

In the Land Court

Land Court Nos.:

MRA428-14, EPA429-14

MRA430-14, EPA431-14

MRA432-14, EPA433-14

Held at: Brisbane

Between: Adani Mining Pty Ltd Applicant

And: Land Services of Coast and Country Inc. First Respondent

And: Conservation Action Trust Second Respondent

And: Chief Executive, Department of Environment and Heritage Protection Statutory Party



Frontispiece: Inflorescences of 3 of the “Eight” species discussed herein. Clockwise from top left: *Themeda triandra*, *Alloteropsis semialata* and *Dichanthium sericeum*

Privileged and Confidential: Prepared for the purpose of the Queensland Land Court objection hearing to the Carmichael Coal Mine

**Statement of evidence prepared for the
Land Court of Queensland**

**Prepared by Dr Michael Olsen,
Landscape Assessment, Management and Rehabilitation Pty Ltd,
March 2015**

INTRODUCTION

1. I have been instructed on behalf of the First Respondent, Land Services of Coast and Country Inc. (**LSCC**), to provide expert evidence to the Land Court on fauna issues (specifically related to Black-throated Finch southern subspecies (*Poephila cincta cincta*). Attachment 6 to this report is a copy of my letter of instructions.

STATEMENT TO THE COURT

2. The attached Curriculum Vitae (Attachment 5) is provided to indicate my qualifications and expertise in the matters discussed.
3. *Land Court Rules 2000 and Rules 426, 428 and 429b of the Uniform Civil Procedure Rules 1999* have been read and understood for the purpose of the preparation of this report, which is to be supplied as an expert report to the Land Court of Queensland.

MY QUALIFICATIONS

4. My qualifications and experiences are outlined in the attached Curriculum Vitae (Attachment 5). I have a Science Degree majoring in Botany and Zoology, with a First Class Honours Degree and a PhD in Botany. More than 4 decades of field experience in Queensland, Australia, the Southwest Pacific and South-East Asia have complemented these formal qualifications.

MY OPINION

5. The main issue of disagreement regarding the Poaceae (one of the three critical habitat components of the globally significant population of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*) (BTF)) of the proposed mine and offset areas, remains the lack of data on why the birds are present within the mine footprint at such densities. Linked to that is the lack of data or science based rationale for the offset areas providing the equivalent habitat such that the birds will somehow move into these areas once their existing known habitat is destroyed beneath the mine footprint.

6. Even if the data from the simplistic list of “eight” (DEWHA, 2009¹) (*Urochloa mosambicensis*, *Enteropogon acicularis*, *Panicum decompositum*, *Panicum effusum*, *Dichanthium sericeum*, *Alloteropsis semialata*, *Eragrostis sororia* and *Themeda triandra*) is reviewed, the inadequacy of that data is clear. One species (*Urochloa mosambicensis*) was not recorded at all. The only data provided² for the proposed mine area, suggests that the “correlation” between BTF feeding habitat across the entire mine footprint remains indeterminate and based on only a sample size of only 13 ha.

7. If we assume that there is at least one tussock of the recorded taxa in each of the 0.5 ha ecological equivalence plots, then there are records of only:
 - 12 tussocks of *Alloteropsis semialata* in 6 ha;
 - 4 tussocks of *Dichanthium sericeum* in 2 ha;
 - 4 tussocks of *Enteropogon acicularis* in 2 ha;
 - 5 tussocks of *Eragrostis sororia* 2.5 ha;
 - 5 tussocks of *Panicum decompositum* in 2.5 ha;
 - 1 tussock of *Panicum effusum* in 0.5 ha; and
 - 9 tussocks of *Themeda triandra* in 4.5 ha.

8. Species presence/absence data such as this can provide no information on population or structure that may be critical factors for BTF feeding habitat assessments.

9. In addition to highlighting the inadequacies of the applied methodology for assessing the feeding habitat of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*), this provides no confidence whatsoever that the impact could ever have been adequately assessed on the basis of this limited data. The known distribution of the “eight” (DEWHA, 2009³)

¹ DEWHA (2009) Significant impact guidelines for the endangered black-throated finch (southern) (*Poephila cincta cincta*). National threatened species and ecological communities. Background paper to the EPBC Act policy statement 3.13. Australian Government, Canberra.

² BTF EE Data Carmichael Mine excel spreadsheet supplied by email from McCullough Robertson 13th February 2015 – See Attachment 2).

³ DEWHA (2009) Significant impact guidelines for the endangered black-throated finch (southern) (*Poephila cincta cincta*). National threatened species and ecological communities. Background paper to the EPBC Act policy statement 3.13. Australian Government, Canberra.

(Attachment 4A) makes it abundantly clear that presence/absence data for this limited range of taxa provides little, if any, relevant data.

10. The feeding habitat of the globally significant population of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*) beneath the footprint of the proposed mine remains unknown. Even if the knowledge base were expanded utilising the known food species (Attachment 2, 2nd JER), this would result in highlighting the inadequacy of the approach and methodology rather than providing the critical correlations between food resources and BTF presence on the proposed mine site. This is again highlighted given the known distribution of these additional species (Attachment 4B).

11. It is not the simplistic presence/absence of these taxa of Poaceae that accounts for the globally significant population of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*) beneath the footprint of the proposed mine. It is a unique correlation of factors at the sites they are currently known from that is still unknown.

12. Further, the issue regarding the offset areas is compounded by an even more miniscule data set. For the 8 plots across the entire offset area, it is possible that if we assume that there is at least one tussock of the recorded taxa in each of the 0.5 ha ecological equivalence plots, then there are records of only:

- 3 tussocks of *Alloteropsis semialata* in 1.5 ha;
- 1 tussock of *Enteropogon acicularis* in 0.5 ha;
- 7 tussocks of *Eragrostis sororia*⁴ in 3.5 ha;
- 4 tussocks of *Panicum decompositum* in 2 ha; and
- 9 tussocks of *Themeda triandra* in 4.5 ha.

13. In addition, there is no data or science presented that would yield any confidence that the globally significant population of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*) known from the mine

⁴ See spelt *Eragrostis sororia* in BTF EE Data Moray Downs West excel spreadsheet supplied by email from McCullough Robertson 13th February 2015 – See Attachment 3).

footprint would actually move into these areas once their existing known habitat is destroyed beneath the proposed mine footprint.

CONCLUSION

14. In conclusion, even with the recently supplied data for the 2nd JER, there can be no confidence that the critical food resource for the globally significant population of the southern subspecies of Black-throated Finch (*Poephila cincta cincta*) known from the mine footprint has been adequately defined or identified. This, combined with the uncertainty regarding the same features across the proposed offset areas, and the unknown “incentive” that would move the existing populations into the offset areas, provide a complete lack of confidence that sufficient knowledge exists of either the extant populations or the correlations to their critical habitat or these same factors across the proposed offset areas.

