Proposed Waikato Regional Plan Change 1 –
Waikato and Waipā River Catchments Hearing

Statement of Evidence from Lindsay Fung, Jacqui Wellington and William Oliver on behalf of the Waikato and Waipa Branches of the New Zealand Deer Farmers' Association

3 May 2019

Contact for service:

Lindsay Fung
Deer Industry New Zealand
P O Box 10702
Wellington 6143

Phone: 04 471 6115
Email: Lindsay.Fung@deernz.org

Introductions

Lindsay Fung

1. My name is Lindsay Fung.
2. I hold a Doctor of Philosophy from the University of Canterbury (Forestry Genetics and Tree Physiology).
3. I am the Environmental Stewardship Manager for Deer Industry New Zealand (DINZ), a levy-funded industry-good organisation representing New Zealand deer farmers and venison processors

Jacqui Wellington

1. My name is Jacqui Wellington.
2. I farm deer near Te Awamutu in the Waikato catchment.
3. My husband Brian has been deer farming on our property since 1978 and I joined him in 1987. Brian passed away in 2017 and I now farm the property in conjunction with my son and four staff. Our farm was for three years part of the Deer Industry Farm Focus project.
4. I am a Justice of the Peace. I am involved and hold positions with the local branch of Rural Women New Zealand and with the Te Awamutu Scout Group. I am also involved with a number of other community organisations and at present I have the role of Returning Officer for the Wharepapa South School Board of Trustee elections. Brian has been a past chairman of the New Zealand Deer Farmers Association – Waipa Branch and was a long-time member of the New Zealand Deerstalkers Association holding positions at various times.

William Oliver

5. My name is William Oliver.
6. Together with my wife, Karen, I own and operate two deer farms near Te Kuiti in the Waipā catchment. I am the neighbour of Murray Templeton whose farm we will be using as a case study for this submission.
7. In 2013 our farm was awarded the Silver Fern Farms supplier of the year “Plate to Pasture”. I have served as an observer on the Silver Fern Farms Board and am currently a director of Deer Industry New Zealand, Te Awamutu Vet Association and Great Oak Forests and a Trustee of the Waitomo Energy Services Customer Trust.

Scope of Statement

8. This statement will cover:

    - The Waikato and Waipa Branches of the New Zealand Deer Farmers' Association (NZDFA-Waikato & Waipa) support for the use of Farm Environment Plans (FEPs) as the primary tool for farmers to identify and implement mitigation measures to reduce contaminant losses to water bodies. This statement is in support of the positions of Beef + Lamb New Zealand (B + LNZ) and Farmers 4 Positive Change (F4PC).

    - Comments on the Section 42a Hearing Report with regards to stock exclusion are also provided.

    - Brief further commentary on the inappropriate use of the Nitrogen Reference Point for low input farms.

    - Two deer farms in the Waipā catchment as case studies for farming to good management practices compared with the requirements specified in the proposed Plan Change 1 (PC1).

    - Deer industry initiatives in environmental stewardship and the opportunity for collaboration with Waikato Regional Council (with reference to regional plan implementation activities in Canterbury and Southland).

Farm Environment Plans

9. We note that Farm Environment Plans (FEPs) have been supported by many parties but clarification of the content and detail of FEPs is still required. FEPs are required by other regional councils for the same purposes as that being proposed in PC1: Bay of Plenty (for Lake Rotorua), Gisborne District (for intensive farms), Hawkes Bay (for Tukituki), Environment Canterbury and Environment Southland.

10. It is also noted that the council intends to run a workshop on providing more clarity on the content of FEPs. NZDFA-Waikato & Waipa have not been included in the communications from council on this matter but consider that the deer industry could provide useful input into this process.

11. An example "template" of a Canterbury deer farm FEP is appended to this statement – farmer personal details have been removed. This FEP was developed according to requirements in the Environment Canterbury Land and Water Regional Plan, Plan Change 5.

12. The farmer in association with the NZDFA and supported by DINZ, hosted a field day in February this year for ECan approved independent auditors to conduct a mock audit of the farm. The FEP prepared for this farm was considered to be a very useful template by the auditors for other drystock farms. It is now being disseminated to deer farming groups as an example to help other deer farmers complete their own FEP.

13. NZDFA-Waikato & Waipa remain concerned that the proposed PC1 requirements for the FEP are prescriptive and "inputs" based rather than outcome-focused and based on on-site risk assessment and prioritising of these risks. The most prescriptive and in our view, counter-productive requirement, is stock exclusion. We have submitted extensively on this issue and remain concerned that the proposed requirements and subsequent revisions in the Section 42A Report will result in financially unaffordable requirements for deer farmers, poor environmental outcomes and compromised animal welfare. The two case study farms we present later will provide commentary on these concerns. We consider that a well-developed (and implemented) FEP can achieve similar or better water quality outcomes then blind adherence to the stock exclusion requirements in PC1.

14. We re-iterate our support for FEPs and for the content of these FEPs to reflect prioritised actions that address the likely environmental risks for each farm.

Stock Exclusion Requirements

15. We refer the hearing panel back to our original submission on stock exclusion and note that the authors of the Section 42A report acknowledge the financial challenge of deer fencing but appear to discount this along with animal behaviour and effectiveness of alternative good management practices so that the recommended time-frames, slope thresholds and stock crossing frequency remain unrealistic for many deer farmers.

16. With respect to stock crossing we partially support the tracked changes suggestion for Schedule C (page 51):

> 3. ~~Livestock~~ Cattle, horses, deer and pigs[123] must not ~~be permitted to~~[124] enter onto or pass across the bed of the water body, except when using a livestock crossing structure [OPTION TO ADD or when they are being supervised and actively driven across a water body in one continuous movement provided no more than one crossing per week occurs].

17. However the frequency of crossing ("*no more than one crossing per week*") is impractical for deer farming. If deer are being moved to the deer shed for Tb testing, weighing/drenching, velvet removal etc., they will generally be returned to their paddock. For velvet removal in particular, small groups of stags are herded to the shed – there may be three (return) trips each week between November and December.

18. NZDFA-Waikato & Waipa note that the Proposed Southland Water and Land Plan, 4 April 2018 (Decisions Version) better reflects deer movements and likely level of impacts on water quality:

> **Rule 70 – Stock exclusion from waterbodies**
> …(c) The disturbance of the bed of a river (excluding ephemeral rivers where stock access is permitted under Rule 20(aa)) or modified watercourse for the purposes of moving stock including cattle, deer, pigs or sheep (but excluding dairy cattle on a dairy platform or on land used for dairy support) is a permitted activity ***provided the stock are being supervised and are actively driven across the water body in one continuous movement***

19. Our observation of deer in waterways is that they do not behave the same way as a dairy cow; namely that they do not increase rates of defecation or urination or seek the water out to stand in (unless there are high temperatures and a lack of shade). Other than for drinking, deer do not stand for long periods in water.

20. A 2010 report for Environment Waikato (*Faecal Contamination of Rural Waikato Waterways. Sources, Survival, Transport and Mitigation Opportunities. A review for Environment Waikato*) provides some alternative findings for direct deposition of *Escherichia coli* (as a proxy for effluent) in waterways:

    - "Dairy cows defecated 50 times more per metre of stream crossing than they did elsewhere on the raceway." (page 5)

    - "When dairy cattle can freely access water, they defecate at a higher rate than when on land, and this is more pronounced at herd crossing points. However, beef cattle freely accessing water have not been found to defecate at a more frequent rate in water than on the paddock." (page 5)

    - "In catchments where deer wallows were not connected to streams, *E. coli* levels were similar to other dry stock pastoral systems." (page 30)

21. Wallowing which is the highest environmental risk from deer does not occur in flowing water: Exclusion from a water way may not have any impact on water quality, while ensuring any wallows that are created do not connect with a water way will be highly effective.

22. In addition to the issues raised in the original submission, NZDFA-Waikato & Waipa note that stock exclusion is generally agreed as a preferred approach and is most applicable and justified in intensive farming systems. Nationally it is our observation that deer farms appear to be similar in intensity (stocking rates) to sheep and beef farms:

    - South Island high country stations can have stocking rates under 5 stock units per hectare.

    - Hill country farms tend to have stocking rates between 9-12 stock units per hectare. Some hard hill country farms in the Waikato may even be as low as 5 stock units per hectare.

    - “Intensive” deer velvet farms, typically on flat or gentle land have stocking rates between 17-19 stock units per hectare

23. By way of contrast, milking platforms might range from 18 to 28 stock units per hectare.

24. Stock exclusion requirements for lighter stocked deer farms, coupled with the high cost of permanent fencing at $20-25 per metre (and potentially non-recognition of how different livestock species and stock classes impact on water bodies) could dis-incentivise deer farming and incentivise the use of heavier stock classes such as dairy grazing.

25. One further note particular to deer farming: Few stock movements are preferred to reduce stress on deer and deer crossing water ways jump rather than wade so that time physically in the water and on the stream bed is minimised.

26. We seriously question the effectiveness of the stock exclusion requirements and our case study farms will show the alternative measures that deer farmers can and do take to ensure that there is minimal impact of deer on both the waterways on farm and the water quality leaving the farm.

Nitrogen Reference Point

27. NZDFA-Waikato & Waipa question how the Nitrogen Reference Point will assist low input, hill country farms achieve good water quality outcomes. We defer to Beef + Lamb New Zealand (B+LNZ) and Farmers 4 Positive Change who will provide more evidence on this topic but not that deer farming will face the same challenges as sheep and beef farms.

28. For deer farms the high cost of fencing for stock exclusion could result in farmers de-stocking deer and then being "forced" to favour sheep or lower stocked beef cattle or dairy grazing due to the cap imposed by the Nitrogen Reference Point.

29. Three Waikato deer farms have been included in a B+LNZ study for estimating nitrogen loss to water. Loss rates and stocking rates are as follows:

	Farm 1	**Farm 2**	**Farm 3**
N loss to water (kg N/ha/yr)	18	18	27
Stock Units per hectare	11	13	7.4

30. These loss rates are higher than we initially expected, although the volcanic soils on these farms do have high loss rates.

31. Currently deer farming has high returns for venison and velvet and deer have different seasonal demands on pasture so offer an alternative and often complementary land use to sheep or cattle. Removal of deer as a land use and income stream from the farm and region would unlikely result in an improvement in water quality and may be counter-productive (not all land will be suitable for sheep and use of heavier livestock will create more risk of soil erosion).

Wellington Farms Ltd

32. Thank you for allowing me to introduce my deer farm and outline how the deer are managed in ways that I think result in low impact on water quality leaving the farm.

33. A little bit about the farm – It is 719 hectares in total (645 effective grazing hectares, with the balance in pines, native bush and ponds) and supports 4000 deer of varying stock classes,

producing venison and velvet as well as 500 sheep and 660 dairy grazers. The overall stocking rate is 19 stock units per hectare.

34. The land is rolling to steep and the predominant soil is Mairoa Ash (free draining but erosion prone). We have reasonable rainfall (about 1500 mm) but it is summer-dry. Elevation is between 75 and 240 m. The farm is in a priority 2 catchment of the Waipā about 20 km SE of Te Awamutu.

35. We have not had an OVERSEER estimation of our nitrogen loss rate but we consider that this will be at a lower rate as, while we have a relatively high stocking rate we do not do any cropping, irrigation or apply high amounts of fertiliser. Furthermore, we have a large number of wetlands, sediment ponds and even a two-stage sediment pond on our deer shed. Our main issue is more likely to be soil loss to waterways and phosphorus associated with soil. *E. coli* may also be an issue which is managed through attention to animal behaviours and good livestock management.

36. Here is an example of one of our paddocks that is typical of much of the hill slopes on this farm. This waterway flows during the winter and there are many such waterways on the hill sides: Fencing them off would result in large retired areas and very small, inefficient patches for grazing. This paddock is not heavily stocked – it does not produce enough feed to allow that, but there is obviously an environmental risk from soil, dung and urine being channelled down these waterways.

37. Here is our mitigation at the bottom of the paddock. This retired area allows the runoff to filter through vegetation and disperse and settled before it reaches the main stream exiting the property. This retired area allows us to utilise the paddock for growing our livestock while not compromising on water quality in the main waterways.

38. Here is another view of a hillside paddock. Fencing off the waterways shown in red would result in impractical grazing areas. If you look at the top half of the hillside you will see the deer – the stocking rate is low reflecting the needs of the animals and the carrying capacity of the land.

39. Moving further up the farm this photo shows natural deer behaviour. When they are not feeding, deer spend much of their time on high ground – not in the valleys and gullies where waterways are located.

40. Here is a view of the farm topography. The question I would ask the panel and the council planners is “where would you put in deer fences?”. Fencing on the flats is easy (therefore quicker and cheaper) and logical as stocking rates are higher than the hill paddocks so the environmental risk is greater. Fencing on the slopes in the foreground does not make sense from an animal husbandry or environmental risk perspective, and certainly not from a financial cost-benefit perspective. Again there is an alternative mitigation option at the bottom of this catchment in the form of riparian plantings and a constructed wetland. Here is the rest of the catchment to give you an idea of the expense and effort involved if fencing was to be required.

41. Applying this to the farm as a whole you can see the number of permanent and season al waterways on the farm. We have about a quarter of our waterways fenced off and will continue to fence where it makes sense and we are confident that an improved environmental outcome will result. This does come at a cost - water reticulation and putting in troughs is around $470 per trough plus alkathene hosing at $319 per 100 m.

42. There are other costs as well. The cover of the Deer Industry's Environmental Code of practice features one of our retired gullies. Here is a close up photo of a part of it that is in some need of maintenance. If we let the weeds smother the current vegetation we would lose the filtering effect from the grassy cover, rendering the riparian strip less effective.

43. One feature of deer behaviour that planners seem to be fixated with is wallowing – a natural activity more frequent at various times of the year (such as during the roar or following winter). These will have high environmental impacts if they are connected to waterways but it is unpredictable where deer will form wallows. Although there are two universal observations:

    - Deer do not wallow in stony soil/stream beds
    - Deer do not wallow in flowing water

44. Where wallows are quite removed from waterways they have little or no impact on water quality – AgResearch estimated that most contaminants could be reduced by over 80 % if wallows were disconnected.[1]

45. Here is another good management practice we use to maintain grassy cover and reduce soil erosion. Sheep only graze our raceways – where large numbers of deer are moved between paddocks and to the deer shed. Sheep are also used to graze riparian strips and keep weed cover down where possible.

46. We do not winter graze or crop, but we do feed the deer silage. Good management practice for this activity includes having a concrete pad to reduce mud and prevent any leachate from seeping into the ground, plus a large forestry block by the side for deer to spread out in after feeding. Other winter practices include regular shifting of stock so that paddocks do not become muddy and grass cover is reduced and any feeding out is done on good pasture so that pugging is minimised and as much feed and pasture is utilised.

