

OUR REF: 4541

Gold Coast & Logan Office
76 Business Street
Yatala QLD 4207

19 May 2017

Wayne DiBartolo
c/- Pacific Reef Fisheries
Lot 1 Trent Road
ALVA 4807

Submitted via email: wayne@pacificreef.com.au

Dear Wayne,

**RE: COMPLIANCE WITH CONDITION 11 OF COMMONWEALTH DECISION NOTICE
EPBC 2001/402 IN RELATION TO ALVA BEACH AQUACULTURE EXPANSION**

Property: LOT 1, TRENT ROAD, ALVA (LOT 1 ON RP804106)

Please find below a response to the following condition outlined in the abovementioned decision notice issued by the Commonwealth of Australia on 19th August, 2003.

- 11 *Pacific Reef Fisheries (Australasia) Pty Ltd must ensure that an independent survey of channel cross sections of Little Alva Creek is conducted to the satisfaction of the Minister. This survey must include sediment composition analysis within the channel and in the depositional areas outside the channel to establish whether the ecosystem is being impacted by geomorphologic processes which may result from Aquaculture Waste discharge. A baseline survey is to be conducted prior to construction and further surveys are to be undertaken annually for 3 years following commencement of operations and a report submitted to the Minister within 3 months of each survey to allow an assessment of the impact of Aquaculture Waste discharge.*

Response

On the 10th and 11th April, 2017, an ecologist and two surveyors from Gassman Development Perspectives (GDP) undertook site work to fulfil the requirements of this condition. This

monitoring occasion represented the third and final of three (3) subsequent years of monitoring to be undertaken following the baseline data collected in April, 2014.

The same three (3) locations within Little Alva Creek and one (1) location in the depositional areas outside of Little Alva Creek were used as sites for this study, consistent with locations selected for the baseline study. These locations are shown in Figure 1.

Level datum on AHD_{DER} was established on the site and horizontal control base to ensure future readings were observed in the same locations.

At each site, detailed cross sections of the channel were surveyed by licensed and appropriately qualified surveyors. The results of these cross sections are also illustrated in Figure 1.

Additionally, at each of these corresponding sites three (3) samples of benthic sediments were collected from across the channel, one from close to each bank and one from the middle of the channel. These samples were collected and sent to Australian Laboratory Supplies (ALS) for a particle size distribution analysis. The average values of these analyses were calculated and graphed. The graph for all sites is included in Figure 2 and data included in Appendix 1. A reference comparison from the 2016 results is included in Figure 3 and the baseline monitoring results is included in Figure 5.

Whilst some fluctuations can be observed between the four graphs, the general concentration of the bell curve is consistent with the previous years' results. The graph is visually very similar to the 2016 results. The higher concentration of finer sediments has continued in contrast to the first two years. This is likely reflective of recent climatic conditions also experienced in the area leading up to 2016.

As discussed earlier in this letter, the results of this study represent the final of three years of data collected following the baseline collected in April 2014. The overall conclusion of this study is that no impacts to the Little Alva Creek system are attributable to the expansion of aquaculture operations at Pacific Reef Fisheries due to the consistency of the results over the years of monitoring.

Yours faithfully,

GASSMAN DEVELOPMENT PERSPECTIVES



MARK SPEARS



LOCALITY

CREEK CROSSING 1

STN	EASTING	NORTHING	Level 2014	Level 2015	Level 2016	Level 2017
A	551 027	7 847 419	0.78	0.52	0.58	0.57
B	551 018	7 847 422	-0.27	-0.25	-0.26	-0.26
C	551 016	7 847 425	-0.40	-0.58	-0.59	-0.44
D	551 013	7 847 425	-0.48	-0.28	-0.30	-0.32

CREEK CROSSING 2

STN	EASTING	NORTHING	Level 2014	Level 2015	Level 2016	Level 2017
A	551 131	7 847 589	0.49	0.38	0.41	0.41
B	551 131	7 847 591	0.41	0.27	0.26	0.42
C	551 129	7 847 597	0.06	0.19	0.20	0.10
D	551 124	7 847 602	-0.30	-0.33	-0.35	-0.37
E	551 120	7 847 607	-0.42	-0.49	-0.45	-0.29
F	551 123	7 847 610	-0.43	-0.37	-0.40	-0.48
G	551 123	7 847 612	-0.44	-0.44	-0.41	-0.48
H	551 122	7 847 615	-0.21	-0.37	-0.34	-0.21