Attachment 1 – Statement to the Court

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MRA428-14, EPA429-14
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Held at: **Brisbane**

Between:	Adani Mining Pty Ltd	Applicant
And:	Land Services of Coast and Country	First Respondent
And:	Conservation Action Trust	Second Respondent
And:	Chief Executive, Department of Environment and Heritage Protection	Statutory Party

EXPERT'S STATEMENT – ADDITIONAL FACTS


I am not aware of any further readily ascertainable additional facts that would assist me to reach a more reliable conclusion.

DECLARATION

In accordance with rule 24F(3) of the *Land Court Rules 2000* (Qld), I confirm the following:

- (a) the factual matters stated in the report are, as far as I know, true;
- (b) I have made all enquiries considered appropriate;
- (c) the opinions stated in the report are genuinely held by myself;
- (d) the report contains reference to all matters I consider significant;
- (e) I understand the duty of an expert to the court and have complied with that duty;
- (f) I have read and understood the *Land Court Rules 2000* on expert evidence; and
- (g) I have not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.

Signature:



Name: Dr Michael Olsen
Date: 15/03/15



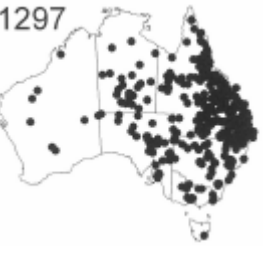
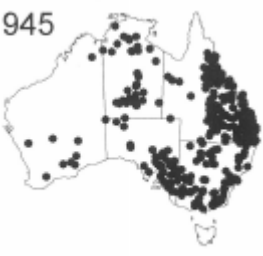
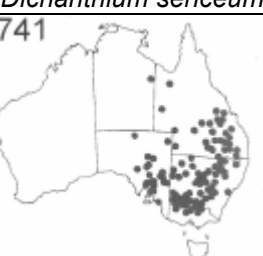
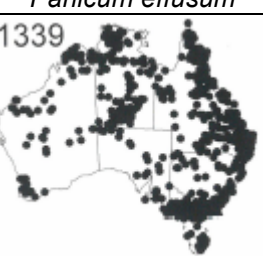
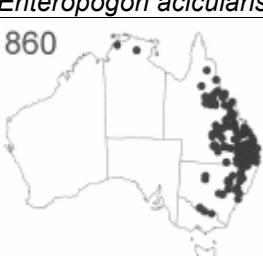
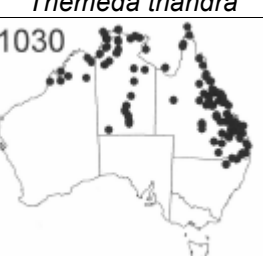
Attachment 2 - BTF EE Data Carmichael Mine