47. It is hard for regulators to understand that farming within environmental limits is not a predictable and fixed set of circumstances and that we can always prescribe actions in advance of an event. It is more about identifying appropriate activities or practices that minimise likely risks. In our production system we direct drill any seed for pasture renovation which minimises soil disturbance, but this might not be needed in other land or soil types or where irrigation is used. Similarly while effluent from deer sheds is very minimal compared with a milking shed that is used daily for much of the year, we have

[1] R. W. McDowell (2008) Water quality of a stream recently fenced-off from deer, New Zealand Journal of Agricultural Research, 51:3, 291-298, DOI: 10.1080/00288230809510460

reduced the risk of effluent entering the waterway even further with a simple two stage effluent pond that handles the small amount generated at velvet removal times.

48. Wellington Farms won the 2012 Deer Industry premier environmental award which was judged by representatives from the industry, Landcare Trust, Fish and Game and regional councils. We like to think that the award recognised the application of risk assessment, matching livestock classes with the land's capabilities and affordable works phased in over time and prioritised according to risk. We would welcome a similar approach by Plan Change 1 and note that a Farm Environment Plan that addresses the outcomes rather than prescribes inflexible rules would achieve this.

Templeton Farms Ltd

49. The next farm is a smaller farm in the Waipā Catchment (priority 2) about 12 km east of Te Kuiti but faces very similar environmental issues. Murray Templeton, the farmer is unable to attend the hearings today so I and Murray's neighbour, William Oliver, will describe the farm operation and the approach Murray takes in reducing environmental impacts from his farmed deer.

50. The farm is 326 hectares of which about 300 is effective (and includes areas of bush and tree cover). From this map of the farm you can see the many waterways that run through the property. As with Wellington Farms, the predominant soil is Mairoa Ash – light and free draining. Annual rainfall is about 1200 mm and elevation is between 350 – 450 m.

51. This photo shows some of the range of topography on the farm. The farm has a focus on venison with some velvet production, about 655 deer, 150 dairy heifers and 450 breeding ewes. The stocking rate is 12 stock units per hectare – quite a typical stocking rate for hill country farms producing venison, lamb or beef. Please note the many gullies that have waterways draining into the main stream that exits the farm and flows into the Mangaokewa River and then the Waipā River at Otorohanga. Later we will provide results from stream health monitoring on the farm.

52. On some of the steeper faces there are space-planted poplars for soil conservation - this is an ongoing activity which the farmer estimates may take up to 15 years to complete as budget and priorities allow. However it is not a cheap activity – a pole costs around $5 but ensuring there is adequate protection from deer costs around $40 per tree.

53. This farm was included in the Federated Farmers report on Farm Environment Plans with the estimated costs for undertaking actions identified in a FEP as follows:

9,000 metres of deer fencing flat paddocks along waterways	$180,000
Reticulate water of remaining 15% of farm	$12,000
Contouring and subsurface drainage of flat paddocks	$70,000
Install whisper wires on all deer fences	$10,000
Metal sites in every paddock for PKE trailer	$10,000
Crown hill race and install cut out drains	$25,000
Fill in existing deer wallows connected to waterways and provide artificial wallows	$12,000

Fence off and plant erosion or erosion prone areas	$35,000
Riparian plant stream bank erosion	$1,500
Total	**$355,500**

Space-planted poplars are not an activity identified in the costs above. The farmer notes that the costs are likely to be conservative, e.g. "Crown hill race and install cut out drains" has been done at a cost of $55,000. This has greatly reduced sediment runoff from the tracks and erosion from channelling on the tracks.

54. Here is an example of where the main stream on the lower ground has been fenced-off. About 80-90 % of the lower stream has been fenced off and the water generally runs clear. The farmer thinks that water quality has probably improved (at least in terms of visual clarity) over time as developed areas have settled and have good grass cover. An additional contributing factor is likely the reduction in winter cropping on the farm.

55. As with most low input hill country farms the biggest environmental risk is not nitrogen loss to waterways, but sediment from soil erosion and associated phosphorus. The farm was modelled in OVERSEER for 2015-16 and had an estimated nitrogen loss to water of 18 kg N ha^{-1} $year^{-1}$.

56. Moving further up the farm, one area of risk is deer pacing around fence lines when under stress. This in turn creates tracks that channel soil and phosphorus downhill, potentially reaching waterways. Use of hot wires can reduce the severity of fence pacing and prevent tracks forming. This is a management practice that many deer farmers employ. Other practices are the use of electric wands, filled tyres or metalling the fence line.

57. At the top of the hill here is a paddock of hinds that have recently been separated from their weaned fawns. This is a high stress time and fence pacing has occurred, but in this case it is well away from waterways and the hinds will soon settle allowing the pace line to grass over. In this case the impact is transitory and minor.

58. Despite the use of good management practices or implementation of well-meaning rules or policies, there can be unintended consequences. Fence pacing has occurred which in itself may not have had a large impact on the waterway at the bottom of the slope. However the road immediately above this site exacerbates erosion by diverting water down the fence line causing increased scouring of the ground. Here the use of tyres prevents further pacing allowing the erosion scar to grass over in time.

59. Moving back down to the flatter land one of the main waterways has been fenced off, however soon after, this wallow was formed. At the moment it is not connected to the stream, but this may become an issue in heavy rainfall events or if the wallow increases in area. Creating an alternative wallow further back from the stream and filling in this wallow with rocks is one potential solution.

60. As with the previous farm, there are many small waterways in the numerous gullies feeding into the main stream. We think that it is impractical to fence these off to exclude deer (or cattle) – the resulting paddocks would be small and not useful to manage deer. Constantly moving deer between paddocks will create more stress and reduce growth rates meaning

that the deer are retained on the farm for longer periods before being sent to slaughter. And on this farm it can be even more difficult on the gentler ground

61. Here the waterways are marked in red. The logical fencing approach would be to retire the whole paddock rather than fence the waterways. This may in fact not be needed as further downstream from this site Waikato Regional Council has conducted a stream health assessment with very encouraging results.

62. Close to where the water exits the farm, the regional council has conducted two assessments of stream health using the Macroinvertebrate Community Index score and surveying fish species. The last assessment was in early 2018 (summer) and provided very good results – the MCI score was well above the average for the 60 sites that were assessed across the region and is not too dissimilar to a score typically seen under native forest.

63. The farmer notes that during times of very high rainfall the stream floods and overtops the culverts. Fences along the waterway have been damaged or broken and this is an ongoing maintenance cost that the farmer is unwilling to increase due to rules that require more exclusion of deer from waterways but where there is high levels of doubt about the improvement (if any) in water quality.

64. We refer back to the costs for this farm as described in the Federated Farmers report - $355,500 to comply with the proposed Plan Change 1 Farm Environment Plan requirements. Of these the first three activities (fencing, reticulation and contouring and draining) would be as a direct result of ensuring deer are excluded from waterways and total $262,000. This in our view is an exorbitant and unnecessary cost that would do little to improve on the current water quality in and exiting from the farm.

65. The remainder of the costs could conceivably be incorporated into a programme of environmental works alongside the other good management practices that are in current use. Not only would this approach be more affordable, it would also allow targeting resources to the areas of highest priority/environmental risk.

Deer Industry Initiatives

66. At the time of the submission the industry was developing an environmental management code of practice, designed to be compatible with a FEP and aligned with the Beef + Lamb New Zealand (B+LNZ) Land and Environment Plan toolkit. The code of practice was officially launched in May 2018 and industry leaders have called for all farmers to have a FEP that uses the code by 2020.

67. Additional information has been developed through i) the industry – government partnership programme “Passion to Profit” (P2P) in the form of fact sheets and, ii) fifteen videos developed by Landcare Trust on sustainable deer farming practices. A more detailed list of industry activities on environmental stewardship is provided in the foreword of the code of practice, which was provided to the hearing panel at Block 1. A soft copy of the Code of Practice is provided to the hearing panel on a USB card.

68. The industry continues to support B+LNZ environment planning workshops and is also providing resources (funding, facilitators and consultants) for deer farmers to establish environment "practice change" groups across the country following the successful P2P Advance Party model that facilitates farmer-to-farmer support and critical review.

69. NZDFA local branches are also working with supportive councils to implement plans – independent auditors for Environment Canterbury are provided with training visits to deer farms to view environmental issues and deer farming practices. As noted earlier, in February this year auditors undertook a mock audit of a deer farm and results were later discussed with local deer farmers. This event was reported in the April/May 2019 edition of the industry magazine "*Deer Industry News*" (page 22, hard copies provided).

70. Similarly, Environment Southland assisted NZDFA-Southland to run a FEP workshop for all Aparima catchment deer farmers in March 2019 and partners closely with the industry's Southland Environment Advance Party. Another industry environment group in Te Anau has just been formed in May. The industry will continue to support further groups and collaborate with Environment Southland to implement good environmental management practices on Southland deer farms.

71. NZDFA- Waikato & Waipa extend a similar intent to collaborate with the Waikato Regional Council to ensure deer farmers complete and action their FEPs and minimise their environmental impacts from farming activities, and wish to see policies and rules in PC1 that encourage such collaboration.

72. NZDFA- Waikato & Waipa thank the commissioners for hearing our concerns.

Appendix – Environment Canterbury FEP example (deer farm)

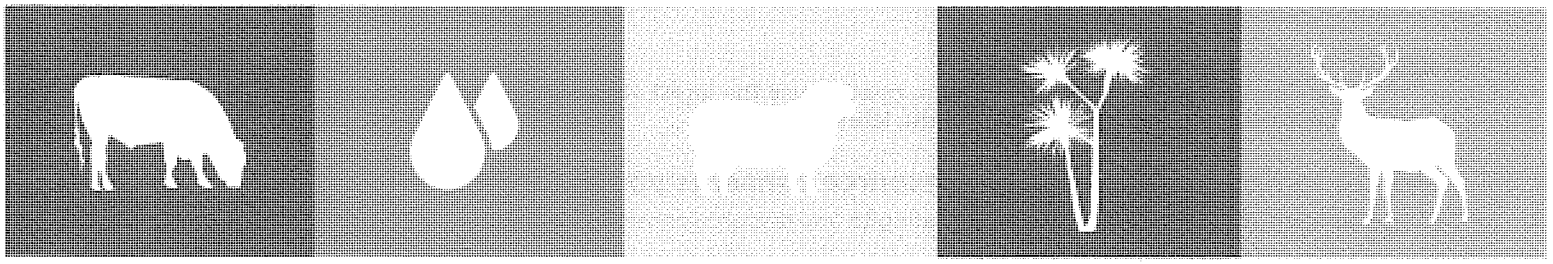
Associated material (hard copy):

- The Deer Industry Environmental Management Code of Practice 2018 – USB Card.
- What happens when your environment plan is audited? – Deer Industry News article (April/May 2109)

beef+lamb new zealand

CANTERBURY FARM ENVIRONMENT PLAN WORKBOOK

By farmers. For farmers



BUSINESS DETAILS

Farm name	Riverslea
Address	200 Timbucktoo Rd. Sheffield Canterbury 7580
Legal description and farm identifier	Lot 1 DP 9650 RS 5917 15946 15947 PT RS 5151 5977 10916 Blk XVI KOWAI SD SO 15226, RURAL SEC 6005 BLK XVI KOWAI SD, Lot 1 DP 3163 PT Lot 2 DP 3817 BLK XII KOWAI SD
Owner/s	Joe and Jill Bloggs
Phone	03 318 9999
Mobile	0212889999
Email	joe.bloggs@scorch.co.nz
Manager	
Phone	
Mobile	
Email	
Who is primarily responsible for the implementation of this Farm Environment Plan?	Joe Bloggs
Contact details (if different to above)	
Phone	
Mobile	
Email	
Resource consents held in relation to this business (list consent numbers)	Irrigation (individual and private)with ECan: CRC069999 Selwyn Zone

Having trouble saving this form? You need to use the latest version of Adobe Reader. Click here to download and install the latest version.

Where to find numbers for any resource consents you hold:

These numbers should be in your records relating to any resource consent you hold.

Otherwise, Environment Canterbury customer services can help (phone (03) 365 3828) or use their online search: ecan.govt.nz/services/online-services/pages/consent-search

RESOURCE CHART

LMU	Description	Strengths	Weaknesses	Uses and management
Lucerne 70ha	Compacted shingle pan at 500mm with pea gravel below & clay & topsoil above. Hororata very stony silt loam	Excellent for lucerne for growing out weaners and lucerne balage. Interested in planting trees (Eucs for coppicing-firewood) and keen to be part of discussion on carbon credits for riparian areas	Has small stream with spring head in an upper paddock, fenced along 1 side. .	lucerne for feeding weaners on. Make lucerne balage. trials of deep ripping to see if lucerne will go down further. Tested for aluminium (is low) so ok for further lucerne. Possibility planting radish to go thru pan
River terrace 74ha	gravel terrace Taitapu complex	usually summer safe fertile	flood prone from Hawkins River, happening more regularly and with bigger impact, requires a lot of work and money in restoring fairway and clearing of debris on land and fences. Dissected by stream and river No flood protection works or vegetation	Plantain-Ecotain to take up extra nitrate leaching grass include prairie grass in mix
Irrigation 72ha 10ha	very good soils for cropping -spud patch 2 different soil types- 1 more stonier than the other on lower area which needs more water. Mayfield shallow soil non irrigated but treated the same	constructed private dam provides security of water so only irrigated when crops need it.	Dam is haven for ducks free draining which doesn't help leaching N dries out very quickly prone to wind blow of light soils- direct drill	Cycle of barley-winter feed , fodderbeet and swedes(x2 for swedes)- barley, to uptake nutrients and protect soil. limit N applications so they don't readily leach, use agronomists for advice of best practice
hill block 138ha	East facing moderate slopes (can drive all of it) very fertile heavy soils with clay base Pahau mottled argillic pallic soil	summer safe (winter nightmare) reasonably sheltered from wind	water retention high in winter so take all livestock off in winter	hind fawning block, set stocked from September- 1 June, when destock completing. Wean in late Feb when weaners come to home block and put on lucerne
forestry 1.6ha	top corner of property P.radiata, planted mid 1990s, haven't been thinned or pruned. same soils as above	part of fawning block, not fenced off, ist calvers use the block, good shelter	due to be logged in next 10 years tucked away in top gully	will replant

RESOURCE CHART

LMU	Description	Strengths	Weaknesses	Uses and management
Mahinga kai	Paradise duck on irrigation pond. Spring head fenced in Lucerne paddock	Nil	Foul area around pond and impact on crops. Source of bacteria.	Shoot in season by hunters
Watercourses	Sediment traps at bottom of drains Ephemeral streams	trap sediment before it exits to Hawkins River	Can run 4-6 months of year if wet	cleaned out in sections so if any fish life is found it can be retained and put back. Staged plan to fence and plant.

ENVIRONMENTAL OBJECTIVES AND SUMMARY OF CURRENT PRACTICES

Objective three—livestock management

To manage wetlands and water bodies so that stock are excluded as far as practicable from water, to avoid damage to the bed and margins of a water body, and to avoid the direct input of nutrients, sediment, and microbial pathogens.

