Appendix E

Cattle Tick Dip Locations Data

DOC1
FILE 3.4

NSW AGRICULTURE
North Coast Region

CATTLE TICK PROGRAM
Wollongbar Agricultural Institute

Phone: (02) 6626 1201
Fax: (02) 6626 1202

FACSMILE MESSAGE

TO: David Caso

FROM: George Nastasi

DATE: 15/4/02 Total Pages: 8

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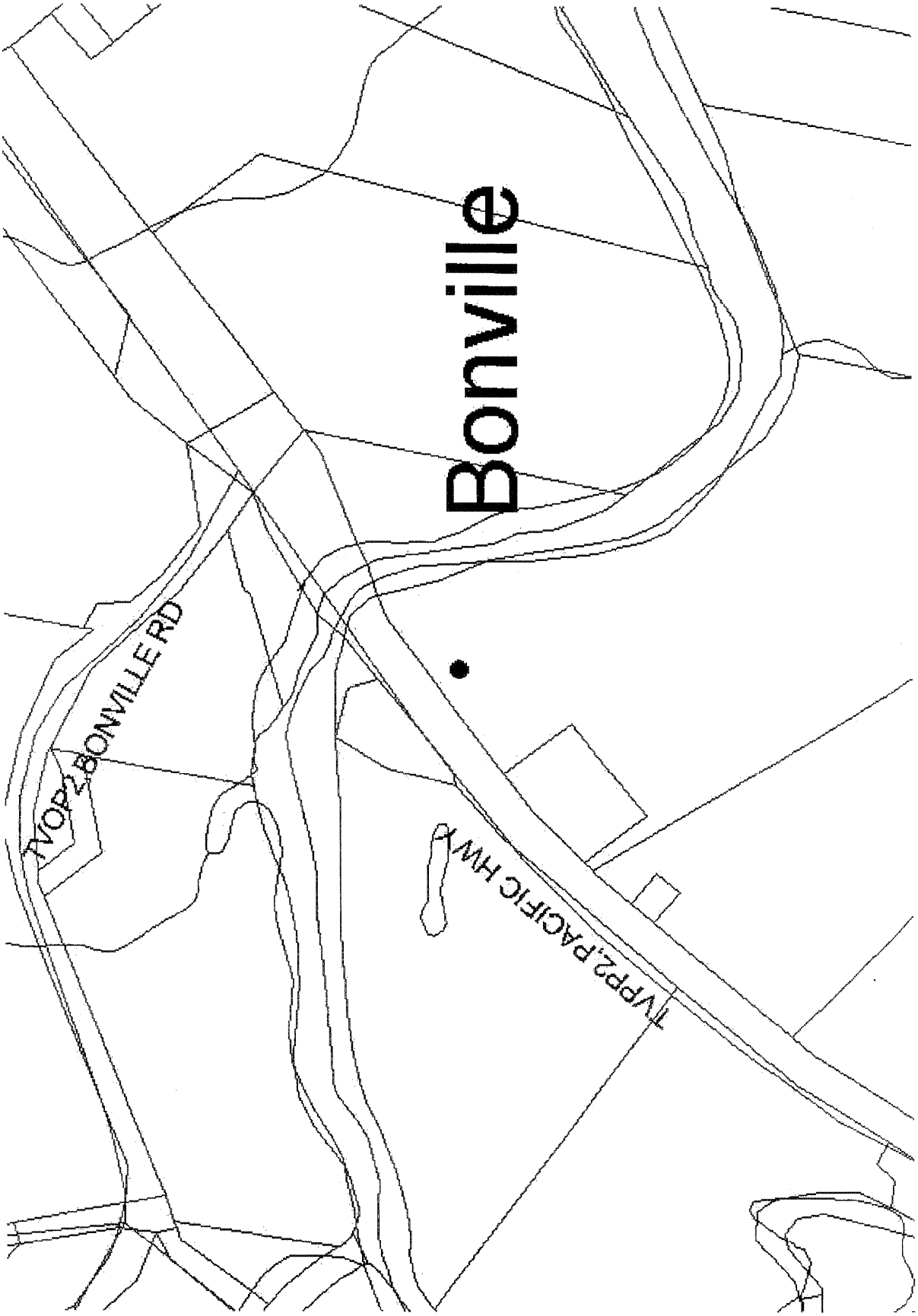
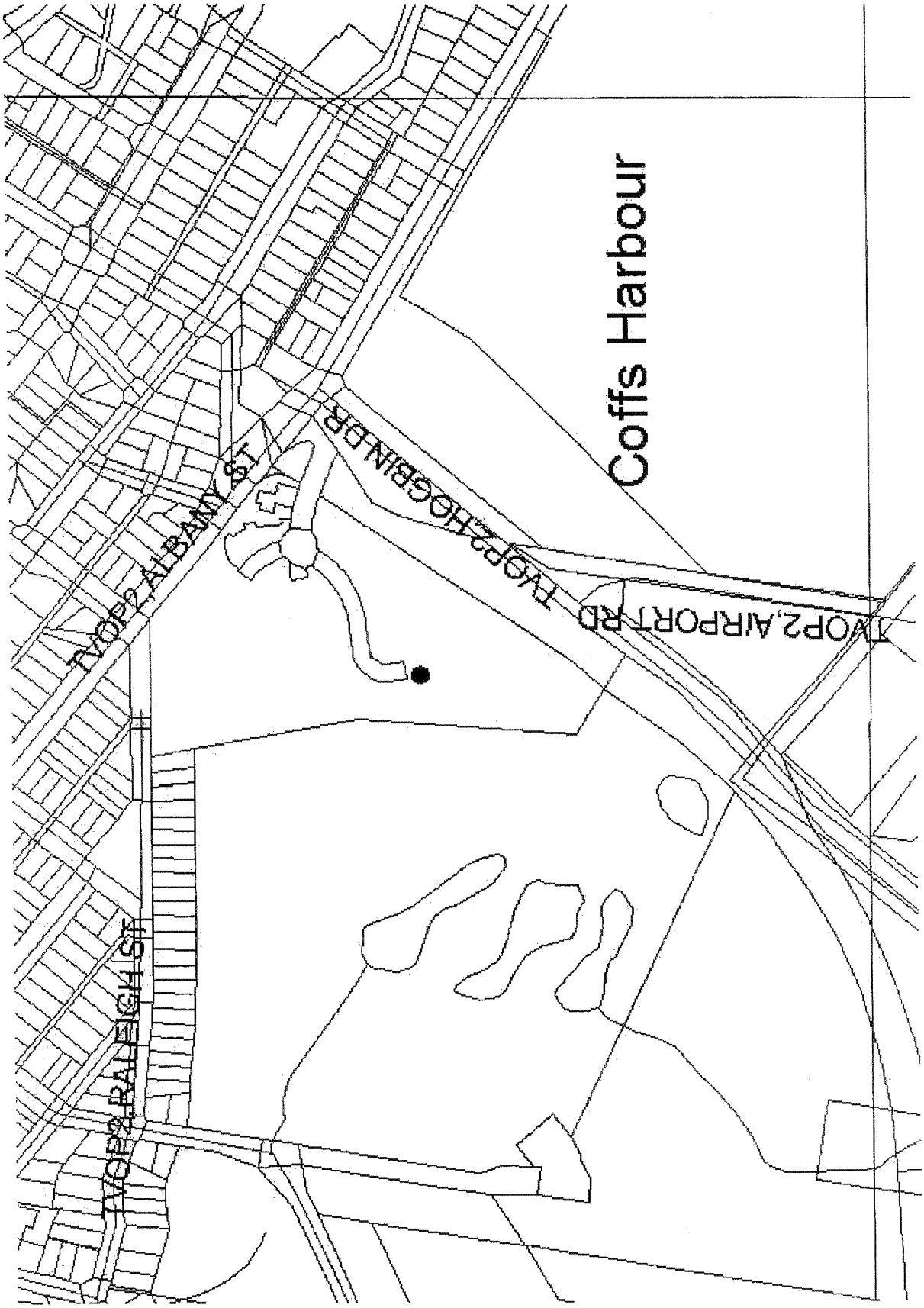
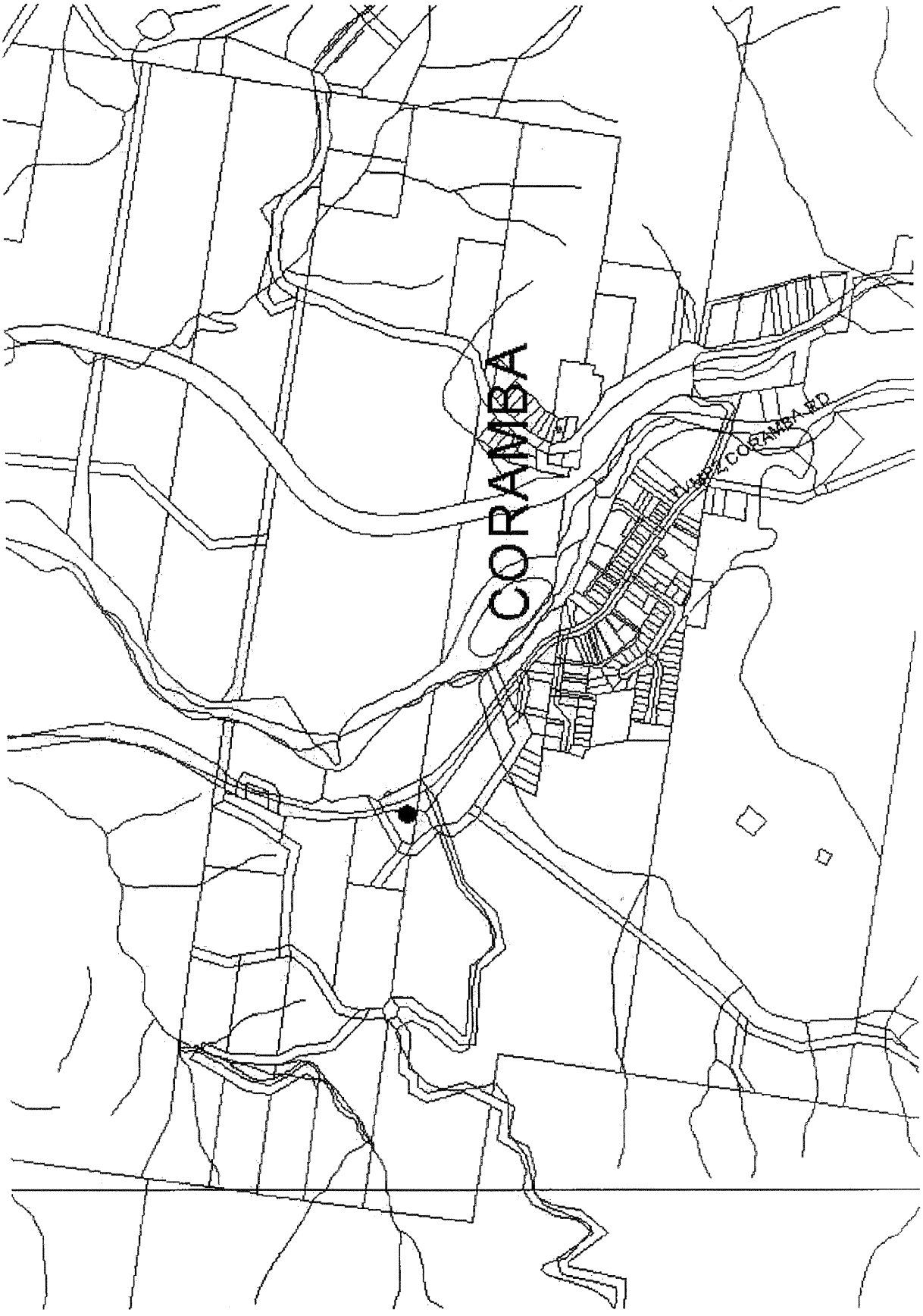
PROJECT / FILE No: 1093.65.LG DOC