BTF habitat	SurveySite	EE site	AU scores	EC_rank	CreationDate	Key_grass1	Key_grass2	Key_grass3	Key_grass4	Key_grass5	Key_grass6	Key_grass7	Key_grass8	Grass-score	Water score	Water score	Comment	Pest_spec1	Pest_spec2	Comment2	Photo1	Photo2	Photo3	Rcvr_Type	Horz_Prec	FINALRE_1	MAPPED_RE	GENERAL_1	longitude	latitude	Username
y	1	EE10	1	70	4	11/12/13								0	Absent	0				N/A				GeoXH 6000	0.3	10.7.5	10.7.5	Eucalyptus thozetiana woodland	146.3465449100	-22.0462602930	Brad Dreis
y	2	EE1	2	71.5	4	13/12/13	Enteropogon acicularis	Alloteropsis semialata						2	Present	1	ephemeral drainage line	Absent		N/A				GeoXH 6000	0.3	10.3.13a	10.3.13a	Eucalyptus camaldulensis riparian woodland	146.45759142600	-22.1493735970	Brad Dreis
y	3	EE11	2	66.5	3	13/12/13	Alloteropsis semialata	Eragrostis sororia						2	Absent	0		Absent						GeoXH 6000	0.5	10.3.13a	10.3.13a	E.camaldulensis open woodland with sparse grassy ground layer	146.41040104300	-22.15794596690	Bruce Wilson
y	7	EE12	2	43.5	1	12/12/13								0	Present	1	watercourse within community	Absent		N/A				GeoXH 6000	0.4	10.3.14a	10.3.14a	E. coolabah and A. cambagei open forest	146.42952066700	-22.10959606070	Liz Fisher
y	4	EE2	2	48.5	1	11/12/13								0	Present	1		Absent		N/A				GeoXH 6008	0.2	10.3.13a	10.3.13a	E. camaldulensis riverine open-forest	146.36535282200	-21.99564824730	Liz Fisher
y	31	EE31	2	73	4	12/12/13	Enteropogon acicularis	Panicum decompositum	Themeda triandra	Eragrostis sororia				4	Present	1	river adjacent	Absent		N/A				GeoXH 6021	0.6	10.3.13a	10.3.13a	Eucalyptus camaldulensis riparian woodland	146.36348583400	-22.10737995170	Brad Dreis
y	32	EE32	2	70.5	4	12/12/13	Panicum decompositum	Themeda triandra						2	Present	1	river - adjacent	Absent		N/A				GeoXH 6022	0.7	10.3.13a	10.3.13a	Eucalyptus camaldulensis riparian open-forest	146.39677267900	-22.10556253550	Brad Dreis
y	33	EE33	2	86	5	14/12/13	Panicum decompositum	Themeda triandra						2	Present	1	river adjacent	Absent		N/A				GeoXH 6023	0.9	11.3.25	11.3.25	Eucalyptus camaldulensis riparian woodland	146.44836293500	-22.08225649900	Brad Dreis
y	34	EE34	2	68.5	3	12/12/13								0	Present	1	river watercourse	Absent		N/A				GeoXH 6024	0.5	10.3.13a	10.3.13a	E. camaldulensis and M. leucadendra open forest	146.42856781100	-22.09784730370	Liz Fisher
y	46	EE45	2	54	2	12/12/13	Dichanthium sericeum							1	Present	1		Absent		N/A				GeoXH 6036	0.3	10.3.14a	10.3.14a	E. coolabah and E. camaldulensis open forest	146.41475036400	-22.10638993230	Liz Fisher
y	46a	EE50	2	69.5	2	12/12/13	Panicum decompositum							1	Present	1	ephemeral drainage line - 0m	Absent		N/A				GeoXH 6042	0.6	10.3.14a	10.3.14a	Eucalyptus camaldulensis and coolabah riparian woodland	146.41485252800	-22.10677771530	Brad Dreis
y	5	EE3	3	53	2	12/12/13									Present	1		Absent						GeoXH 6019	0.4	11.3.3c	11.3.3c	E. coolabah with Eleocharis in closed depression	146.37992386700	-22.09378949520	Bruce Wilson
y	6	EE4	3	59.5	2	14/12/13	Alloteropsis semialata							1	Absent	0		Absent						GeoXH 6030	0.3	11.3.3c	11.3.3c	Eucalyptus coolabah palustrine wetland	146.43716701000	-22.08563133820	Brad Dreis
y	45	EE9	3	60.5	3	12/12/13	Dichanthium sericeum	Eragrostis sororia						2	Present	1	ephemeral wetland	Absent		N/A				GeoXH 6046	0.4	11.3.3c	11.3.3c	E. coolabah open forest	146.39027294000	-22.08163159300	Liz Fisher
y	8	EE13	4	61.5	3	12/12/13								0	Absent	0		Absent						GeoXH 6001	0.3	10.5.5a	10.5.5a	E. melanophloia woodland	146.26039300000	-21.92448300000	Liz Fisher
y	10	EE14	4	59.5	2	10/12/13	Themeda triandra							1	Absent	0		Absent						GeoXH 6002	0.2	10.5.5a	10.5.5a/10.3.6ax1	E. melanophloia woodland	146.24060251900	-21.93633811360	Liz Fisher
y	11	EE15	4	53.5	2	12/12/13	Alloteropsis semialata	Themeda triandra						2	Absent	0		Absent		N/A				GeoXH 6003	0.8	10.5.5a	10.5.5a/10.3.6ax1	E. melanophloia woodland	146.38308092100	-22.14126988680	Liz Fisher
y	12	EE16	4	67	3	14/12/13	Alloteropsis semialata							1	Absent	0		Absent		N/A				GeoXH 6004	0.3	10.5.5a	10.5.5a/10.3.6ax1	E. melanophloia woodland	146.42427690000	-22.22719470060	Bruce Wilson
y	13	EE17	4	61	3	10/12/13	Alloteropsis semialata	Dichanthium sericeum						2	Absent	0		Absent						GeoXH 6005	0.4	10.5.5a	10.5.5a/10.3.6ax1	E. melanophloia woodland	146.29689436300	-21.95898535470	Liz Fisher
y	14	EE18	4	75.5	4	11/12/13	Dichanthium sericeum	Themeda triandra						2	Absent	0		Absent		N/A				GeoXH 6006	0.7	10.3.6ax1	10.5.5a/10.3.6ax1	E. brownii woodland	146.35998946300	-21.98747240220	Liz Fisher
y	15	EE19	4	62.5	3	11/12/13	Themeda triandra	Alloteropsis semialata	Panicum decompositum					3	Absent	0		Absent		N/A				GeoXH 6007	0.4	10.3.6ax1	10.5.5a/10.3.6ax1	Eucalyptus brownii woodland	146.32294493300	-21.99266181820	Brad Dreis
y	16	EE20	4	71	4	13/12/13	Alloteropsis semialata	Eragrostis sororia						2	Absent	0		Absent						GeoXH 6009	0.3	10.3.6ax1	10.5.5a/10.3.6ax1	eucalyptus brownii woodland	146.43306305200	-22.18715367090	Bruce Wilson
y	17	EE21	4	69	3	13/12/13	Themeda triandra	Alloteropsis semialata			Alloteropsis semialata			3	Absent	0		Absent						GeoXH 6010	0.6	10.5.5a	10.5.5a/10.3.6ax1	E.melanophloia Woodland With Grassy ground LA+	146.41525253400	-22.14760411010	Bruce Wilson
y	18	EE22	5	67	3	13/12/13	Alloteropsis semialata							1	Absent	0		Absent						GeoXH 6011	0.6	10.5.1a	10.5.1a/10.5.1d	E.similis open woodland with sparse Triodia Grassy ground LA+	146.40997480200	-22.18302959000	Bruce Wilson
y	19	EE23	5	77	4	13/12/13	Alloteropsis semialata							1	Absent	0		Absent		N/A				GeoXH 6012	0.4	10.5.1d	10.5.1a/10.5.1d	C.setosa IOW with Triodia ground	146.37419160400	-22.14301567980	Bruce Wilson


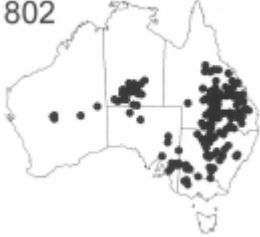


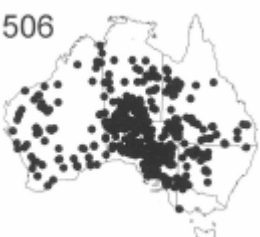

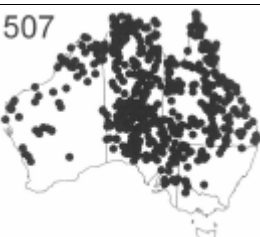
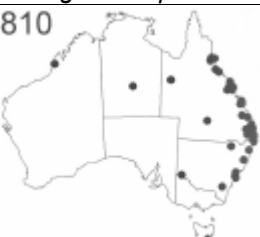