What practices help you achieve objective three?	How can you demonstrate this?
Water protection Area of native wetland plants is retained as part of the sediment trap on last section of stream where it exits property.	photos, how often it is cleaned out (clean out in sections- 10m every 2 years (sediment and weed-monkey musk and watercress), photos before and after)
Prioritise river protection work, talk to river engineer who agreed with present practice of river and land repair work after floods.	photos
Hawkins River is fenced with single hot wire to keep cattle out. Deer aren't run in this area.	photos
Other streams are fenced on one side, aiming to fence other sides as budget allows.	photos
In meantime put in sediment trap and fence off last sections of streams as they exit property to filter any nutrients and sediment.	photos
Only run hinds from September to 1June on hill block and remove to crop on home block during wetter period.	Diary Records
Waterrace within irrigated area to be fenced prior to winter grazing	photos

Objective four—offal pits

To manage the number and locations of pits to minimise risks to health and water quality.

What practices help you achieve objective four?	How can you demonstrate this?
Stock Management/Waste Management No offal pit at home block as very few deaths so dig a hole (at least 50m from stream) and bury them where they die, if they do. Offal pit on hill block.	stock reconciliation records.
To reduce stock deaths we 1.Don't tag or vaccinate young stock when weaning so less stress; 2.Drench weaners with magnesium and Scanda for lungworm when weaning 3. Shift cull hinds with weaners to help settle and transport them from the run block to the home farm when weaning. 4. Feed barley pre-weaning to help socialise stock to vehicles and people.	Animal health records
Minimise waste by recycling all farm waste eg. baleage wrap, string, chemical containers.	
Minimise amount of baleage required by feeding straw (baled from grain paddocks) with fodderbeet.	

ENVIRONMENTAL OBJECTIVES AND SUMMARY OF CURRENT PRACTICES

Objective five—Irrigation management

To operate irrigation systems that are capable of applying water efficiently and ensuring that the management that ensures actual use of water is monitored and is efficient.

What practices help you achieve objective five?	How can you demonstrate this?
Water when plants need it using a centre pivot.	no ponding and wheel ruts
Bucket test at beginning of season to check for even pressure and uniformity of application rate and depth.	test results
Watercheck monitors water coming into irrigation dam, as part of consent.	Records- consent
Irrigation dam provides security of water, so you don't water to maintain right to take water but use water when plants need it.	
Installed soil moisture probe 2018.	
Recognition of different soil types in irrigation area that need different watering. Stonier soils need twice as much water.	Soil map and irrigation records.

Objective six—Biosecurity

What practices help you achieve objective six?	How can you demonstrate this?
Presently graze 102 carry over cows, buy in June, put to Angus bull and sell again as in-calf cows. As these are sourced from different properties looking to what we do in the future with risks from M.bovis.	NAIT records, animal health records
Only sire stags are bought in, from known properties. All other deer are breed on farm.	Sire stag purchased from Mt Peel Forest as needed.
Fodderbeet crops cleared for bolters and checked for velvetleaf. Have the Brigadeer variety.	

ENVIRONMENTAL OBJECTIVES AND SUMMARY OF CURRENT PRACTICES

Objective seven—Prioritising waterways to be fenced- transfer to actions

What practices help you achieve objective seven?	How can you demonstrate this?
Home block terrace drain- fence NE side (other side already fenced) to allow for cleaning when required, possibly use sheep netting + electric top up. Paddock above is used by stags and there are bare areas under mature pine trees.	medium-high priority, 12 months
willow bog area- trees need to be removed- costly, is it feasible to chip/investigate options, then re-look at what needs to be fenced. fed by runoff from lucerne area-(aquifer high water table)	low, 3 years
investigate installing a 2nd sediment trap (edge of paddock 22), all water from deer farm goes through here	high, 12 months, 3 willows to be removed and some planting of carex etc
investigating run off block- sediment trap area as stream leaves property	high (2 job)
fencing of waterway	costly- needs stock water system first, other things to be done first
restore and fence off drain in paddock 14	high 12 month

Objective eight—

What practices help you achieve objective eight?	How can you demonstrate this?

ENVIRONMENTAL OBJECTIVES AND SUMMARY OF CURRENT PRACTICES

Objective nine—

What practices help you achieve objective nine?	How can you demonstrate this?

Objective ten—

What practices help you achieve objective ten?	How can you demonstrate this?

Area	Issue/risk	Significance (L, M, H)	Response	Timeframe	Responsibility
Nutrient management	Extensive use of soil tests using transects to identify nutrient needs of paddocks for cropping	Medium	soil testing for crop paddocks	yearly	Joe Bloggs
	Good use of rural professionals eg Ballance reps to do Overseer reports.	Medium	Review Overseer as required	yearly	Joe and fert rep
	Drill fertiliser into soil rather than broadcast	Medium		yearly	Joe Bloggs
	Maintain soil pH at optimum for lucerne growth eg 6.4	High	maintain healthy plant growth	yearly	Joe
	Manage numbers of ducks on irrigation pond		yearly	yearly	Joe and duck shooters
Soil management	Crop management using crop cycling to use any excess nutrients in soil and maintain soil conditions.	High	eg barley-fodderbeet-barley and barley-swedes-barley+barley- swedes	yearly	Joe Bloggs
	Electromagnetic mapping of calcium levels in the soil on irrigated area to identify areas that need lime,	Low	use VRI for lime via the truck. (was this Tracmap) Done in 2016	possibly every 5 yrs	
	Direct drilling used on farm and no deep cultivation to minimise soil disturbance and erosion or drying out of soils.	High	Direct drill	yearly	Joe
	One area on edge of terrace under older pine trees that stags use for shade does loose soil by wind erosion when weather is right	Low	identify sites and species to plant of ornamental shade trees.		Joe

Area	Issue/risk	Significance (L, M, H)	Response	Timeframe	Responsibility
Waterways and biodiversity	Priortising river protection work.	High	see Objective 6 for priorities.Paddock 58 fence & plant suitable for ETS;Pdk 55 fence 100m & remove old willows; Southern boundary- remove pines, fence & replant for shelter	3-4 year programme	Joe (if budget allows)
	Maintain Hawkins River in fairway through the property.	High	Remove debris and reinstate river bank. Spoken to river engineer but also want to consult with Zone Committee re Hawkins River	after each flood	Joe
	Other streams are fenced on one side, aiming to fence other side as budget allows.	Low	Explore opportunity of getting carbon credits for riparian areas with enough area and the right species.	as budget allows	Joe/Janet Gregory (NZ Landcare Trust)
	Not enough funds to fence all streams at once.	Medium	in meantime put in sediment trap and fence off last sections of streams as they exit property to filter any nutrients and sediment.	timeframe?	Joe
Offal/rubbish/ silage pits		Low			

Area	Issue/risk	Significance (L, M, H)	Response	Timeframe	Responsibility
Irrigation management	moisture tapes installed 2018	Low High	Continue bucket tests at beginning of season.	yearly	Joe
Other Biosecurity	Review practice of bringing in carry over cows.	Medium	Discuss with vet	ongoing	Joe

STEPS

ONE
PREPARE FARM MAP

TWO
DEFINE AND DESCRIBE LMUS

THREE
IDENTIFY STRENGTHS AND WEAKNESSES FOR EACH LMU

FOUR
REVIEW NUTRIENT BUDGET INFORMATION

FIVE
LIST ENVIRONMENTAL OBJECTIVES AND OUTLINE CURRENT PRACTICES

SEVEN
IMPLEMENT, MONITOR AND REVIEW

CHECKLIST

Have you completed...?

☑ Create a farm map that shows sites of interest for farm environment planning.

☑ Identified areas of land that can be farmed or managed in a similar way because of underlying physical similarities.

☑ Completed the resource chart, evaluating the strengths and weaknesses of each LMU.

☑ Reviewed and updated your current Overseer® nutrient budget using LMUs.

☑ Identified environmental objectives and listed good management practices to achieve each one.

☑ Recorded other things you do that demonstrate good environment management practices.

☑ Completed your Farm Environmental Plan and signed the implementation agreement on page 12.

RESPONSIBILITY FOR IMPLEMENTING THIS FARM PLAN

As the person responsible for implementing this plan, I confirm that the information provided is correct:

Name (plan implementer) Joe Bloggs

Position (e.g. owner/manager) owner

Signature and date 18/03/19

Owner and lessee commitment

As owner/s of this farming business I/we are committed to ensuring that all activities on our property are undertaken in an environmentally sustainable and culturally sensitive manner. We agree to monitor our performance in meeting the management objectives and outcomes in this Plan, and take appropriate actions to address any areas where improvement is needed.

Name (owner or owner representative)

Signature and date

Name (lessee or lessee representative)

Signature and date

Workshop facilitator

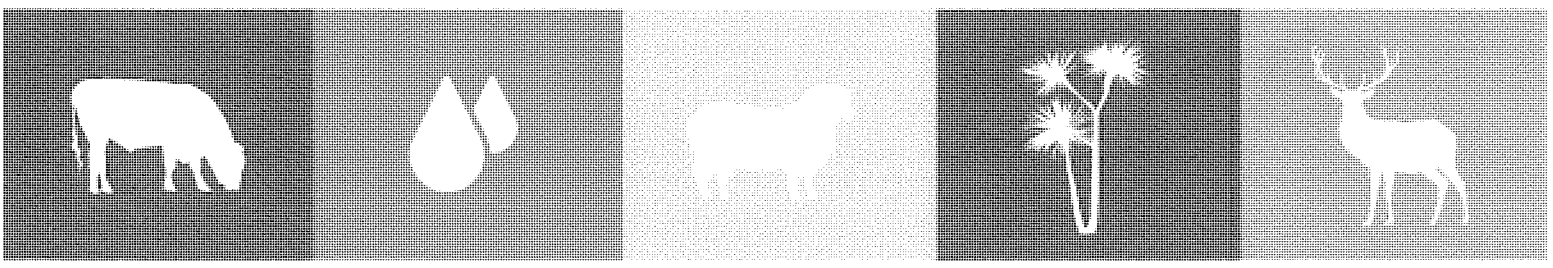
I acknowledge that this FEP has been completed to a reasonable standard, and Stu Stokes has gained an understanding of the FEP process.

Name (workshop facilitator) Janet Gregory

Signature and date 25/02/19

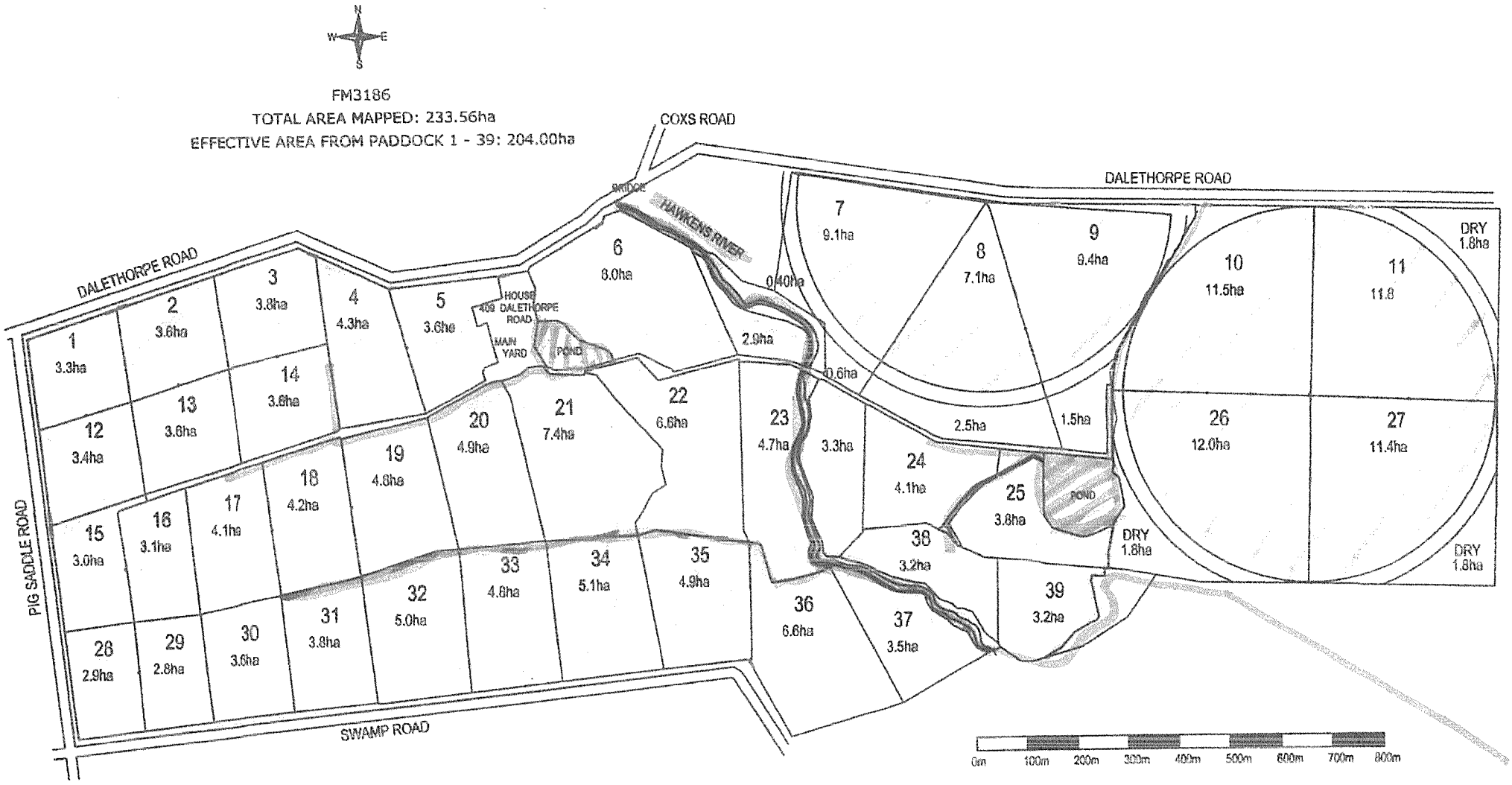
beef+lamb
new zealand

By farmers. For farmers



irrigated - pivot.
lucerne. dryland.
river terraces.
ripavian / ponds.

Land Management Units.