Coffs Shire dips


Bonville
RVOP2,BONVILLE RD
TV/PP2,PACIFIC HWY


Coffs Harbour
TVOP2,ALBANY ST
TVOP2,HOGBIN DR
TVOP2,AIRPORT RD
TVOP2,RALEIGH ST


CORAMBA
HARDYS CORAMBA RD

Available information for selected dip.

This report was printed on: **15/04/2002** *The information is valid to:* **15/05/2001**

Dip Name: **CORAMBA** Road: CORAMBA ROAD Town: CORAMBA

Location and status details for this dip.

Map Sheet:	9537-IV-S
Map Zone:	56
Easting:	500800
Northing	6656950

Parish:	COMLAROI
County:	FITZROY
Council:	COFFS HARBOUR

Dip Status:**	DEMOLISH
Land Tenure	GOVERNMENT
Lease Status:	NOT CURRENT
Lease Expiry Date:	
PriorityRanking:	
Zoning:	
Legal Encumbrances:	NONE

Sampling
Soil No Water: No

For further information on samples please contact NSW Agriculture on 0266261201

**Please note: Dip Status current at time of database release - see Valid date."Active" means dipping occurred in past 12 months, "Inactive" means no dipping in that time .To assist in any decisions please call NSW Agriculture on 0266261201 for current status information.

History of chemicals used in this dip.

Chemical	Date Charged
ARSENIC	6/32

The chemical currently being used at this dip is:
NONE

Its trade name is:

Site details for this dip .

Proximity to Housing: NO

Adjacent Land Uses: WILDLIFE RESERVE

Waterway within 100m: No

Soil Type: SANDY LOAM

Warning Signs in Place: No

Site works undertaken at this dip .

Cleanup Commenced: Yes
Cleanup Completed: No Date Completed:

Dip Status: DEMOLISH

Cleanup Details:

Drainage Works:	No		
Dip Fences Removed:	Yes	Highly Contaminated Soil Removed	No
Dip Shed Removed:	Yes	Contaminated Areas Covered:	No
Dip Bath Removed:	No		
Dip Bath Buried:	Yes		

Available information for selected dip.

This report was printed on: **15/04/2002** *The information is valid to:* **15/05/2001**

Dip Name: **COFFS HARBOUR** Road: CR ALBANY & HOGBIN DR Town: CITY HILL, COFFS

Location and status details for this dip.

Map Sheet:	9537-III-N
Map Zone:	56
Easting:	511400
Northing	6647050

Parish:	COFFS HARBOUR
County:	FITZROY
Council:	COFFS HARBOUR

Dip Status:**	DEMOLISH
Land Tenure	LEASED
Lease Status:	NOT CURRENT
Lease Expiry Date:	
PriorityRanking:	
Zoning:	
Legal Encumbrances:	NONE

Sampling
Soil Yes Water: No

For further information on samples please contact NSW Agriculture on 0266261201

**Please note: Dip Status current at time of database release - see Valid date."Active" means dipping occurred in past 12 months, "Inactive" means no dipping in that time .To assist in any decisions please call NSW Agriculture on 0266261201 for current status information.

History of chemicals used in this dip.

Chemical	Date Charged
ARSENIC	1/43

The chemical currently being used at this dip is:
NONE

Its trade name is:

Site details for this dip .

Proximity to Housing: NO

Adjacent Land Uses: INDUSTRIAL

Waterway within 100m: No

Soil Type: LOAMY SAND

Warning Signs in Place: No

Site works undertaken at this dip .

Cleanup Commenced: Yes
Cleanup Completed: No Date Completed:

Dip Status: DEMOLISH

Cleanup Details:

Drainage Works:	No		
Dip Fences Removed:	Yes	Highly Contaminated Soil Removed	No
Dip Shed Removed:	Yes	Contaminated Areas Covered:	No
Dip Bath Removed:	No		
Dip Bath Buried:	Yes		

Available information for selected dip.