Attachment 3 - BTF EE Data Moray Down West








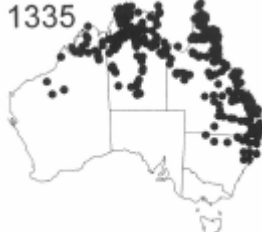

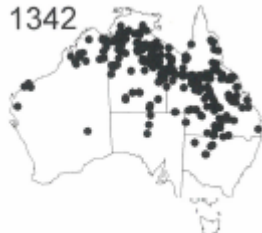


SurveySite	Username	User_Name	CreationDate	Time	Key_grass_1	Key_grass2	Key_grass3	Key_grass4	Key_grass5	Key_grass6	Key_grass7	Key_grass8	Water	Comment	Pest_spec1	Pest_spec2	Comment2	Photo_1	Direction_1	Comment3	Photo_2	Direction2	Comment4	GPS_Date	GPS_Time	GNSS_Heigh	Vert_Prec	Horz_Prec	Northing	Easting
BTF1	Brad Dreis		9/09/14	07:31:18am	Themeda triandra	Erragrostis sororia							Absent		Absent		flock of 20 birds							9/09/14	07:31:19am	308.385	6.0	5.0	7581619.402	429007.599
BTF2	Brad Dreis		9/09/14	03:32:21pm	Themeda triandra								Absent		Absent		Heavily grazed							9/09/14	03:32:22pm	377.197	8.7	4.7	7578576.352	413037.678
BTF3	Brad Dreis		10/09/14	10:27:44am	Panicum decompositum	Themeda triandra	Erragrostis sororia						Absent		Absent		Proximity to dam							10/09/14	10:27:45am	304.316	5.9	3.9	7578675.820	428635.194
BTF4	Brad Dreis		10/09/14	10:46:26am	Themeda triandra	Erragrostis sororia							Present	Ephemeral creek 10m	Absent		N/A							10/09/14	10:46:27am	296.597	5.9	3.8	7580543.220	431071.924
BTF5	Brad Dreis		11/09/14	11:19:10am	Themeda triandra	Erragrostis sororia	Alloterospis semialata						Present	Ephemeral gilgais 200m	Absent		N/A							11/09/14	11:19:11am	292.923	6.2	3.9	7576807.684	438075.023
BTF6	Brad Dreis		11/09/14	02:11:40pm	Themeda triandra	Erragrostis sororia	Panicum decompositum						Present	Ephemeral drainage line	Absent		N/A							11/09/14	02:11:40pm	288.282	6.6	4.3	7576548.290	435400.472
BTF7	Brad Dreis		12/09/14	07:24:28am	Panicum decompositum	Alloterospis semialata	Themeda triandra						Absent		Absent		N/A							12/09/14	07:24:29am	370.617	4.1	3.0	7577589.103	420066.587
BTF8	Brad Dreis		12/09/14	09:32:05am	Themeda triandra	Erragrostis sororia	Panicum decompositum						Present	Ephemeral drainage line	Absent		N/A							12/09/14	09:32:06am	330.252	12.3	5.8	7566226.345	421257.577
BTF9	Brad Dreis		12/09/14	10:10:42am	Themeda triandra	Erragrostis sororia							Absent		Absent		N/A							12/09/14	10:10:43am	361.191	6.2	4.0	7568652.769	423710.291
Mel springs	Brad Dreis		13/09/14	01:14:18pm	Alloterospis semialata								Present	Spring 1km	Absent		10.5.2a mostly Aristida							13/09/14	01:14:19pm	280.147	7.3	4.2	7539100.980	445707.327
Mel spring 2	Brad Dreis		13/09/14	01:26:10pm	Enteropogon acicularis								Present	Spring 1km	Absent		10.3.6ax1 mostly Aristida							13/09/14	01:26:11pm	282.569	7.3	4.3	7538668.798	444918.718



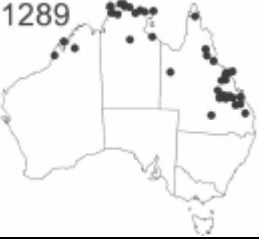
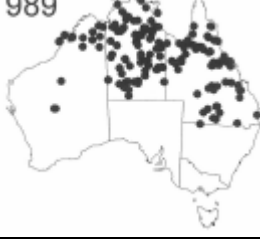
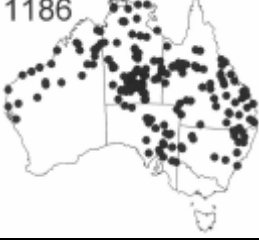
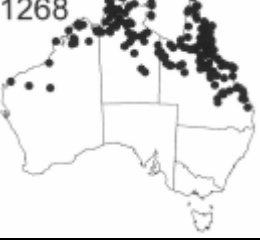


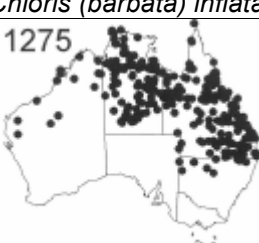

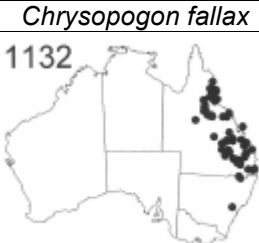
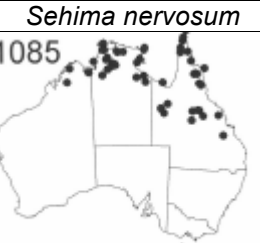
**ATTACHMENT 4A – DISTRIBUTION OF THE “EIGHT”
 (Flora of Australia Vol. 43. 2002) * denotes introduced species.**

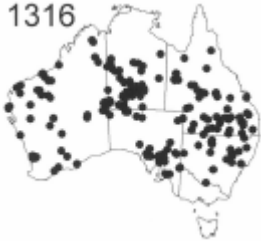
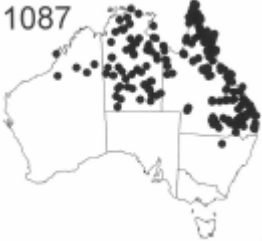




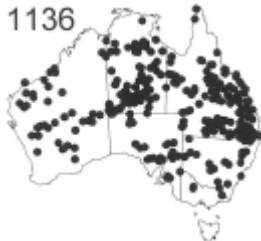

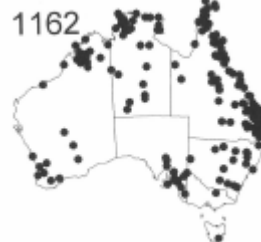



<p>1099</p> 	<p>929</p> 
<p><i>Alloteropsis semialata</i></p>	<p><i>Panicum decompositum</i></p>
<p>1297</p> 	<p>945</p> 
<p><i>Dichanthium sericeum</i></p>	<p><i>Panicum effusum</i></p>
<p>741</p> 	<p>1339</p> 
<p><i>Enteropogon acicularis</i></p>	<p><i>Themeda triandra</i></p>
<p>860</p> 	<p>1030</p> 
<p><i>Eragrostis sororia</i></p>	<p><i>Urochloa mosambicensis</i> *</p>

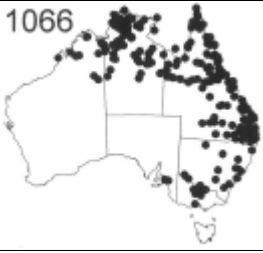
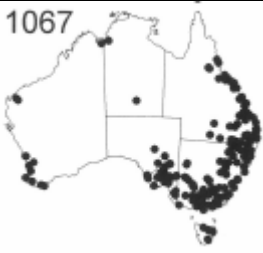
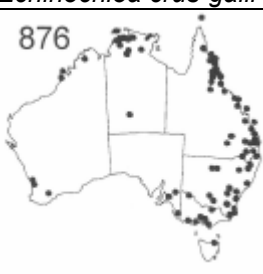
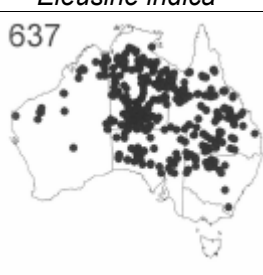
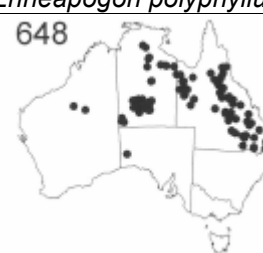
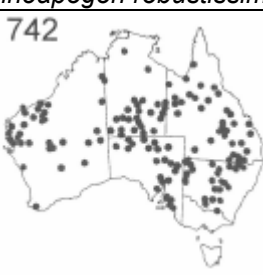
**ATTACHMENT 4B – DISTRIBUTION OF THE OTHER BTF FOOD SPECIES
FROM ATTACHMENT 2 IN THE 2ND JER (Flora of Australia
Vol. 43. 2002) * denotes introduced species.**