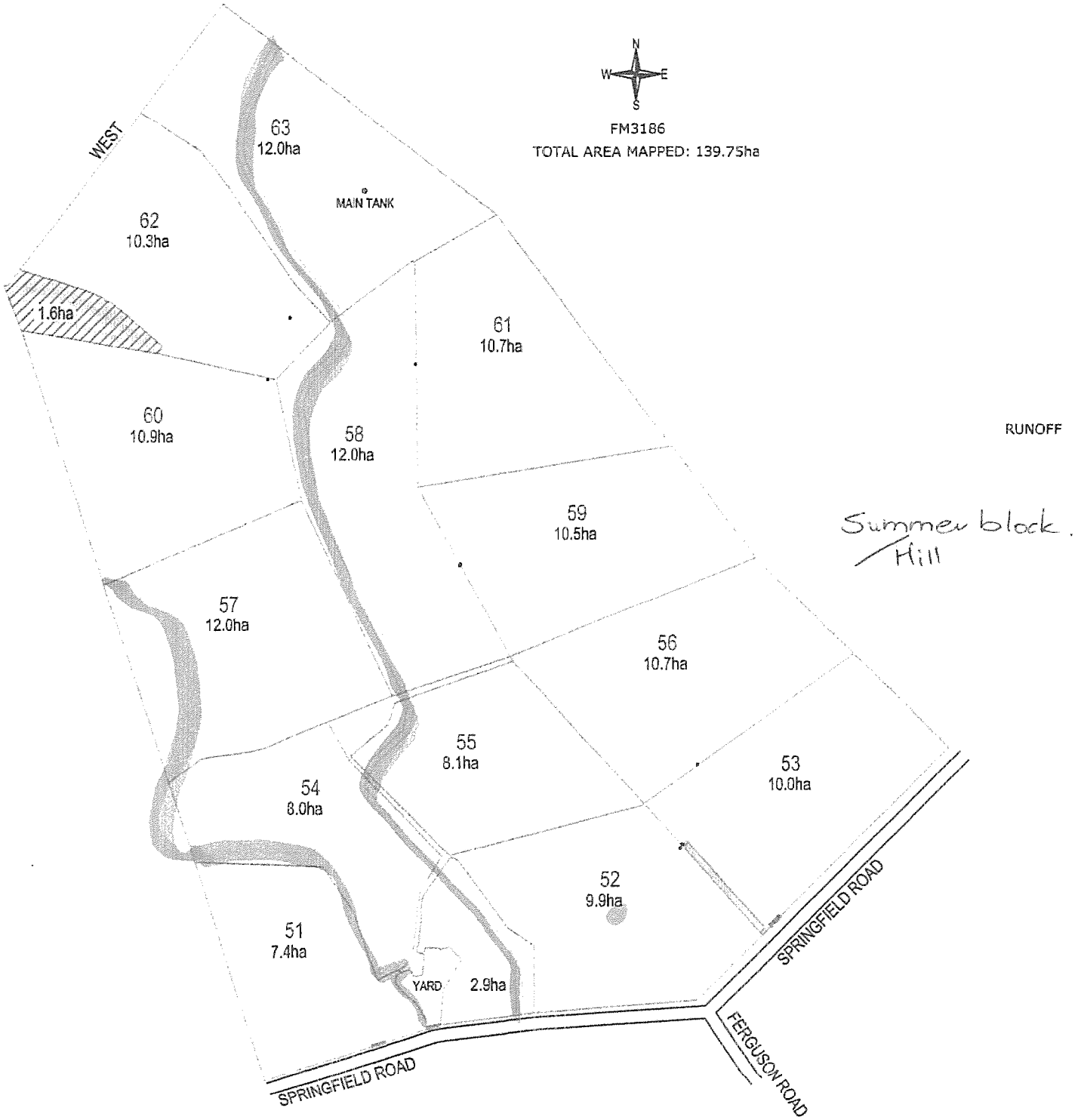


offal pit.

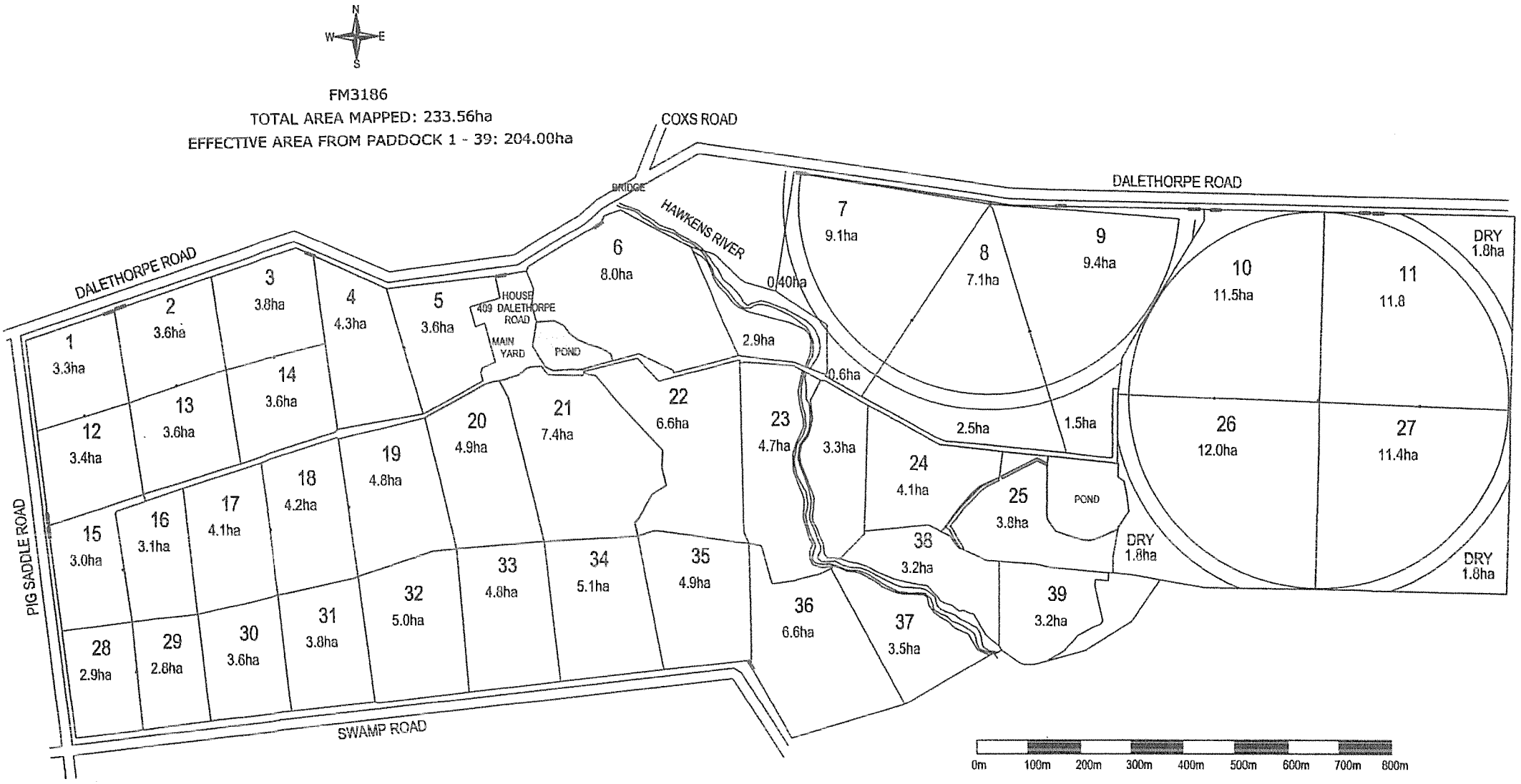
Emphemeral creeks.

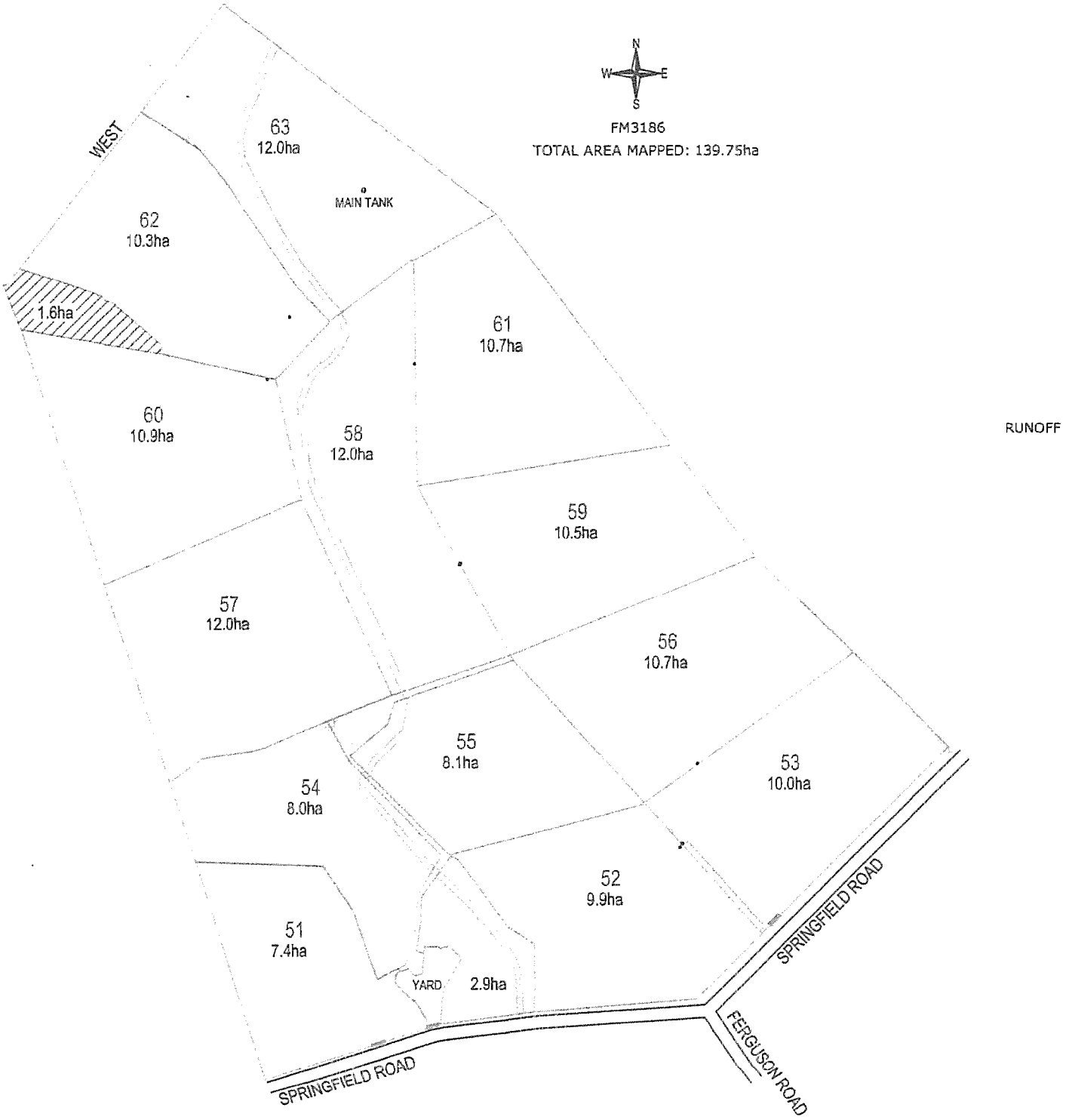
forest block / shelterbelt.

Land management Units.