This report was printed on: **15/04/2002** *The information is valid to:* **15/05/2001**

Dip Name: **BONVILLE** Road: PACIFIC HIGHWAY Town: BONVILLE

Location and status details for this dip.

Map Sheet:	9537-III-N
Map Zone:	56
Easting:	503730
Northing	6640270

Parish:	BONVILLE
County:	RALEIGH
Council:	COFFS HARBOUR

Dip Status:**	DEMOLISH
Land Tenure	PRIVATE
Lease Status:	NOT CURRENT
Lease Expiry Date:	
PriorityRanking:	
Zoning:	
Legal Encumbrances:	NONE

Sampling

Soil No Water: No

For further information on samples please contact NSW Agriculture on 0266261201

**Please note: Dip Status current at time of database release - see Valid date."Active" means dipping occurred in past 12 months, "Inactive" means no dipping in that time .To assist in any decisions please call NSW Agriculture on 0266261201 for current status information.

History of chemicals used in this dip.

Chemical	Date Charged
ARSENIC	6/34

The chemical currently being used at this dip is:

NONE

Its trade name is:

Site details for this dip .

Proximity to Housing: 50 M

Adjacent Land Uses: RESIDENTIAL

Waterway within 100m: Yes

Soil Type: SILT LOAM

Warning Signs in Place: No

Site works undertaken at this dip .

Cleanup Commenced: Yes

Cleanup Completed: No Date Completed:

Dip Status: DEMOLISH

Cleanup Details:				
	Drainage Works:	No		
	Dip Fences Removed:	Yes	Highly Contaminated Soil Removed	No
	Dip Shed Removed:	Yes	Contaminated Areas Covered:	No
	Dip Bath Removed:	No		
	Dip Bath Buried:	Yes		

Appendix F

Holmes and Holmes PTY Ltd Desk Study Report

HOLMES & HOLMES PTY. LTD.
CHARTERED ENGINEERS (AUSTRALIA)
A.C.N. 001 266 271

P.O. Box J 159, Coffs Harbour Jetty, 2450. Telephone: (066) 53 6457
Laboratory: Rippingale Road, Kororo, 2450.

14th June 2002
(023 959)

COMMENTS ON GEOTECHNICAL CONSIDERATIONS
FOR HIGHWAY ROUTES
FROM SOUTH OF COFFS HARBOUR, TO NORTH OF WOOLGOOLGA

The following comments have been prepared for Connell Wagner as an overview of our local knowledge of this area.

Because of the lack of major civil engineering projects in this area, the knowledge has been accumulated over the last twenty eight years by our involvement in residential buildings and subdivisional work, and site investigations for civil engineering projects such as the airport, water supply, roads and bridges. Such projects have rarely required diamond coring.

The underlying bedrock is a complex of metasediments, some of which have been silicified and formed into very hard beds whilst the majority are deeply weathered and highly fractured claystones and siltstones. The distinctive topographical features of the area reflect the variation in bedrock resistance to erosion, with the steep ridge lines being associated with the more silicified beds.

However, such beds are often discontinuous and soft areas can occur in the ridges.

Low elevation areas of the routes are associated with wetter more swampy terrain. While there are no major waterway crossings, the existing Highway route traverses back swamp terrain associated with aeolian sand dune formations along the coastal fringe. Such areas have a high water table, (often at ground level in a wet period) and require appropriate subgrade preparation. The use of geofabric cloth and rock stabilization is generally required to allow fill to be placed.

Creek crossings in the foothills are less problematic, although there is frequently a two to three metre deep poorly consolidated layer of erosion debris of gravel and clay in the bed.

Geotechnical Considerations
Highway Routes, Coffs Harbour

1) Stability

There is considered to be a low risk of slope instability associated with natural slopes in the area.

Landslides and slips are invariably associated with surface disturbance due to man-made works, including land clearing. Such instability is usually in the form of translational surface slips and erosion debris slides.

Observation of road cuttings in the area indicates that batters of one vertical to one-and-a-half horizontal are generally stable, although minor 'settling in' slumping can be expected.