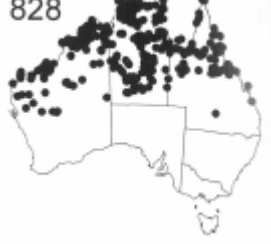
1098 	802 
<i>Alloteropsis cimicina</i>	<i>Eragrostis lacunaria</i>
514 	807 
<i>Aristida calycina</i> var. <i>calycina</i>	<i>Eragrostis leptostachya</i>
506 	815 
<i>Aristida contorta</i>	<i>Eragrostis speciosa</i>
507 	810 
<i>Aristida holathera</i>	<i>Eragrostis tenuifolia</i> *
505 	1391 
<i>Aristida hygrometrica</i>	<i>Eremochloa bimaculata</i>

524 	578 
<i>Aristida ingrata</i>	<i>Eriachne mucronata</i>
520 	580 
<i>Aristida jerichoensis</i>	<i>Eriachne obtusa</i>
533 	1244 
<i>Aristida latifolia</i>	<i>Eulalia aurea</i>
510 	1335 
<i>Aristida queenslandica</i>	<i>Heteropogon contortus</i>
919 	1342 
<i>Acrebala pectinata</i>	<i>Iseilema vaginiflorum</i>
1291 	1211 
<i>Bothriochloa decipiens</i>	<i>Melinis repens</i> *

1287 	735 
<i>Bothriochloa ewartiana</i>	<i>Oxychloris scariosa</i>
1289 	989 
<i>Bothriochloa pertusa</i> *	<i>Paspalidium rarum</i>
1186 	1268 
<i>Cenchrus ciliaris</i> *	<i>Sarga plumosum</i>
724 	1321 
<i>Chloris (barbata) inflata</i> *	<i>Schizachyrium fragile</i>
1275 	1368 
<i>Chrysopogon fallax</i>	<i>Sehima nervosum</i>
1132 	1085 
<i>Cleistochloa subjuncea</i>	<i>Setaria apiculata</i>

1316 	1087 
<i>Cymbopogon obtectus</i>	<i>Setaria surgens</i>
764 	775 
<i>Dactyloctenium radulans</i>	<i>Sporobolus caroli</i>
1167 	790 
<i>Digitaria ammophila</i>	<i>Sporobolus (laxus) diander</i>
1136 	786 
<i>Digitaria brownii</i>	<i>Sporobolus (fertilis *) indicus</i>
1162 	1337 
<i>Digitaria ciliaris</i> *	<i>Themeda avenacea</i>
1169 	685 
<i>Digitaria divaricatissima</i>	<i>Triodia pungens</i>

<p>1066</p> 	
<p><i>Echinochloa colona</i> *</p>	
<p>1067</p> 	
<p><i>Echinochloa crus-galli</i> *</p>	
<p>876</p> 	
<p><i>Eleusine indica</i> *</p>	
<p>637</p> 	
<p><i>Enneapogon polyphyllus</i></p>	
<p>648</p> 	
<p><i>Enneapogon robustissimus</i></p>	
<p>742</p> 	
<p><i>Enteropogon ramosus</i></p>	

<p>864</p> 	
<p><i>Eragrostis basedowii</i></p>	
<p>828</p> 	
<p><i>Eragrostis cumingii</i></p>	

Attachment 5 – Curriculum Vitae

Dr Michael Olsen,
LAMR PTY LTD
ACN: 056765517

DATE AND PLACE OF BIRTH: 07/05/54, Brisbane, Queensland, Australia.

QUALIFICATIONS:

- 1971 - Completed Senior (Queensland), Awarded Commonwealth Scholarship.
- 1978 - Awarded Certificate of Rural Technology (Agriculture) Qld. Dept. Education.
- 1982 - Awarded Bachelor of Science Degree. University of Queensland, St. Lucia.
- 1983 - Awarded First Class Honours (Botany). University of Queensland, St. Lucia.
- 1990 - PhD thesis awarded July, 1990. University of Queensland, St. Lucia.

WORK EXPERIENCE:

- 1973-1975. Zoology Department, University of Queensland, St. Lucia.
- 1975-1976. Agriculture Branch, Dept. Primary Industries. Queensland State Govt.
- 1976-1981. Botany Branch, Dept. Primary Industries. Qld. Govt.
- 1982-1984. Tutor, Botany Department. University of Queensland.
- 1984-1985. F.A.O. - United Nations. Latin America.
- 1986-1988, 2003 - 2013. Tutor and Lecturer, Botany Department. University of Queensland.
- 1987. Lecturer, Biology Department, Queensland Institute of Technology (now Queensland University of Technology).
- 1989-90. Scientist. Department of the Arts, Sport, Environment, Tourism and Territories - Wet Tropics of Queensland World Heritage Area.
- 1990-1992. Research Associate. Botany Department, University of Queensland, St. Lucia.
- 1993-1994. Lecturer, School of Planning, Landscape Architecture and Surveying, Queensland University of Technology.
- 1995- 2000. Lecturer, Faculty of Environmental Sciences, Griffith University.
- 1987- present. Director, Landscape Assessment, Management and Rehabilitation Pty Ltd.
- 2001- 2002, 2003 - 2004. Member of the Ministerial Advisory Committee - *Vegetation Management Act 1999*
- 2003 - 2013. Lecturer, Botany Department, University of Queensland, St. Lucia.

CONSULTANCY EXPERIENCE:

- **Expert Witness (Queensland – Magistrates Court, Planning & Environment Court, Land Court; New South Wales – Land & Environment Court; Commonwealth – Federal Court) (1988-present)**
- **Environmental Impact Assessment (Roads, Residential Development, Telecommunications Powerlines, railways and pipelines Waterways and Wetlands Dams (1987-present)**
- **Vegetation Mapping Studies (including PMAV preparation) (1992-present)**
- **Management Plans (1987-present)**
- **Mining Studies (1993-present)**
- **Forestry (1989-present)**
- **Various Reviews and Academic Tasks (1989-present)**

Attachment 6 - Letter of Instructions



EDO Qld.