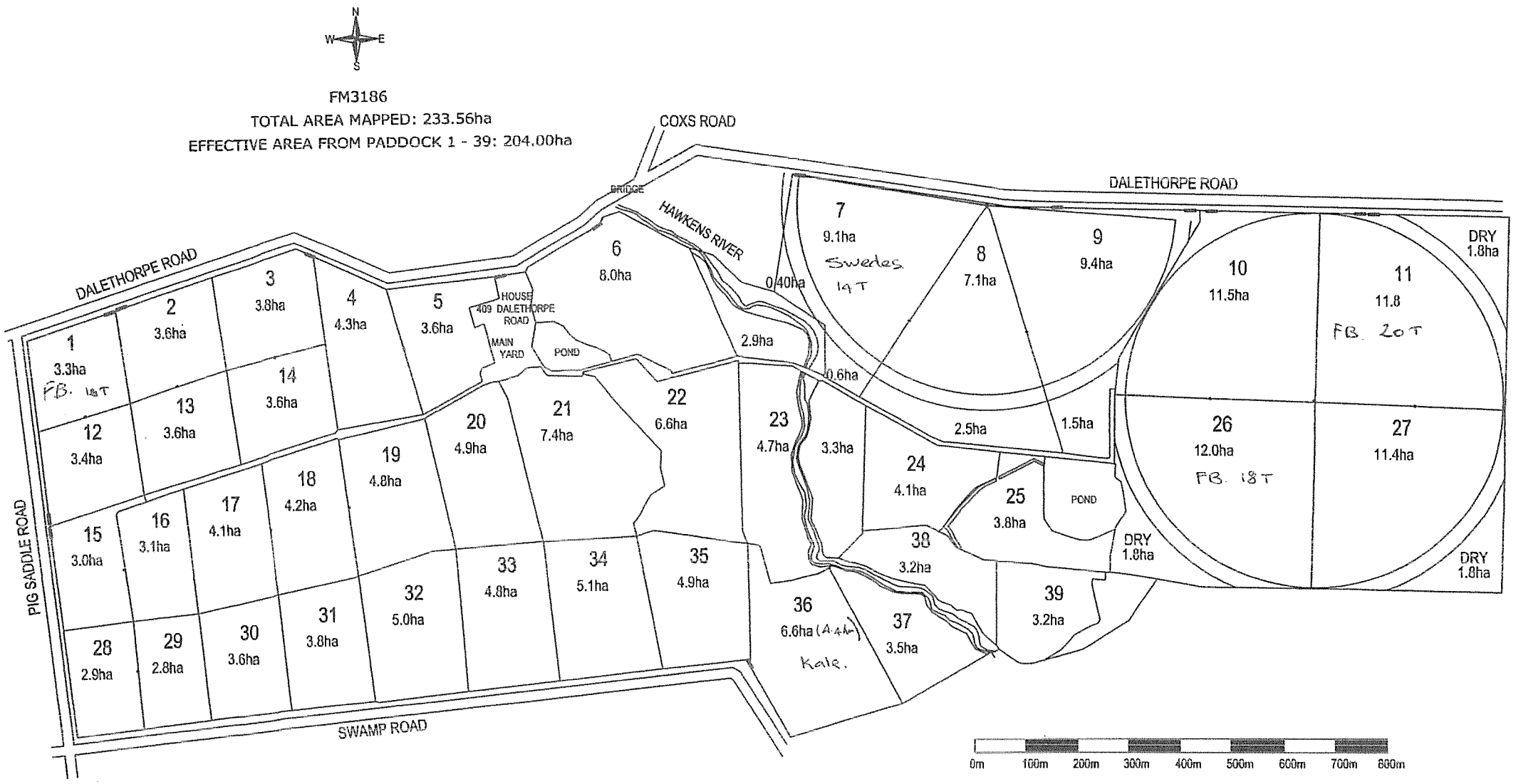


Critical Source Areas

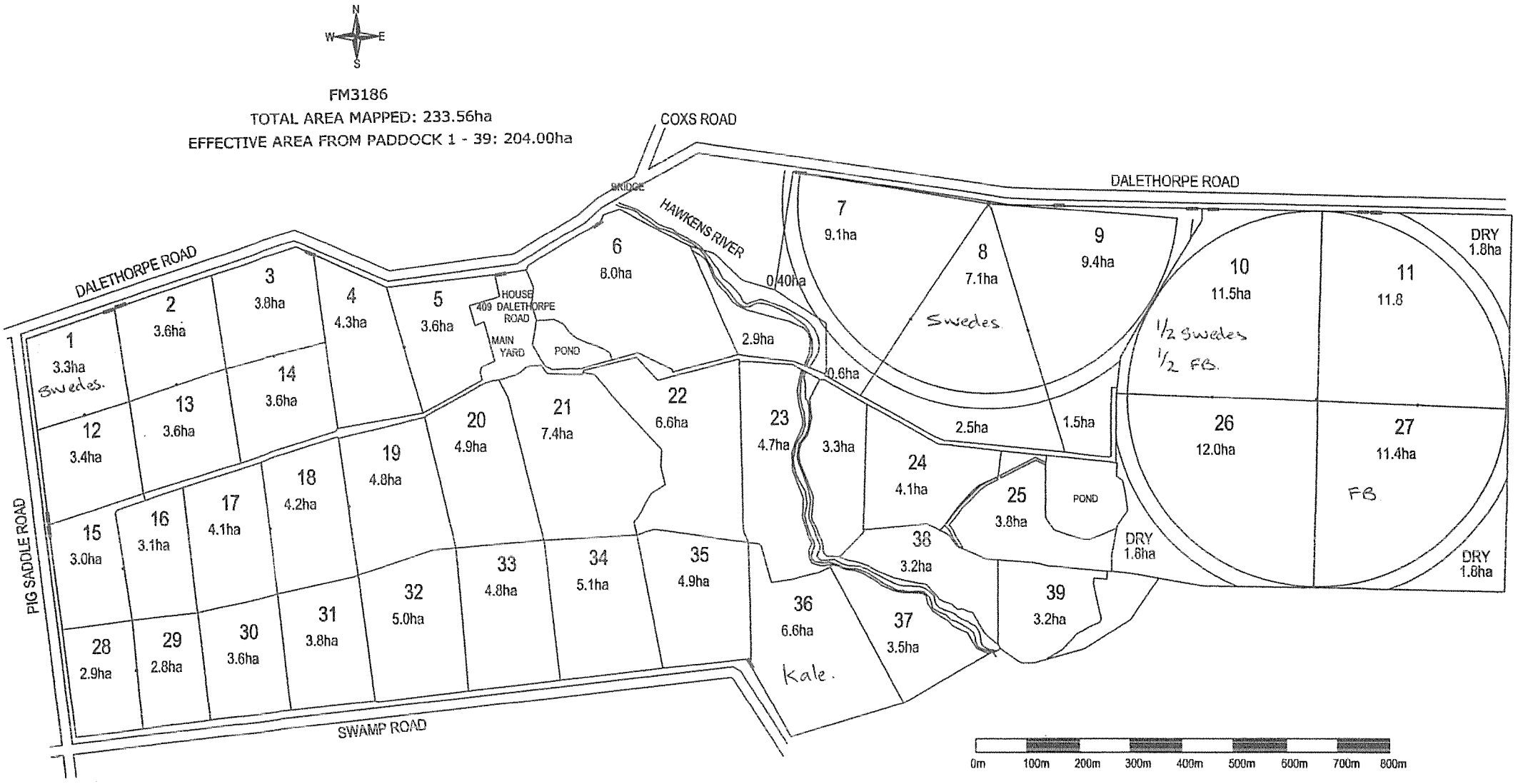




Critical Source Areas.



Wintering 2018

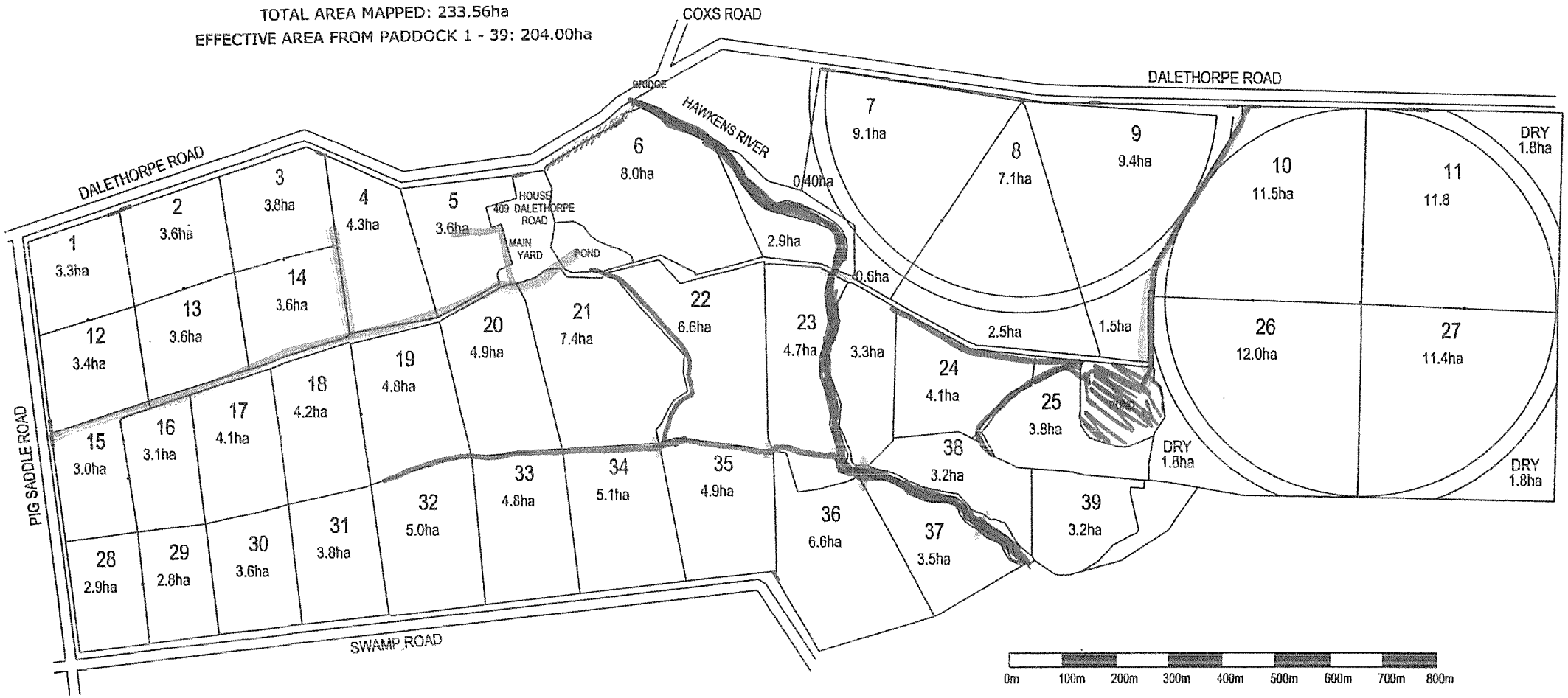


Wintering 2019.

Ephemeral
Hawkins River.
Springheads.
Sediment trap.
riparian planting
Stock crossings
Water race.

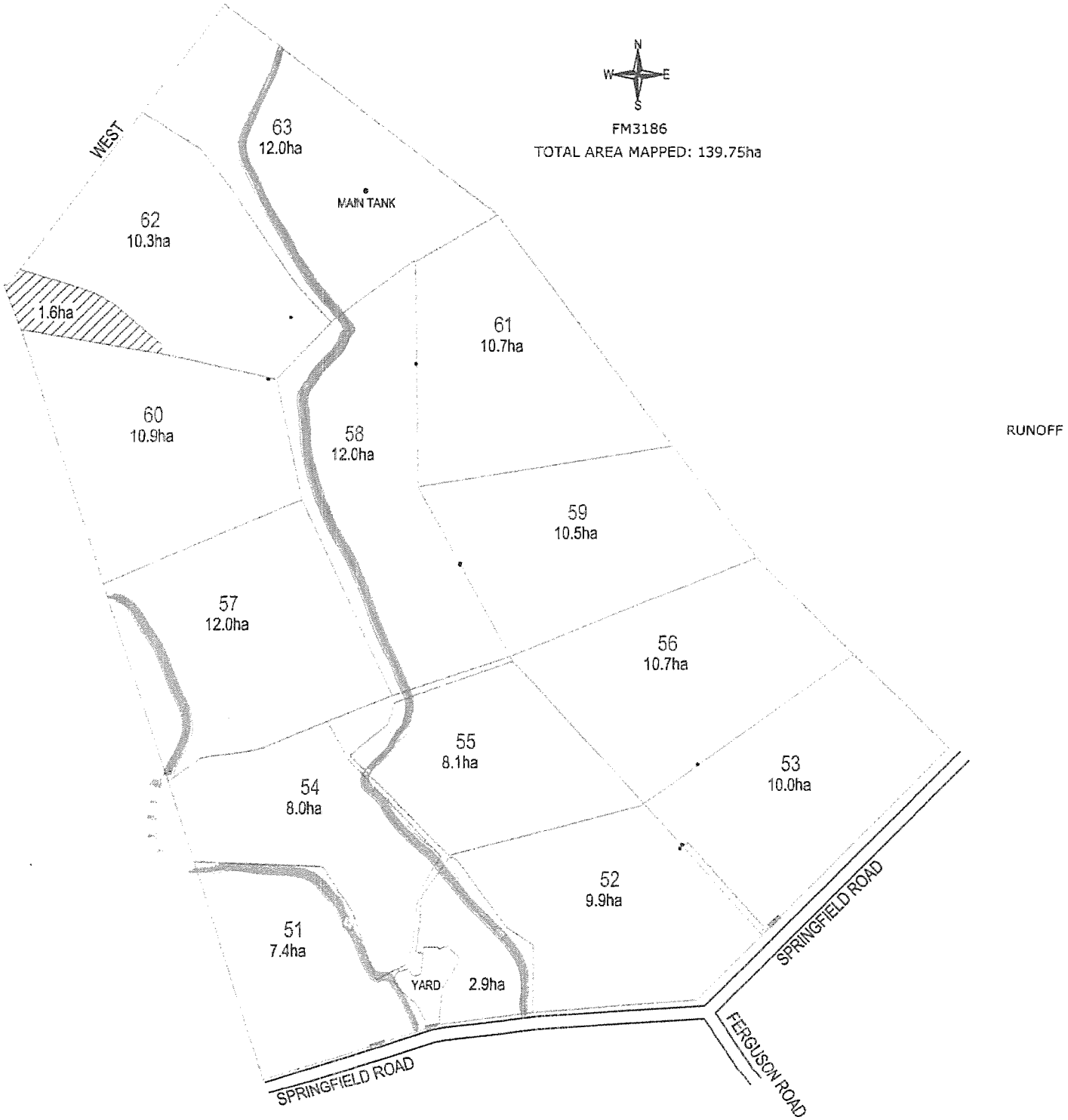
Water Courses.

FM3186
TOTAL AREA MAPPED: 233.56ha
EFFECTIVE AREA FROM PADDOCK 1 - 39: 204.00ha

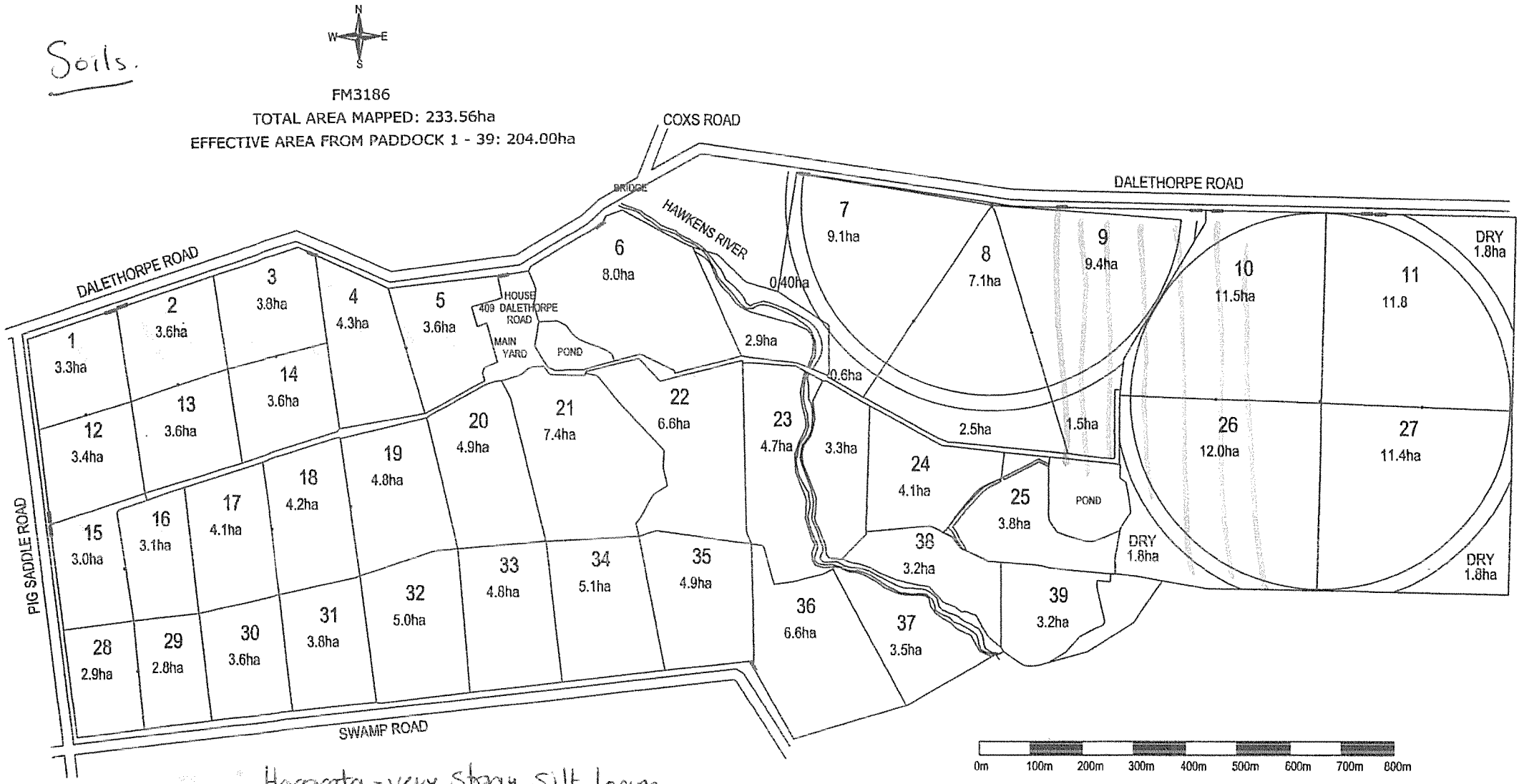


Ephemeral. (run 3-4 mths)

Watercourses.



