPC	NPC s/c
LINE 25 160m W	1.10	M	M	ARM					NPC NPC	NPC NPC
LINE 32 200m E	1.10	L	M	P.C.					PC	PC
Forest Grove Rd										
LEEUWIN NATURALISTE	7/10	L	C	P.C.					PC	PC

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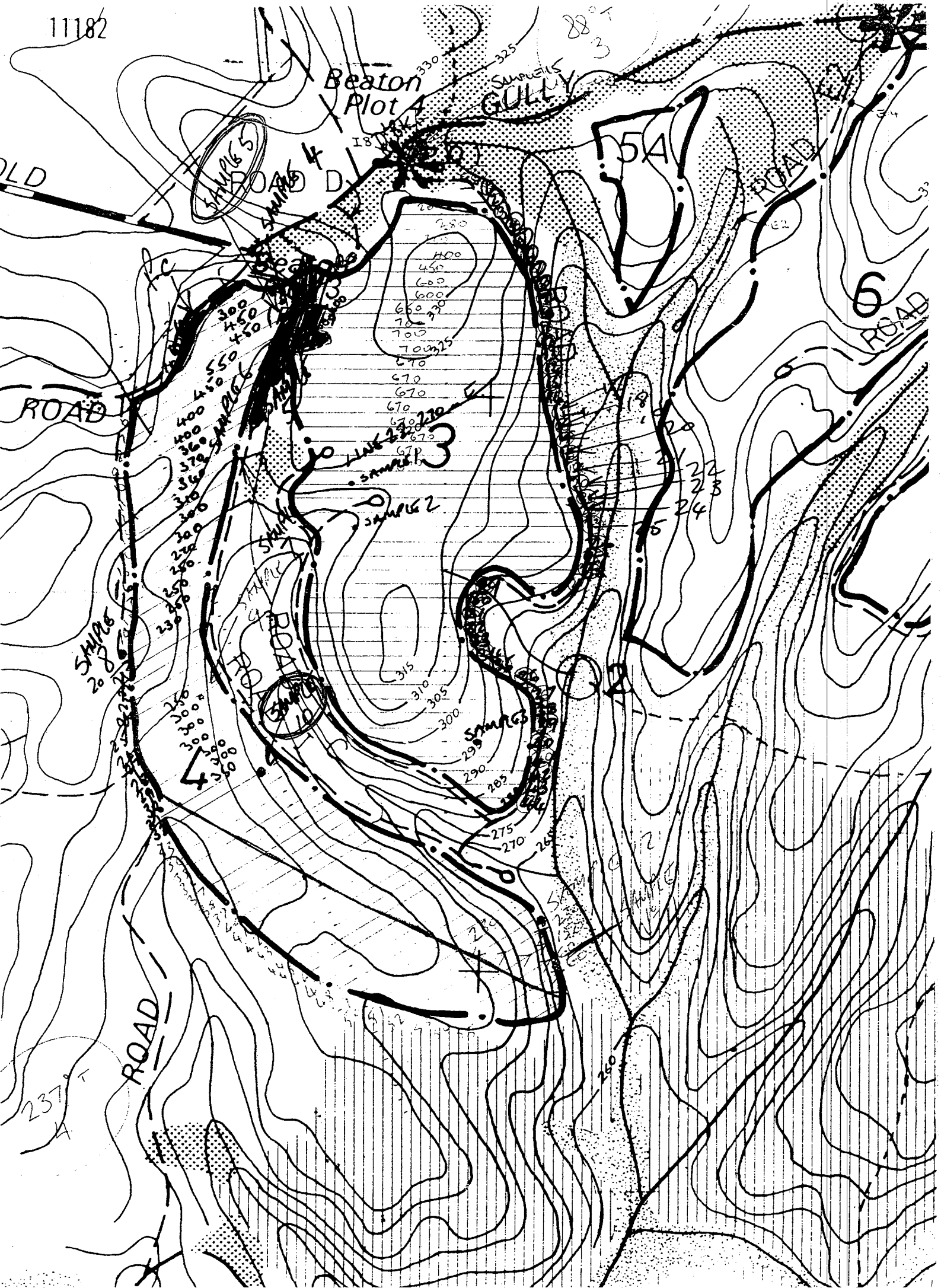
OPERATOR:
DATE: 30/10/86 3.20


11182
Beaton
Plot A
GULLY
ROAD
SAMPLES
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