Where the silicified sediments are encountered, steeper batters can be used, but weaker beds within such sediments if present, can be expected to cause problems with stability, particularly if they act as aquifers for ground water.

2) Chemical Residue Testing of Former Bananalands

The proposed routes will cross former bananalands and the necesssary testing for arsenic, lead, organochlorines and organophosphates may be required.

Coffs Harbour City Council has Plans indicating former banana plantation areas which could be contaminated with chemicals.

It would seem that the risk to the environment and humans is very minimal if the topsoil is to be retained within the road reserve, and testing could be unnecessary. This should be ascertained with Council and the E.P.A. If the topsoil is to be removed and used elsewhere, then testing should be undertaken.

The attached copy of threshold levels from the E.P.A. "Guidelines for N.S.W. Site Auditors" indicates the appropriate residue threshold levels. We consider that Column 4 is appropriate for work within the road reserve, whereas Column 1 should be used as a precautionary measure if soil is to be sent off site.

Geotechnical Considerations
Highway Routes, Coffs Harbour

From our experience in the Coffs Harbour area since 1992 when testing was first undertaken, low level arsenic contamination is widespread across older plantations. However levels rarely exceed 200 p.p.m. Because of the variability in application, the stripping and stockpiling of topsoil (as would be expected in large scale earthworks) and subsequent re-spreading will ensure adequate mixing and dilution of the arsenic.

Identifiable packing shed locations represent locations likely to be significantly more highly contaminated, and soil from these areas should be tested. Again, considering the extent of the earthworks on this type of project, remediation by mixing and dilution with the surrounding topsoil should be possible where necessary.

It is not expected that the problem of chemical contamination will play a significant role in the route selection, although the cost of testing (if required) should not be overlooked, currently about $1600 / Ha.

3) Acid Sulphate Soils

The soil conservation Maps of the area indicate that the low lying (below R.L. 10) estuarine creek lines have the potential to provide acid sulphate soils, with varying likelihood of occurrence. This will affect the upgrading of the existing Highway more than the alternative routes further from the coast.

From the limited testing carried out in this area, it is expected that significant problems will not be encountered. Generally the likely occurrence will be over relatively short lengths. Because of the topography such areas will have to be filled to provide a stable pavement foundation.

Problems will therefore be limited to dealing with the potential acid generation in the surface layer. This tends to be of low significance since the natural cycle of wet and dry in this layer has, over time, completed the oxidization and already leeched out the acid.

Where encountered, it is expected that acid forming soils will be able to be neutralised with 5 kg to 10 kg of lime per tonne, with the usual precautions being taken to prevent runoff from stockpiles entering waterways before neutralisation can be achieved.

It is not expected that the problem of acid sulphate soils will play a significant role in the route selection.

EPA "Guidelines for the NSW Site Auditor Scheme."

SOIL INVESTIGATION LEVELS FOR

Substance	Health-based investigation levels[1] (mg/kg)				Provisional phytotoxicity-based investigation levels[4] for sandy loams pH 6-8 (mg/kg)
	Residential with gardens and accessible soil (home-grown produce contributing less than 10% fruit and vegetable intake; no poultry), including children's day-care centres, preschools and primary schools, or town houses or villas (NEHF A)	Residential with minimal access to soil including high-rise apartments and flats (NEHF D)	Parks, recreational open space, playing fields including secondary schools (NEHF E)	Commercial or industrial (NEHF F)	
	Column 1	Column 2	Column 3	Column 4	Column 5
Aldrin + Dieldrin	10	40	20	50	–
Arsenic (total)	100	400	200	500	20
Benzo(a)pyrene	1	4	2	5	–
Beryllium	20	80	40	100	–
Cadmium	20	80	40	100	3
Chlordane	50	200	100	250	–
Chromium (III)[2]	12%	48%	24%	60%	400
Chromium (VI)	100	400	200	500	1
Copper	1000	4000	2000	5000	100
Cyanides (complex)	500	2000	1000	2500	–
DDT	200	800	400	1000	–
Heptachlor	10	40	20	50	–
Lead	300	1200	600	1500	600
Manganese	1500	6000	3000	7500	–
Methyl mercury	10	40	20	50	–
Mercury (inorganic)	15	60	30	75	1[3]
Nickel	600	2400	600	3000	60
PAHs (total)	20	80	40	100	–
PCBs (total)	10	40	20	50	–
Phenol[3]	8500	34000	17000	42500	70
Zinc	7000	28000	14000	35000	200