Environmental Defenders Office

*Using the law to protect
our environment.*

30 Hardgrave Rd WEST END, QLD 4101

tel +61 7 3211 4466 fax +61 7 3211 4655

edoqld@edo.org.au www.edo.org.au/edoqld

25 November 2014

Michael Olsen
P. O. Box 1124,
OXLEY
AUSTRALIA 4075

Sent by email: info@lamr.com.au

Dear Mr Olsen

Land Services of LSCC Inc. – Analysis of Carmichael coal mine assessment

We confirm that we act for Land Services of Coast and Country Inc. (**LSCC**) in respect of its concerns with the Carmichael Coal Mine (**Project**). LSCC has made an objection to the grant of a mining lease (**ML**) and environmental authority (**EA**) for the Project which are currently the subject of proceedings in the Queensland Land Court (**Proceedings**).

1. Engagement

1.1 On behalf of LSCC, we wish to engage you to act as an independent expert witness in the Proceedings in relation to your area of expertise; threatened riparian flora and Black-throated Finch habitat.

2. Instructions

2.1 You are instructed to review this letter and accompanying documents and advise generally as to whether you consider there are any significant issues or deficiencies in the assessment of your area of expertise for the Project.

2.2 Participate in the court process in the manner set out in the orders of the Court made on 20 October 2014.

3. Background information

3.1 The Project is a proposed open-cut and underground coal mine 160 km north-west of the town of Clermont, in Central Queensland. The mining lease application is for 30

years with an annual coal production rate of around 60 million tonnes per annum, but it is noteworthy that the Applicant's intention is to run the mine for 60 years.

- 3.2 The Project is situated in the Galilee Basin in the catchment of the Burdekin River, which flows into wetlands and the Great Barrier Reef, and the area of the Project and its surroundings is predominantly used for agriculture, particularly grazing.
- 3.3 The thermal coal deposits for the Project are located within Mining Lease Applications 70441, 70505 and 70506 (**MLAs**). Approximately 28,000 hectares of the mining lease area is proposed to be disturbed by the open-cut and underground mining operations and related activities.
- 3.4 Adani Mining Pty Ltd (**Applicant**) lodged MLA 70441 for a mining lease (**ML**) under the *Mineral Resources Act 1989* (Qld) (**MR Act**) on or about 8 November 2010 and subsequently applied for MLAs 70505 and 70506 on 9 July 2013.
- 3.5 The Coordinator-General declared the Project a significant project¹ for which an environmental impact state (**EIS**) was required under the *State Development and Public Works Organisation Act 1971* (Qld) (**SDPWO Act**) by [gazettal notice](#) on 26 November 2010.
- 3.6 The Applicant's EIS was published and public submissions invited from 15 December 2012 to 11 February 2013. A Supplementary EIS (**SEIS**) was published and public submissions invited from 25 November 2013 to 20 December 2013.
- 3.7 The Coordinator-General's report on the Project under the SDPWO Act was delivered on 7 May 2014. The Coordinator-General recommended that the mine be approved subject to conditions.
- 3.8 The Applicant made an application for an environmental authority (**EA**) under the *Environmental Protection Act 1994* (Qld) (**EP Act**) on 11 April 2014.
- 3.9 Objections to the MLAs and EAs were referred to the Queensland Land Court on about 29 September 2014.

4. **Brief of Material**

- 4.1 Once you have confirmed your availability to act in this matter, we will send you an invite to the electronic brief in this matter through Dropbox (a copy of the index to the current Dropbox brief is **Annexure A**). We can provide these document in other electronic format or in hard copy if necessary.
- 4.2 We draw your attention in particular to the general application and approval documents in Index B.

5. **Timing**

- 5.1 Our client lodged an objection to the ML on 17 June 2014, and an objection to the EA on 10 September 2014.

¹ Note that the SDPWO Act was amended in December 2012 (with the amendments taking effect on 21 December 2012). The amendments replaced the term 'significant project' with the term 'coordinated project' and these terms may be used interchangeably.

- 5.2 You be required to participate in the proceedings in accordance with the Orders made on 20 October 2014 (document 22 of Index A of your Brief).
- 5.3 You may be required to meet with any corresponding expert from the other parties and prepare a joint report on setting out points of agreement and disagreement.
- 5.4 You may be required to give oral evidence, or be cross-examined on your evidence, at a hearing.

6. **Your duty to the Land Court**

- 6.1 We enclose as **Annexure B** rules 22 to 24I of the *Land Court Rules 2000* which govern experts in the Land Court.
- 6.2 In particular we note that rule 24C of the *Land Court Rules 2000* provides that you have a duty to assist the Land Court which overrides any obligations you may have to LSCC as your client.
- 6.3 We also emphasise that we and our client don't seek to influence your views in any way and we ask for your independent opinion to assist the Land Court. Consequently, please note that any statements of fact or opinion in this letter of instructions, the above documents, or anything given or said to you by us relevant to the issues in your report do not constrain you in any way and are not intended to influence your views. We ask you to form your own opinion about the relevant facts and circumstances for the purposes of your report.
- 6.4 Any joint report or separate expert report you prepare should confirm that each expert understands the expert's duty to the court and has complied with that duty.

7. **Format of your statement of evidence (other than joint report)**

- 7.1 Suggestions for the format of your report are set out in **Annexure C**, "Format of your statement of evidence".
- 7.2 If you have taken part in a meeting of experts, the joint report is taken to be your statement of evidence and you are to produce a further statement of evidence in relation to any issue of disagreement.
- 7.3 Your report must:
- (1) be addressed to the Court;
 - (2) include your qualifications;
 - (3) include all material facts, whether written or oral, on which your report is based;
 - (4) include references to any literature or other material you relied on to prepare the report;
 - (5) include for any inspection, examination or experiment you conducted, initiated, or relied on to prepare your report—
 - i. a description of what was done; and

- ii. whether the inspection, examination or experiment was done by the expert or under the expert's supervision; and
 - iii. the name and qualifications of any other person involved; and
 - iv. the result;
- (6) if there is a range of opinion on matters dealt with in your report, include a summary of the range of opinion, and the reasons why you adopted a particular opinion;
- (7) include a summary of the conclusions you reached; and
- (8) include a statement about whether access to any readily ascertainable additional facts would assist you in reaching a more reliable conclusion;
- (9) include a confirmation at the end of the statement of evidence:
- a) the factual matters included in the statement are, as far as the expert knows, true; and
 - b) the expert has made all enquiries considered appropriate; and
 - c) the opinions included in the statement are genuinely held by the expert; and
 - d) the statement contains reference to all matters the expert considers significant; and
 - e) the expert understands the expert's duty to the court and has complied with the duty; and
 - f) the expert has read and understood the rules contained in this part, as far as they apply to the expert; and
 - g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.
- (10) include your signature.