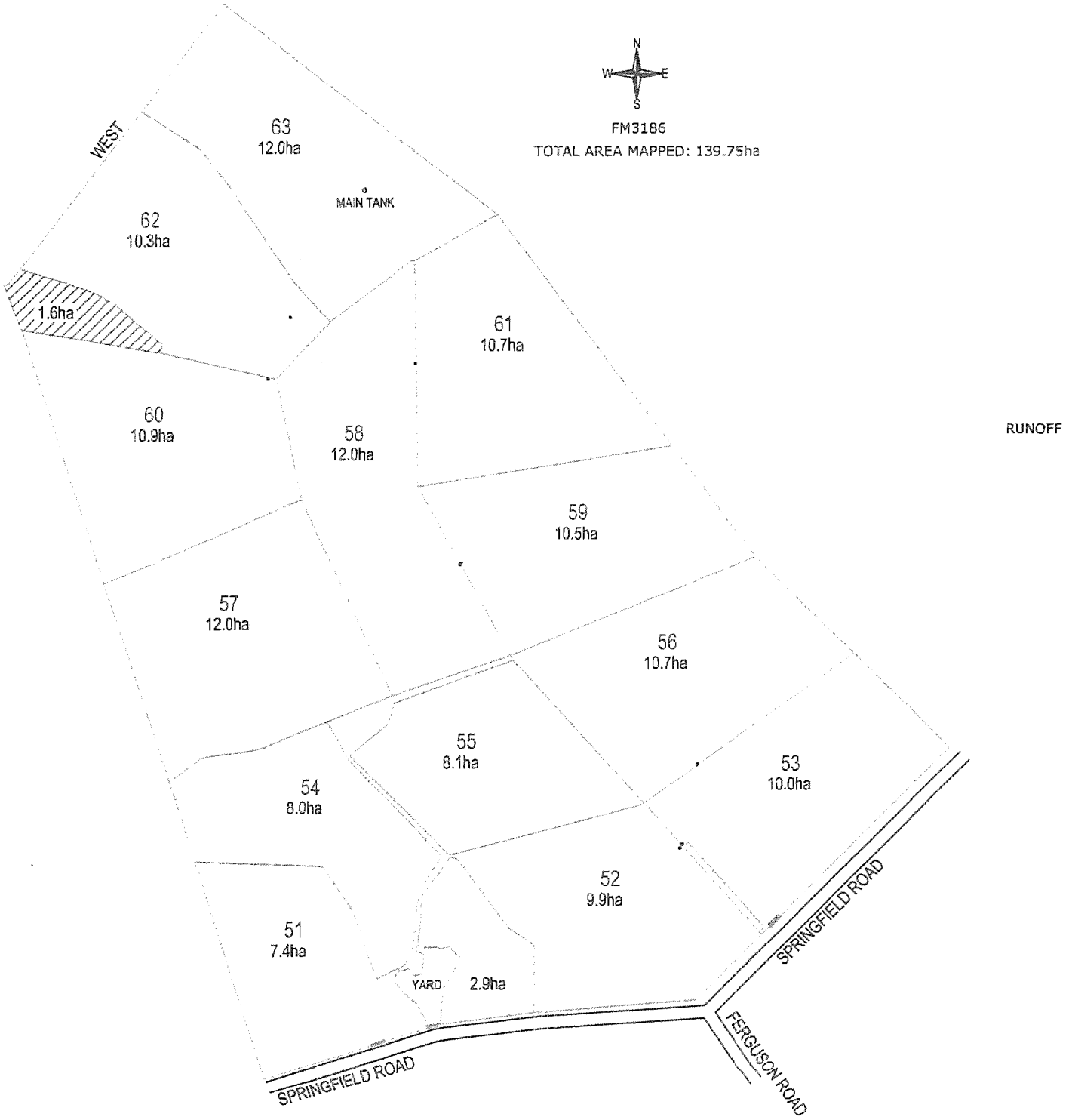
Soils.



Horonata - very stony silt loam.
Taitapu complex
mayfield shallow soils
Lyndhurst moderately deep silt loam.

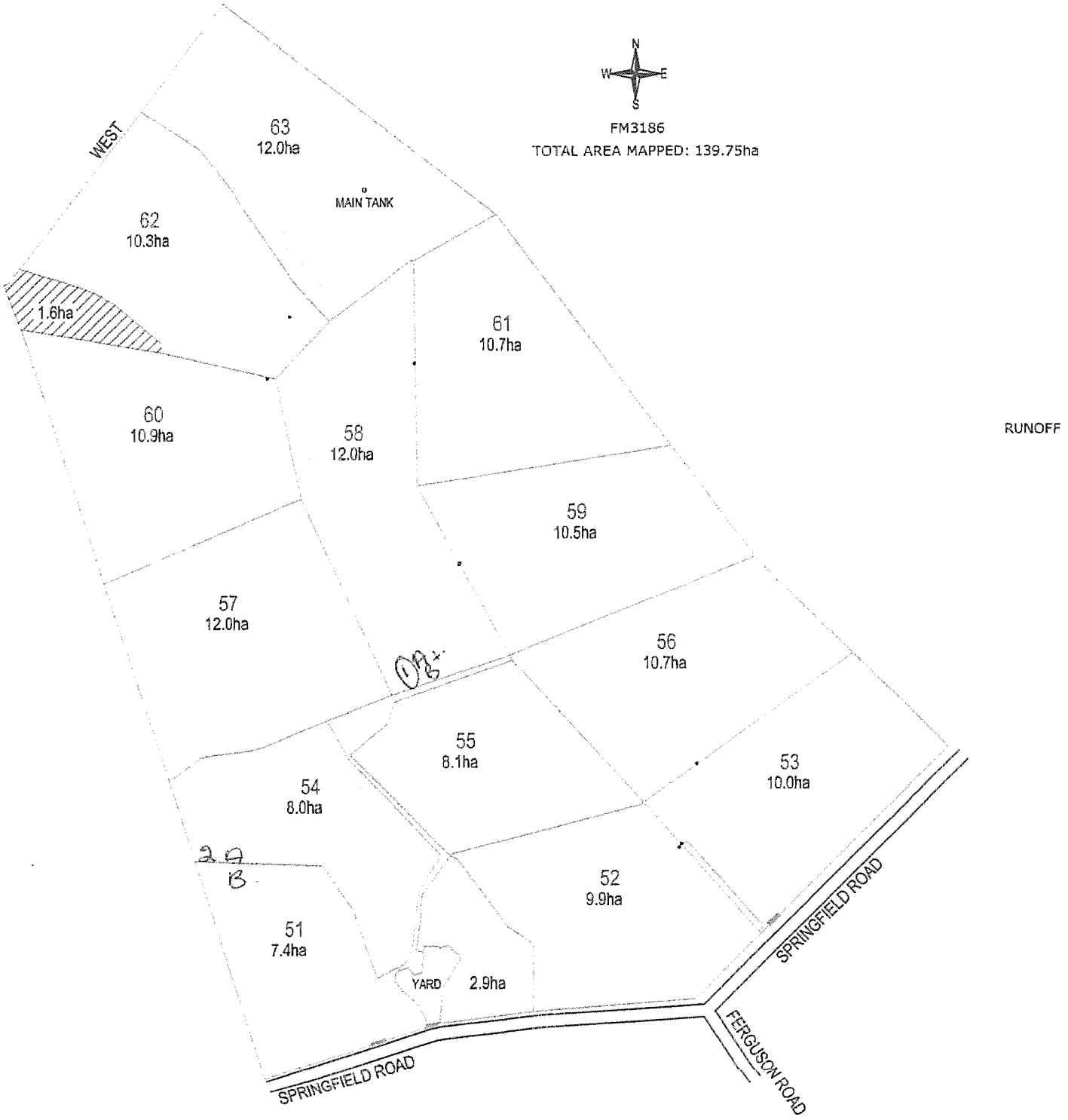
Soils.

Pahau
moderately deep silty loam.



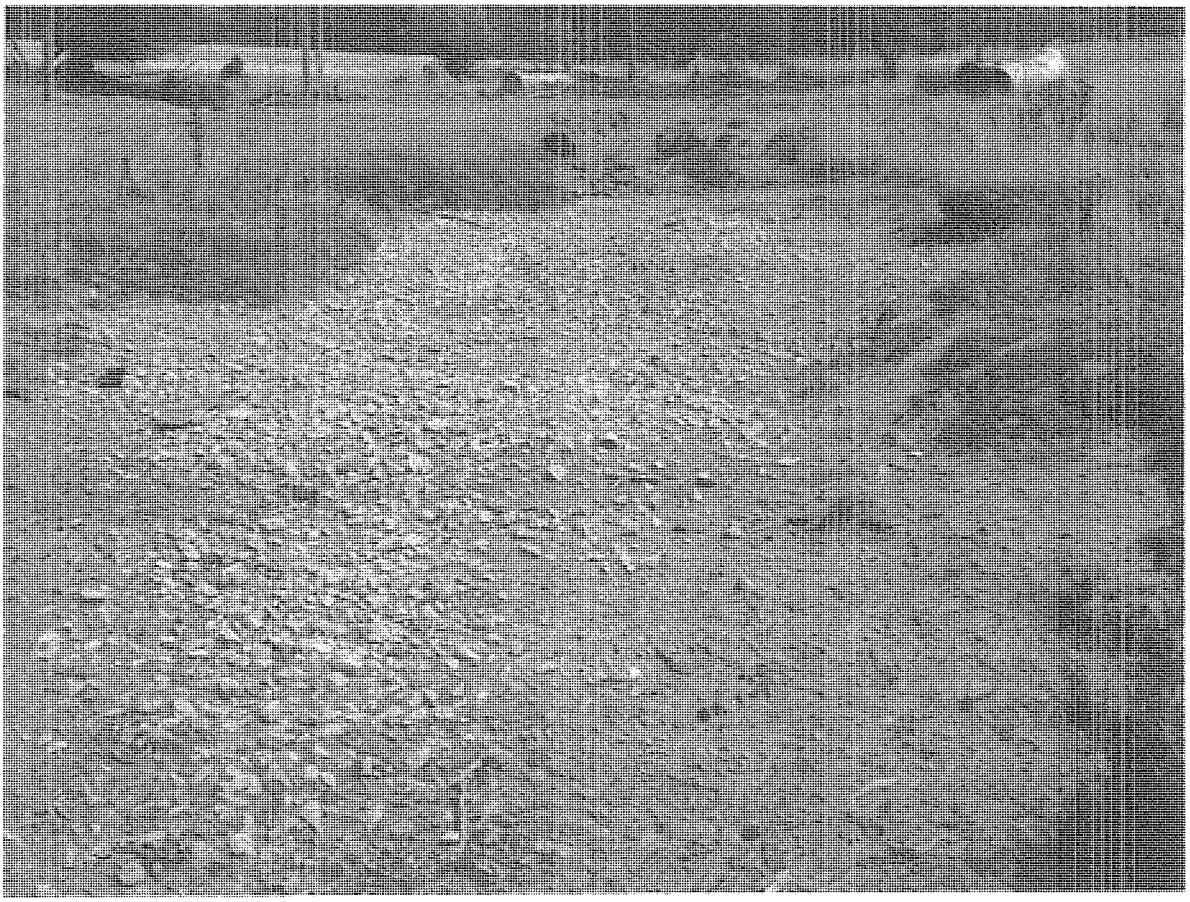
Photos.

24 Feb 2019.

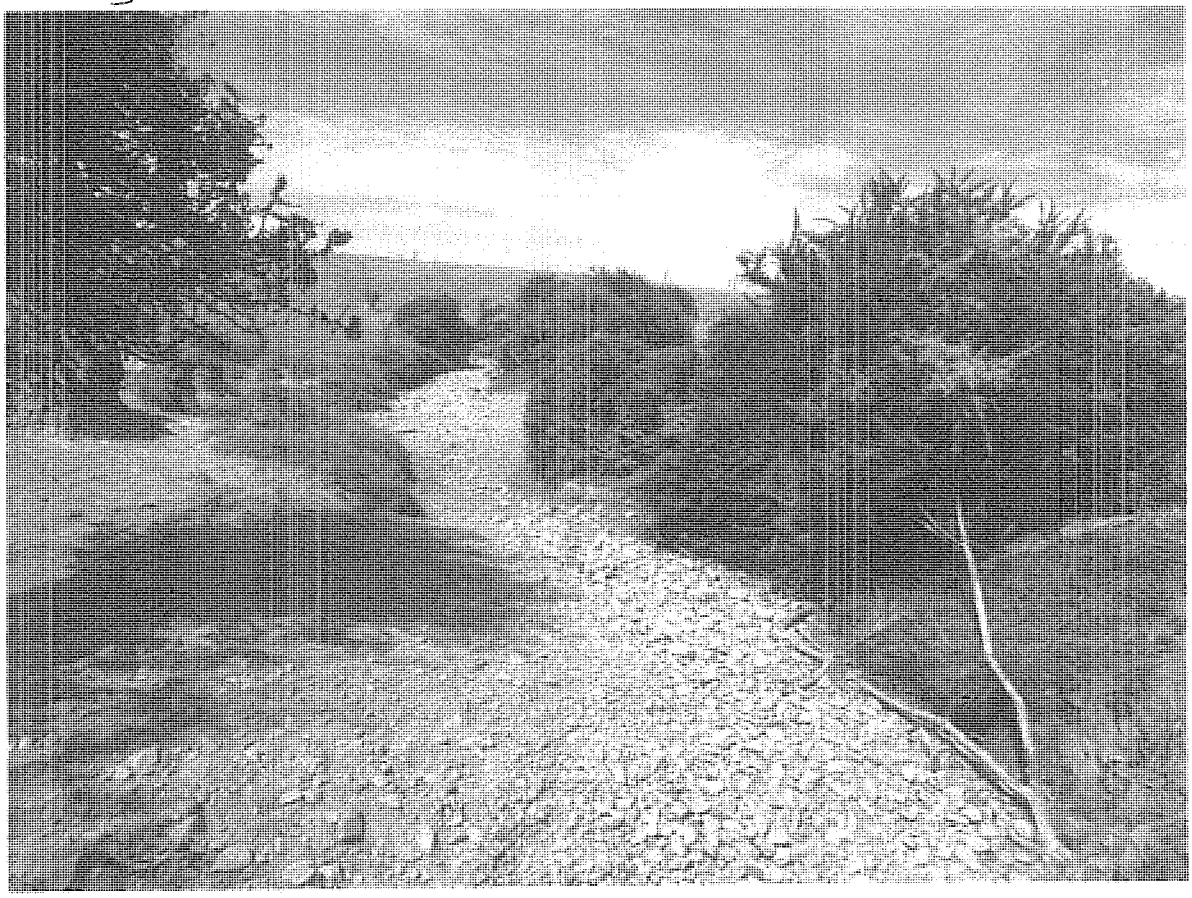


Hill Block.