Job No	No	As	Pb	DCs	Remarks	
1101	1	17	11	0.01	4pt composites	CH
1102	2	9.9	12	0.01	4pt composite	CH
1117	3	28	11	0.02	4pt composites in bananas	W
1220	4A	7.0	10	<0.02	5pt composites	W
	4B	9.0	10	<0.02	"	W
	4C	3.9	10	<0.02	"	W
	4D	7.2	16	<0.02	"	W
	4E	8.4	10	<0.02	" house site not used	W
	4F	140	7	0.10	5pt. composites in bananas	W
	4G	79	12	0.07	" in bananas	W
1243	5	41	13	<0.02	individual	W
1392 / 3788	6	19	14	3.7	individual } NEW Ag found As 72 Pb 8	W
	7	33	14	<0.02	4pt composite }	W
Bennetts Rd	1409 off map	140	26	0.31	individual remediated	CH
1647	8	5.5	19	<0.02	5pt. composites	CH
1664	9	26	24	<0.02	"	CH
	10	7.5	29	<0.02	"	CH
1711	11	28	10	<0.02	"	W
1735	12	6	24	0.13	4pt composites	W
1765	13	17	42	0.49	5pt composites	W
1766	14	8	13	0.45	5pt composites	W
1863	15	50	12	0.2	individual	W
1865	16	12	20	0.14	4pt composites	CH
	17	39	30	0.96	"	CH
	18	29	35	0.12	"	CH
1877	19	120	17	0.03	individual remediated	W
1890	20	12	14	<0.02	5pt composites	W
1928	21	8.5	49	<0.02	5pt composites	W
2026	22	42	43	<0.02	individual samples	W
2067	23	22	18	0.30	5pt composites	W
2346	24	36	140	5.2	individuals	CH
Nth Boundary Rd 2375	off map	58	26	0.10	individuals	CH
2457	25	44	35	0.07	individuals	W
2557	26	6	16	<0.02	5pt composites	CH

Job No	No	As	Pb	DCs	Remarks	
2719	27	93	14	<0.2	individual sample	W
2745	28	19	17	<0.02	5pt composites	W
2857	29	19	18	0.04	5pt composites	W
2912	30	28	17	0.02	5pt composites	W
2992	31	5	12	<0.02	5pt composites	W
3000	32	78	21	0.06	individual	CH
	33	7	74	0.02	5pt composites	CH
3022	34	28	21	<0.02	5pt composites	CH
3200	35	175	66	0.11	individuals	CH
	36	6	26	0.74	4pt composites	CH
	37	42	33	0.26	4pt composites	CH
3223	38	90	24	<0.02	individual	W
3224	39	12	35	<0.02	4pt composites	W
3271	40	16	15	<0.02	5pt composite	W
3284	41	not tested		0.08	5pt composite	CH
3313	42	14	15	<0.02	5pt composite	W
3355	43	6.0	17	<0.02	5pt composite	W
3362	44	4.0	17	<0.02	5pt composite	W
3424	45	165	20	<0.02	individual remediated	W
3455	46	6	17	<0.02	4pt composites	W
	47	7½	18	<0.02	—" —	W
3491	48	120	27	<0.02	individual	W
3513	49	92	41	0.26	4pt composites & individuals	CH
3523	50	20	10	<0.02	4pt composites	W
3532	51	13	14	<0.02	4pt composite	CH
3534	52	7	15	0.08	4pt composite	W
3572	53	4.5	15	0.05	"	W
3577	54	170	34	0.35	"	CH
3614	55	54	25	0.11	individuals	CH
3621	56	160	17	0.32	"	CH
3666	57	46	50	<0.02	4pt composites	W