7.4 You should attach to the report:

- (1) a copy of your Curriculum Vitae; and
- (2) a copy of this letter.

7.5 Please number all pages and paragraphs of your report. You may wish to include an index.

7.6 If your report includes any photographs, measurements, graphs or illustrations these should be firmly attached to the report, and clearly identified and numbered.

8. **Change of opinion**

8.1 If for some reason, you change your opinion after delivering your report, please advise us as soon as possible. If that change is material, a supplementary report will need to be prepared, which explains the reasons for the change in your opinion.

9. **Confidentiality and privilege**

9.1 In accepting this engagement, you agree that:

- (1) this letter and all future communications (whether electronically maintained or not) between us are confidential. These communications may be subject to client legal privilege;
- (2) you must take **all** steps necessary to preserve the confidentiality of our communications and of any material or documents created or obtained by you in the course of preparing your report;
- (3) you must not disclose the information contained in our communications or obtained or prepared by you in the course of preparing your report without obtaining consent from us;
- (4) you must not provide any other person with documents which come into your possession during the course of preparing this report, whether created by you or provided to you by us or our clients, without obtaining consent from us.

9.2 The duty of confidentiality continues beyond the conclusion of your instructions.

9.3 If you are ever obliged by law to produce documents containing any of this confidential information (whether by subpoena, notice of non-party discovery or otherwise) please contact us immediately so that we may take steps to claim client legal privilege.

9.4 You should ensure that you retain copies of all drafts of your report together with all documents that you rely on in preparing your report. We will inform you when you are no longer required to retain them.

9.5 If requested, you must return to us all documents and other material (including copies) containing confidential information. Where any confidential information is in electronic form, we may require you to delete this information instead.

9.6 Any internal working documents and draft reports prepared by you may not be privileged from disclosure and may be required to be produced to the opposing parties in the litigation, and to the Court.

9.7 You may be cross-examined about any changes between your working documents and your report. The Court will be interested to understand the reason or reasons for any changes, and you should be prepared to, and able to, explain them.

10. **Document management**

10.1 Please ensure that all documents created pursuant to this retainer are marked "Privileged and Confidential: prepared for the purpose of the Queensland Land Court objection hearing to the Carmichael Coal Mine".

11. **Court appearance**

11.1 At the hearing of any objection, you may be required to attend Court and give evidence. You must be personally involved and knowledgeable in all aspects of the preparation of the report.

11.2 If you are required to attend Court to give evidence, we will contact you to discuss your availability and make the necessary arrangements.

If you have any questions regarding your engagement or require further information, please do not hesitate to call us on 3211 4466.

Yours faithfully

Environmental Defenders Office (Qld) Inc

A handwritten signature in black ink, appearing to be 'Sean Ryan', written in a cursive style.

Sean Ryan

Senior Solicitor

To provide feedback on EDO services, write to us at the above address.

ANNEXURE A – Index to Brief

ANNEXURE B

Land Court Rules 2000 (Qld)

Part 5 Evidence

Division 1 Preliminary

22 Definitions for pt 5

In this part—

expert means a person who would, if called as a witness in a proceeding, be qualified to give opinion evidence as an expert witness in relation to an issue in dispute in the proceeding.

joint report, for a proceeding, means a report—

- (a) stating the joint opinion of experts in relation to an issue in dispute in the proceeding; and
- (b) identifying the matters about which the experts agree or disagree and the reasons for any disagreement.

meeting of experts—

- 1 A meeting of experts is a meeting at which experts in each area of expertise relevant to a proceeding meet, in the absence of the parties—
 - (a) to discuss and attempt to reach agreement about the experts' evidence in relation to an issue in dispute in the proceeding as it relates to the experts' area of expertise; and
 - (b) to prepare a joint report.
- 2 The term includes —
 - (a) a resumed meeting of experts or further meeting of experts; and
 - (b) a meeting attended by the experts in either, or a combination, of the following ways—
 - (i) personally;
 - (ii) a way that allows contemporaneous communication between the experts, including by telephone, video link or email.

party, for a proceeding, means a party to the proceeding or the party's lawyer or agent.

statement of evidence, of an expert, see rule 24E.

Division 2 Meetings of experts

23 Application of div 2

Unless the court otherwise orders, this division applies in relation to a meeting of experts ordered or directed by the court at any time in a proceeding.

24 Party must ensure expert ready to take part in meeting of experts

Before a meeting of experts, a party to a proceeding must do all things reasonably necessary or expedient to ensure an expert chosen by the party is ready to take part fully, properly and promptly in the meeting, including by giving the expert—

- (a) reasonable prior notice that the court has ordered or directed a meeting of experts; and
- (b) notice of the contents of any order or direction about the meeting, including the time by which the meeting must be held; and
- (c) reasonable notice of the issue in dispute in the proceeding to the extent it is relevant to the expert's expertise; and
- (d) enough information and opportunity for the expert to adequately investigate the facts in relation to the issue in dispute in the proceeding; and
- (e) written notice that the expert has a duty to assist the court and the duty overrides any obligation the expert may have to the party or any person who is liable for the expert's fee or expenses.

24A Experts attending meeting must prepare joint report

(1) The experts attending a meeting of experts must, without further reference to or instruction from the parties, prepare a joint report in relation to the meeting.

(2) However, the experts attending the meeting may, at any time before the joint report is completed, ask all parties to respond to an inquiry the experts make jointly of all parties.

(3) Despite subrule (1), any of the experts may participate in a mediation involving the parties.

(4) The joint report must—

- (a) confirm that each expert understands the expert's duty to the court and has complied with the duty; and
- (b) be given to the parties.

(5) The applicant or appellant must deliver to the registry, personally or by facsimile or email, a copy of the joint report received under subrule (4) at least 21 days before the date set for the hearing.

24B Admissions made at meeting of experts

(1) Subrule (2) does not apply to a joint report prepared in relation to a meeting of experts.

(2) Evidence of anything done or said, or an admission made, at a meeting of experts is admissible at the hearing of the proceeding or at the hearing of another proceeding in the court or in another civil proceeding only if all parties to the proceeding agree.

(3) In this rule—

civil proceeding does not include a civil proceeding founded on fraud alleged to be connected with, or to have happened during, the meeting.