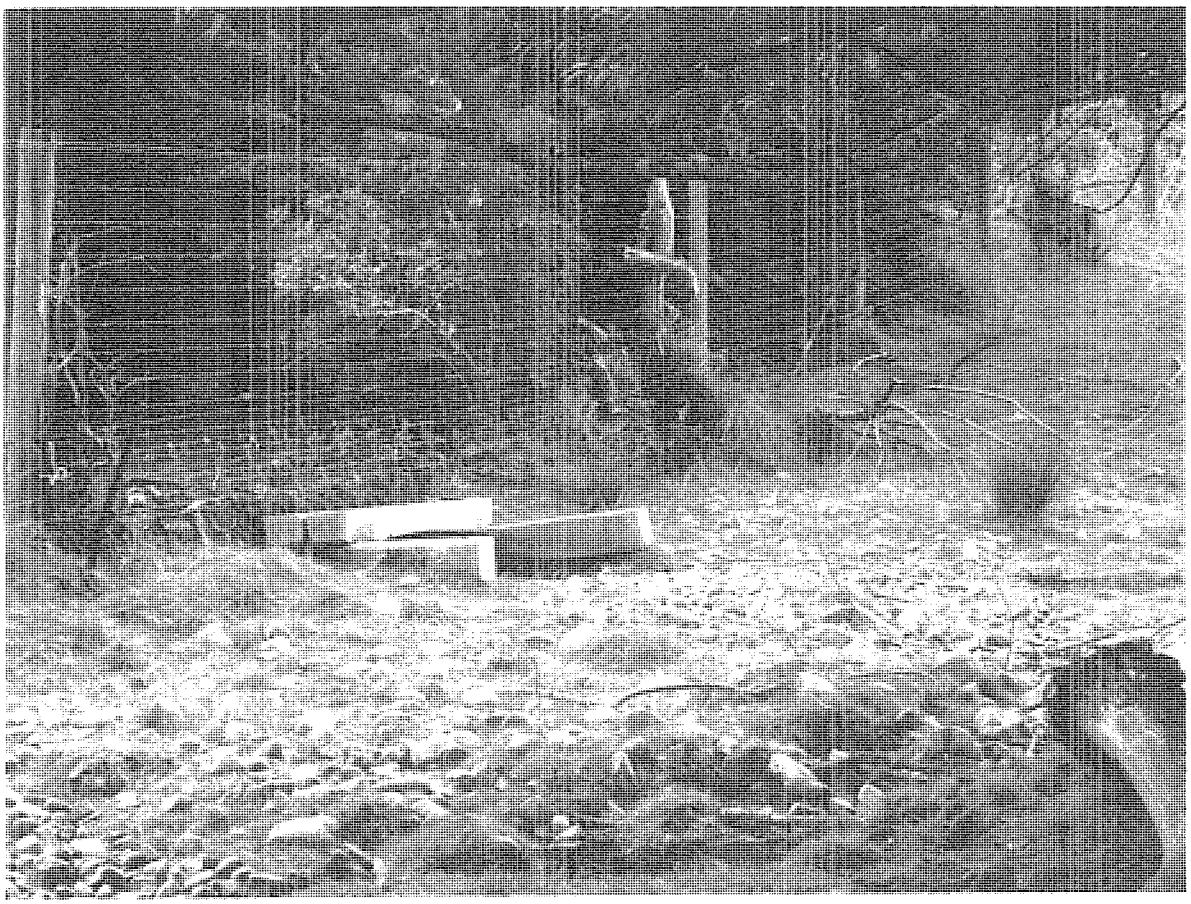
24 Feb 2019.



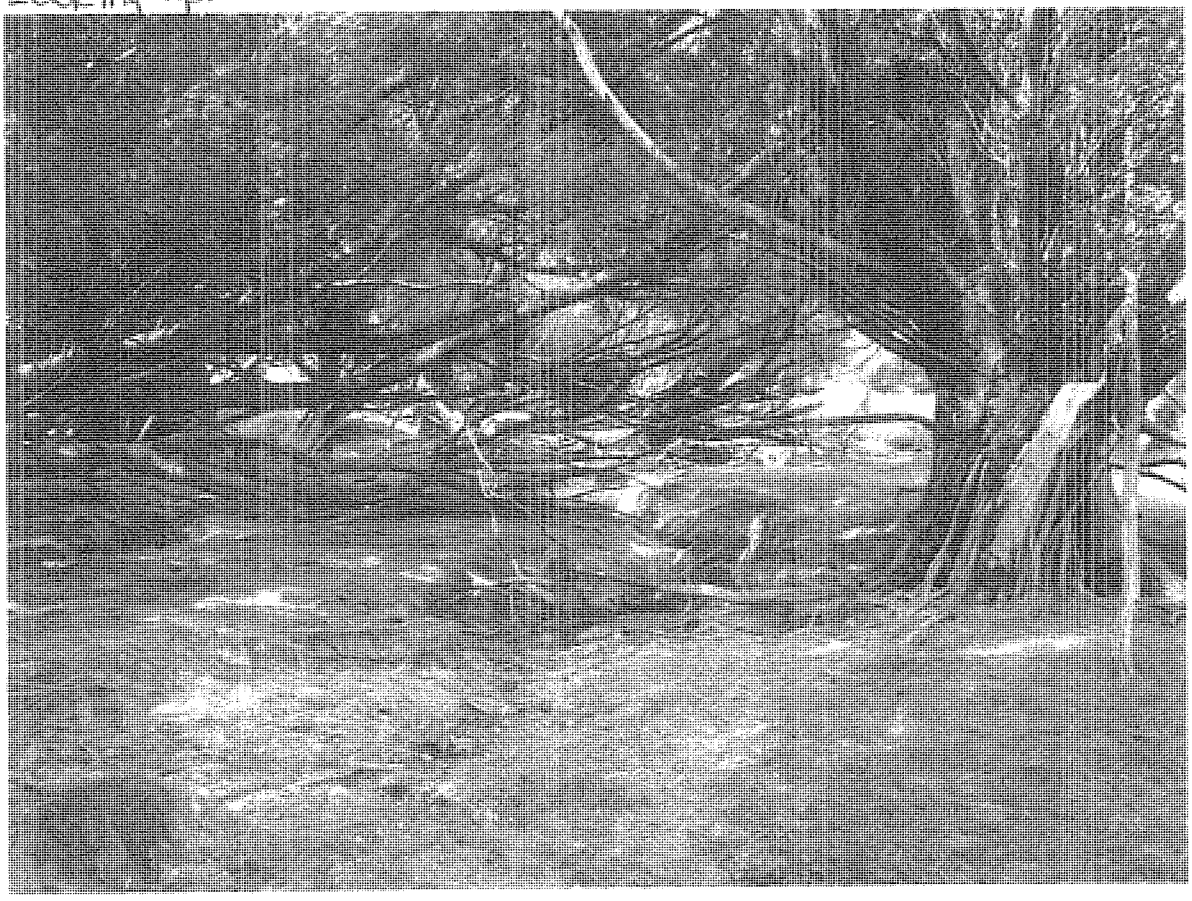
1. Looking down



1A Looking up.



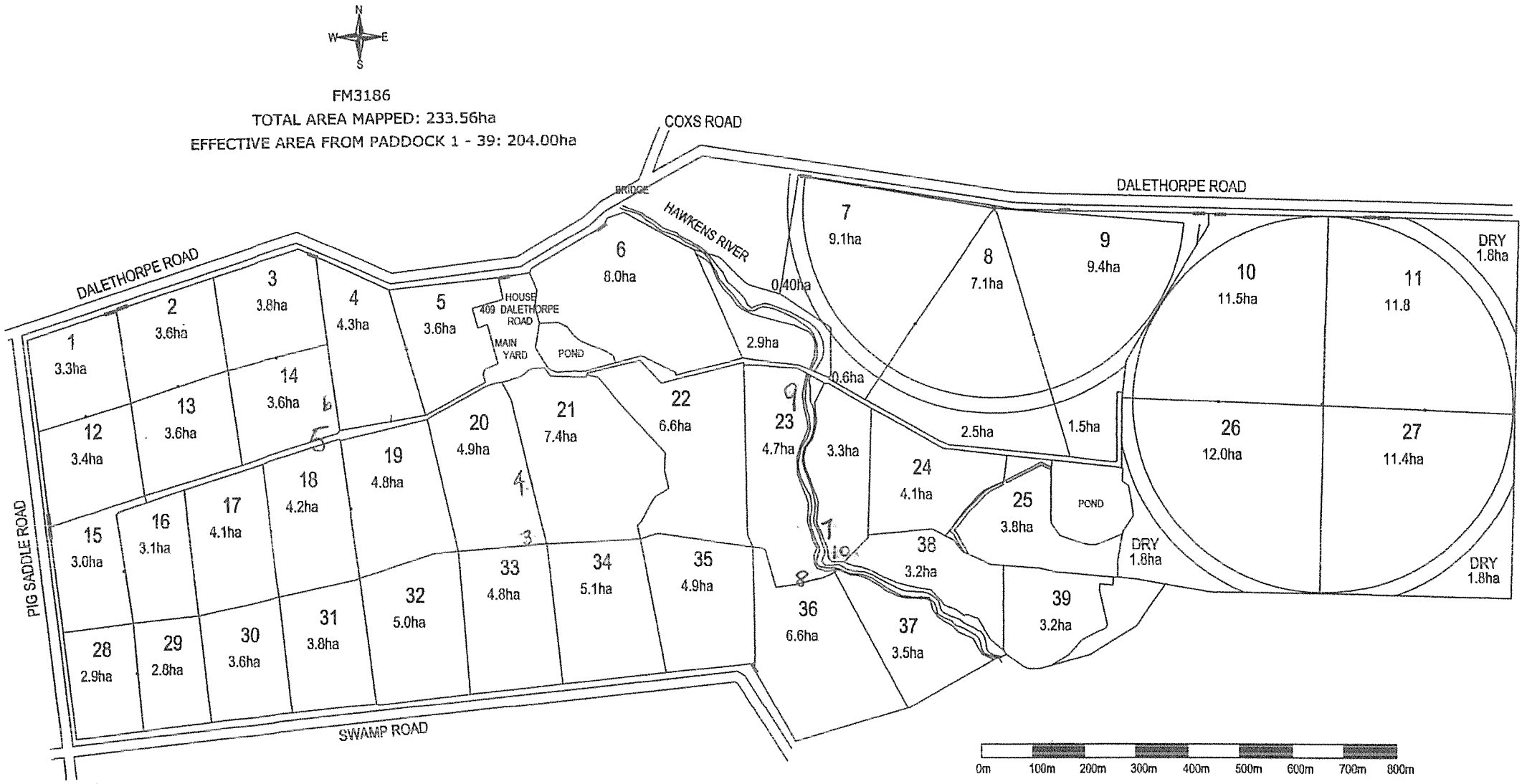
2 A. Looking up.



B Looking down.

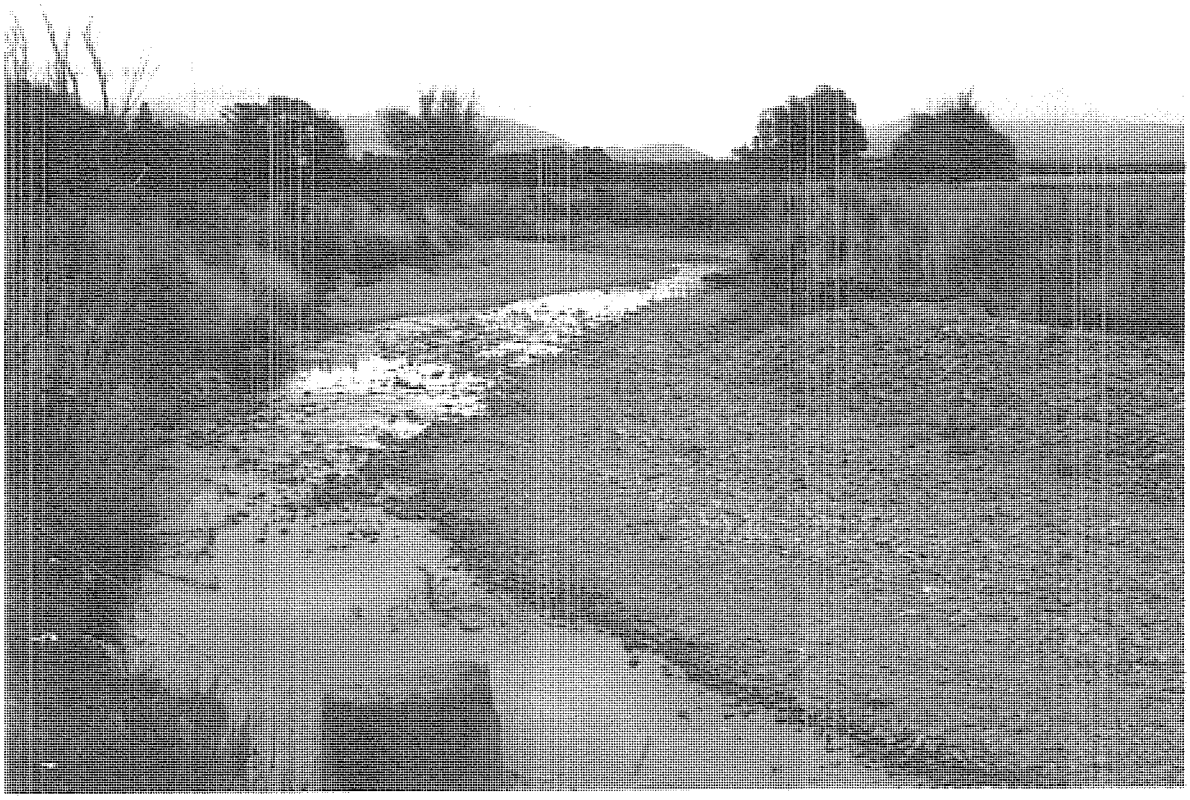
Photos.

24. Feb 2019.



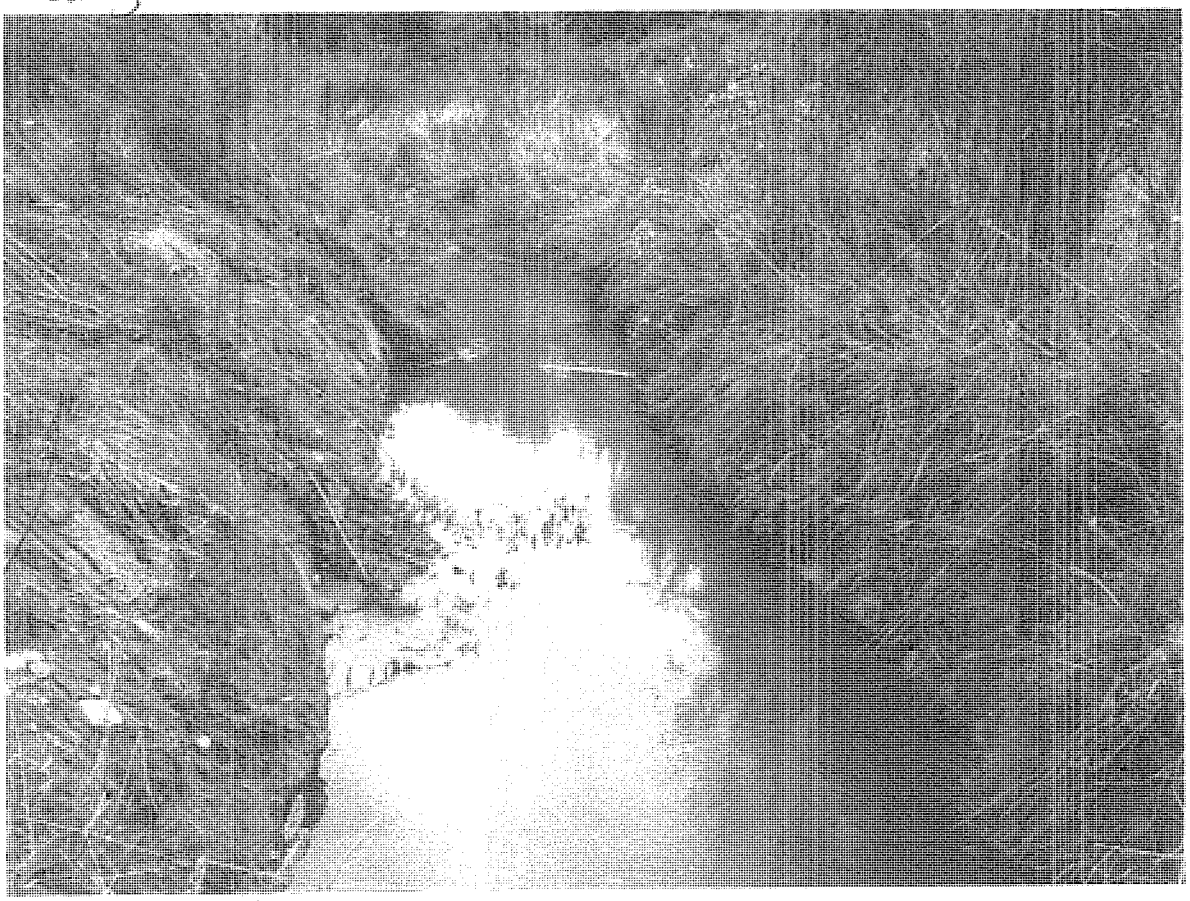
Riverslea.