Division 3 Evidence given by experts

24C Duty of Expert

- (1) A witness giving evidence in a proceeding as an expert has a duty to assist the court.
- (2) The duty overrides any obligation the witness may have to any party to the proceeding or to any person who is liable for the expert's fee or expenses.

24D Giving or accepting instructions to adopt or reject a particular opinion prohibited

A person must not give, and an expert must not accept, instructions to adopt or reject a particular opinion in relation to an issue in dispute in a proceeding.

24E Expert must prepare statement of evidence

- (1) An expert must prepare a written statement of the expert's evidence (a statement of evidence) for the hearing of a proceeding.
- (2) If the expert has taken part in a meeting of experts—
 - (a) a joint report prepared in relation to the meeting is taken to be the expert's statement of evidence in the proceeding; and
 - (b) a further statement of evidence in relation to any issue of disagreement recorded in the joint report is to be prepared by the expert.
- (3) However, the further statement of evidence must not, without the court's leave—
 - (a) contradict, depart from or qualify an opinion in relation to an issue the subject of agreement in the joint report; or
 - (b) raise a new matter not already mentioned in the joint report.

24F Requirements for statement of evidence other than joint report

- (1) An expert's statement of evidence, other than a joint report, must be addressed to the court and signed by the expert.
- (2) The statement of evidence must include the following information, to the extent the information is not already contained in a joint report prepared for the proceeding—
 - (a) the expert's qualifications;
 - (b) all material facts, whether written or oral, on which the statement is based;
 - (c) references to any literature or other material relied on by the expert to prepare the statement;
 - (d) for any inspection, examination or experiment conducted, initiated or relied on by the expert to prepare the statement—
 - (i) a description of what was done; and
 - (ii) whether the inspection, examination or experiment was done by the expert or under the expert's supervision; and
 - (iii) the name and qualifications of any other person involved; and
 - (iv) the result;

(e) if there is a range of opinion on matters dealt with in the statement, a summary of the range of opinion and the reasons why the expert adopted a particular opinion;

(f) a summary of the conclusions reached by the expert;

(g) a statement about whether access to any readily ascertainable additional facts would assist the expert in reaching a more reliable conclusion.

(3) The expert must confirm, at the end of the statement of evidence—

(a) the factual matters included in the statement are, as far as the expert knows, true; and

(b) the expert has made all enquiries considered appropriate; and

(c) the opinions included in the statement are genuinely held by the expert; and

(d) the statement contains reference to all matters the expert considers significant; and

(e) the expert understands the expert's duty to the court and has complied with the duty; and

(f) the expert has read and understood the rules contained in this part, as far as they apply to the expert; and

(g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding.

24G Serving statement of evidence other than joint report

(1) This rule applies to a statement of evidence other than a joint report.

(2) A party to a proceeding intending to call evidence by an expert in the proceeding must deliver to the registry, personally or by facsimile or email, and serve on each other party to the proceeding, a copy of the expert's statement of evidence.

(3) A party must comply with subrule (2) at least 21 days before the date set for the hearing or, if the court directs a different time, within the time directed by the court.

24H Matters contained in statement of evidence not to be repeated

During examination in chief, an expert must not, without the court's leave, repeat or expand on matters contained in the expert's statement of evidence or introduce new material.

24I Evidence from only 1 expert may be called

Other than with the court's leave, a party to a proceeding, at any hearing of the proceeding, may call evidence from only 1 expert for each area of expertise dealt with in the hearing.

ANNEXURE C

Court Rules

- 1 A copy of the relevant sections of the *Land Court Rules 2000* is provided at Annexure B.
- 2 While the format of your report is discretionary, you should ensure that your report complies with the above requirements, and that compliance with these requirements is readily apparent.

Format

- 3 We make the following suggestions regarding the layout of your report.
- 4 Ensure that your report contains your full name and address.
- 5 Please number all pages and paragraphs of your report. You may wish to include an index. If your report includes any photographs, measurements, graphs or illustrations these should be firmly attached to the report, and clearly identified and numbered.
- 6 Your report may include the following sections and headings:

6.1 “Introduction”

This section should:

- refer to, and annex, the letter of instructions received from us;
- specifically identify and refer to any literature or other source materials (eg text books, industry guidelines and handbooks) used in support of your opinion. If lengthy, it may be practical to list this material in an annexure to the report. If for some reason, you do not refer to certain material when preparing your report, please specifically identify this material and outline the reasons it was not referred to; and
- refer to any methodology you have adopted in preparing the report, including a detailed description of any test or examinations, who carried them out, their qualifications and the results.

6.2 “My qualifications”

In this section of your report, you need to qualify yourself as an expert in the areas in which you have been asked to provide an opinion. You should describe how your specialist knowledge (whether obtained through training, study or experience), your experience and qualifications qualify you as an expert in these areas.

Your curriculum vitae should also be annexed to your report and referred to under this heading.

6.3 “Summary of my opinion”

You are required to include a summary of your opinion.

6.4 “Background facts and assumptions”

The Court Rules require you to list all “facts, matters and assumptions on which each opinion expressed in the report is based”.

The facts and assumptions you rely on need to be linked to their sources and clearly stated and verifiable. These may be sufficiently set out in our letter of instructions.

If you are called as a witness, you may be required to give evidence in relation to your assumptions.

6.5 “My opinion”

This part of your report should contain your detailed reasons for your opinions on the questions put to you. This will be the most substantial part of your report.

When drafting your report, you should make it clear that the opinion is wholly or substantially based on your expert knowledge. Your opinions must be confined to areas within your expert knowledge.

You must set out the process of reasoning that you followed in coming to your opinion and identify the facts and assumptions upon which you rely for the opinion. Where there are alternative views available, you should explain why you have chosen a particular alternative.

6.6 “Qualification of the opinion”

If appropriate, you should set out any qualification of your opinion, without which the report would be incomplete or inaccurate. If applicable, you should state that a particular question or issue falls outside your relevant field of expertise.

You should also state if your opinion is not concluded because of insufficient research or data or for any other reason.

6.7 “Confirmation”

You must confirm, at the end of the report—

- a) the factual matters stated in the report are, as far as the expert knows, true; and
- b) the expert has made all enquiries considered appropriate; and
- c) the opinions stated in the report are genuinely held by the expert; and
- d) the report contains reference to all matters the expert considers significant; and
- e) the expert understands the expert’s duty to the court and has complied with the duty;
- f) the expert has read and understood the Land Court Rules 2000, as far as they apply to the expert;
- g) the expert has not received or accepted instructions to adopt or reject a particular opinion in relation to an issue in dispute in the proceeding

Please ensure that you make all necessary inquiries in a timely fashion to enable you to confirm these matters.

6.8 “Signature”

The final page of your report must be signed by you.