Hawkins River



Jan 2019

7 Looking north

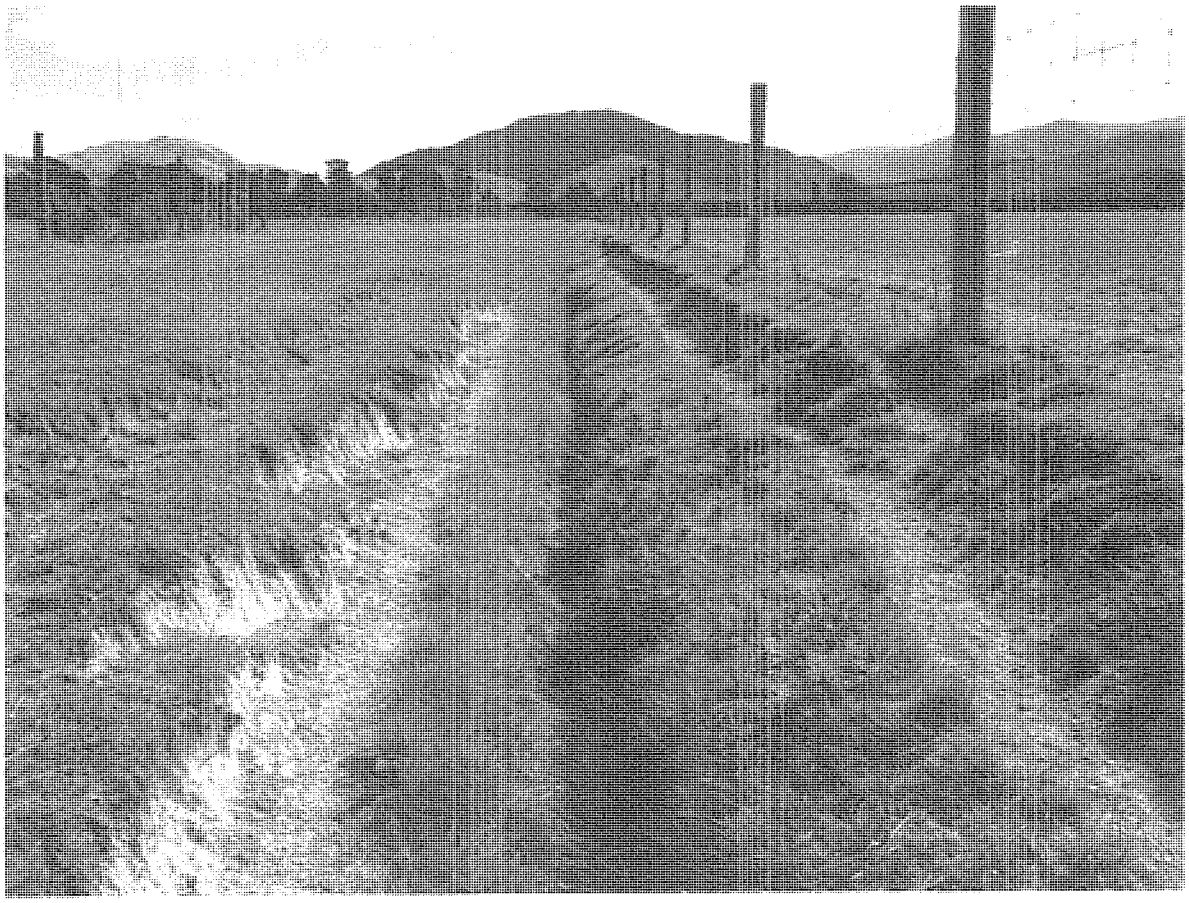


Jan 2019.

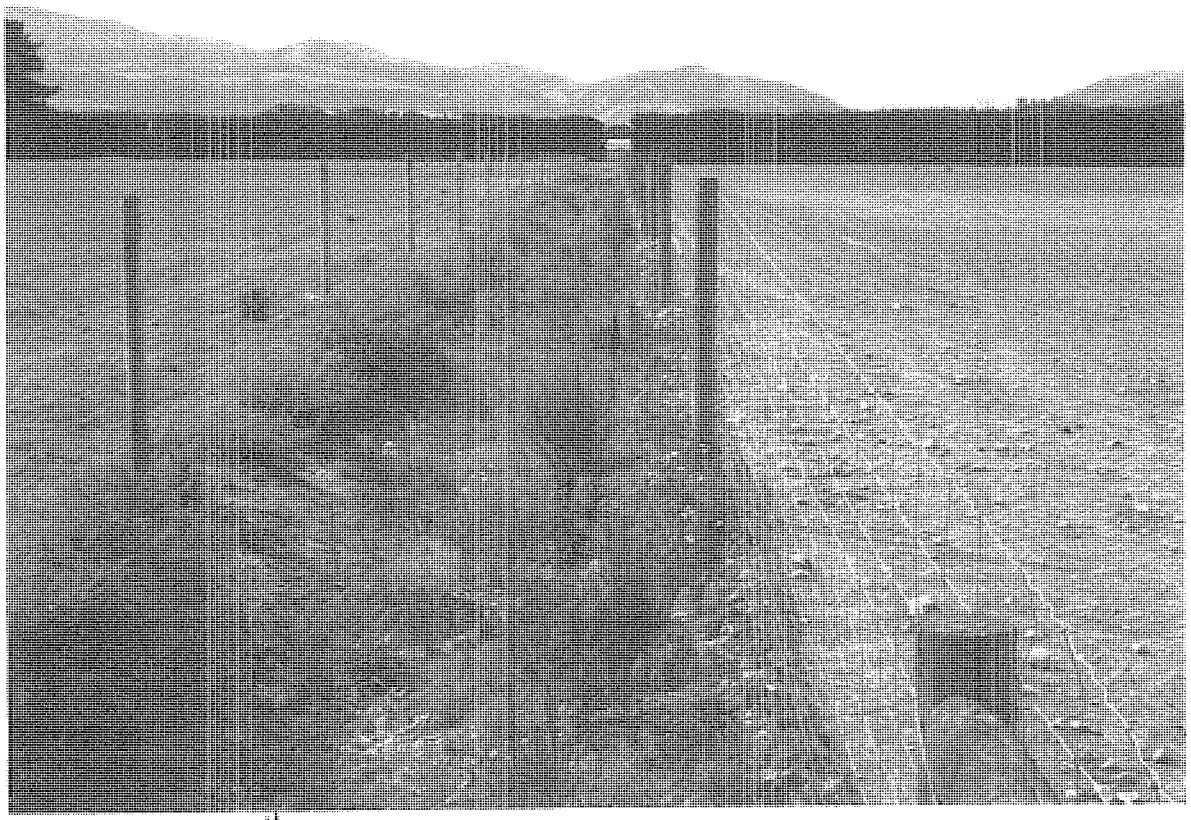
8. Sediment trap

Riverslea

24 Feb 2019



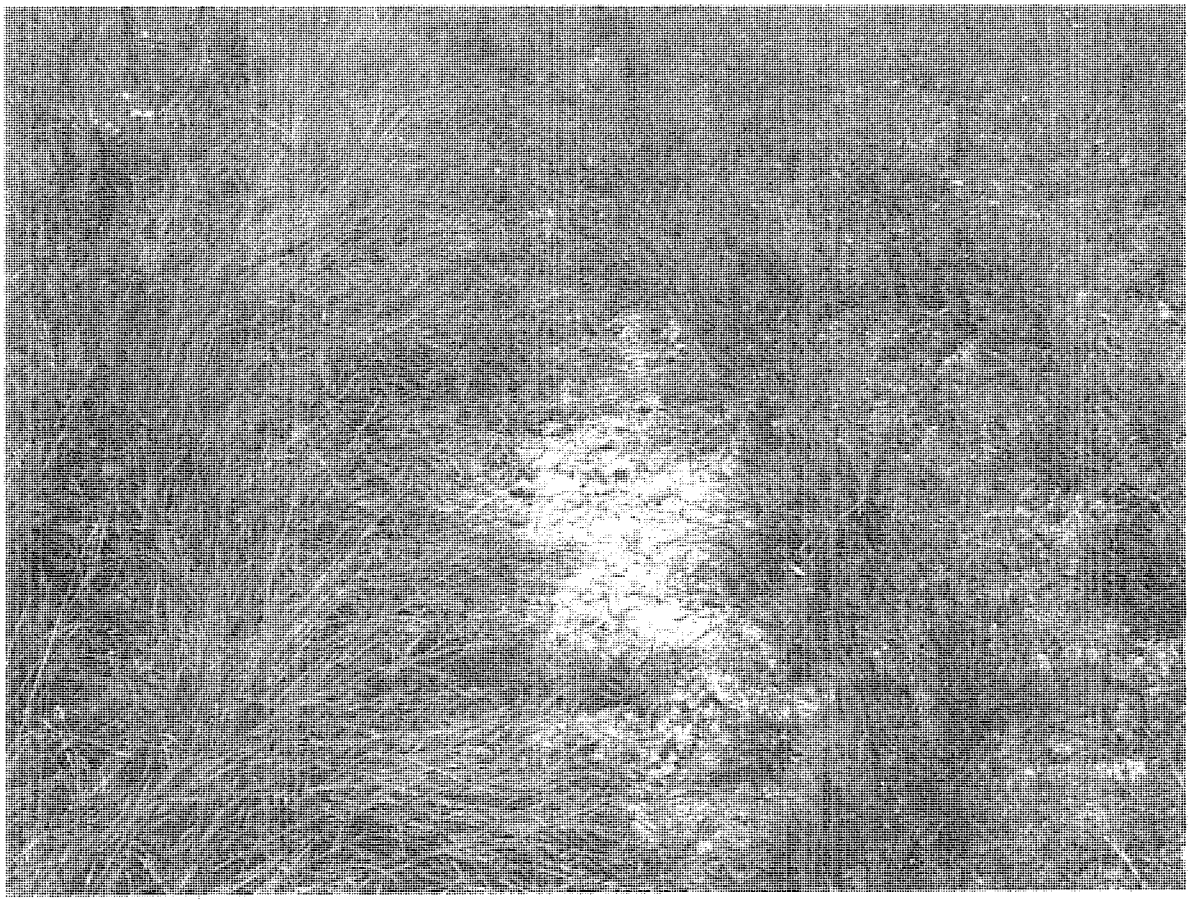
5 Looking west



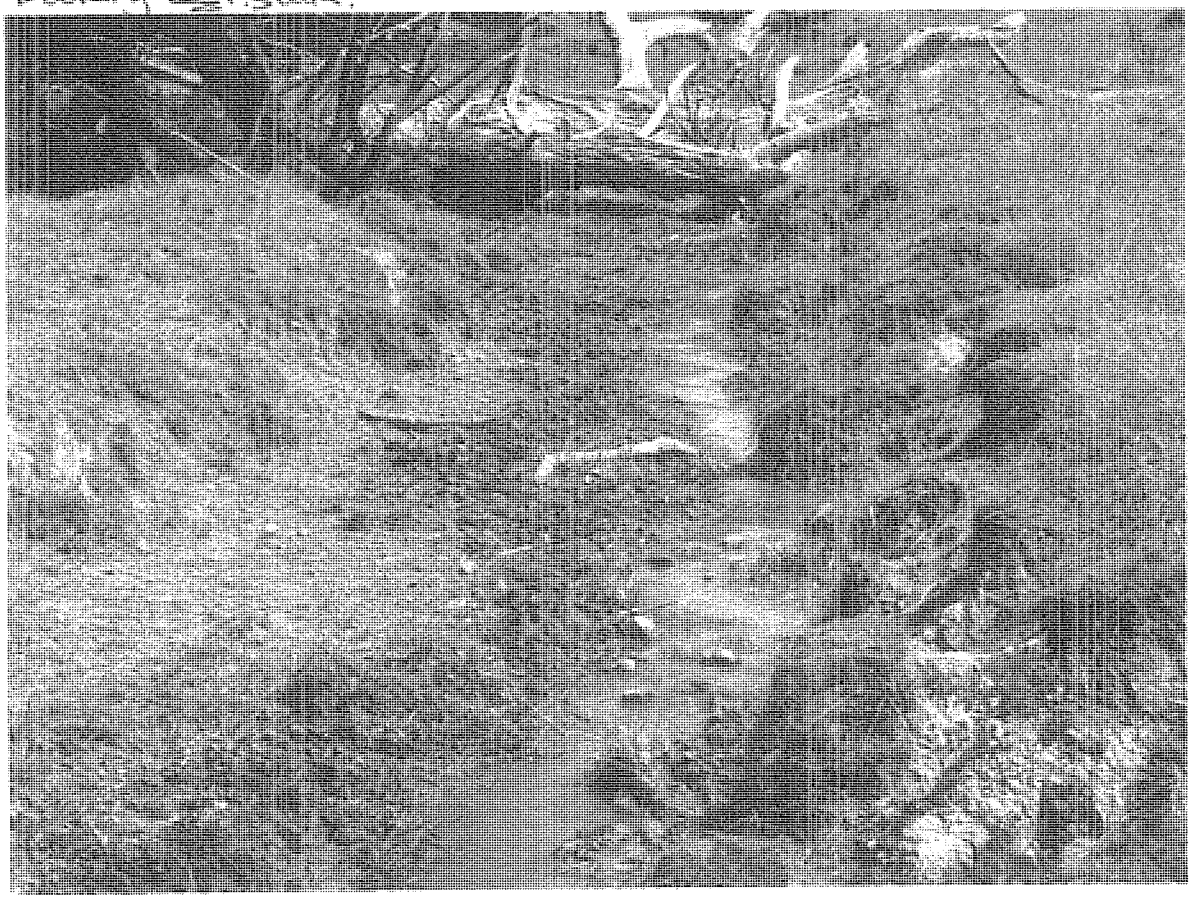
6. Drain looking north.

R. Veaslea.

24 Feb 2019.



4. Looking ~~east~~ south.



3. Looking down.