CREEK CROSSING 3

STN	EASTING	NORTHING	Level 2014	Level 2015	Level 2016	Level 2017
A	551 232	7 847 547	0.41	0.49	0.52	0.47
B	551 233	7 847 547	0.46	0.57	0.61	0.47
C	551 240	7 847 549	-0.30	-0.57	-0.52	-0.35
D	551 240	7 847 555	-0.46	-0.54	-0.50	-0.47
E	551 238	7 847 560	-0.50	-0.45	-0.42	-0.49

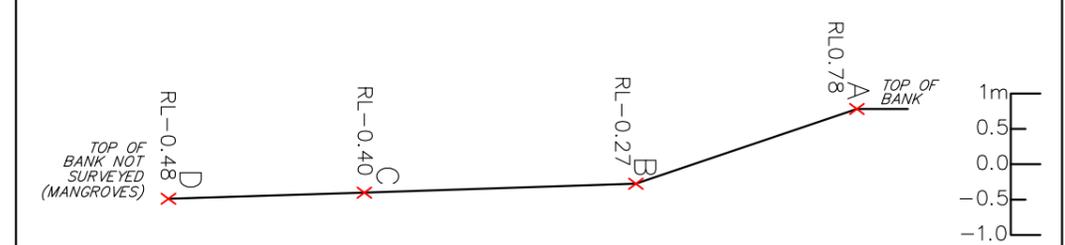
CREEK CROSSING 4

STN	EASTING	NORTHING	Level 2014	Level 2015	Level 2016	Level 2017
A	551 398.970	7 847 540.753	-0.34	-0.66	-0.69	-0.49
B	551 395.235	7 847 545.630	-0.19	-0.60	-0.55	-0.49
C	551 393.542	7 847 550.153	0.02	-0.34	-0.37	-0.17
D	551 389.816	7 847 552.786	0.09	-0.12	-0.19	-0.17
E	551 384.481	7 847 555.371	0.28	0.70	0.72	0.69
F	551 382.176	7 847 555.816	0.28	0.81	0.79	0.79
G	551 384.308	7 847 563.826	0.37	0.06	0.01	0.02
H	551 382.970	7 847 567.858	0.40	0.06	0.02	0.05
I	551 380.294	7 847 569.610	0.37	0.25	0.31	0.05

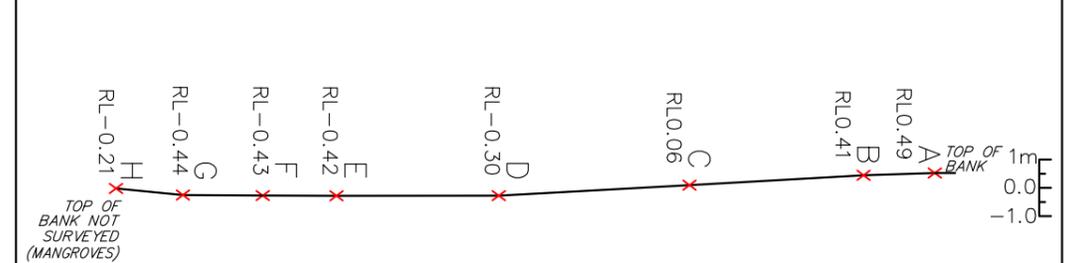
SPOT LEVELS

STN	EASTING	NORTHING	Level 2014	Level 2015	Level 2016	Level 2017
1	551 441	7 847 615	0.02	-0.03	-0.02	0.01
2	551 441	7 847 622	0.08	-0.22	-0.27	-0.31
3	551 494	7 847 631	-0.30	-0.19	-0.20	-0.17
4	551 510	7 847 608	-0.36	-0.30	-0.28	-0.29

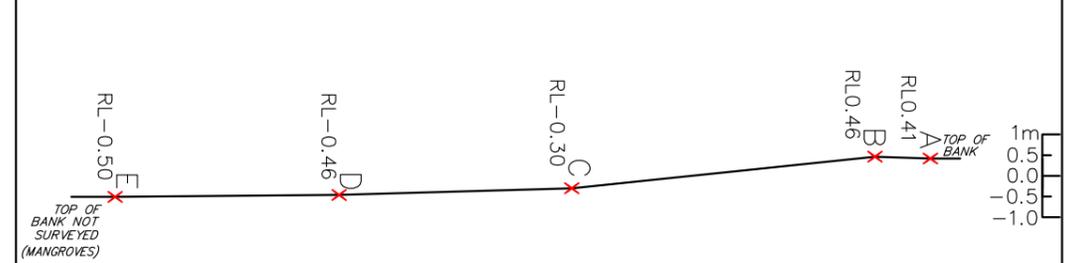
TYPICAL CROSS SECTION – CREEK CROSSING 1
Scale As Shown (2014 Levels Illustrated)



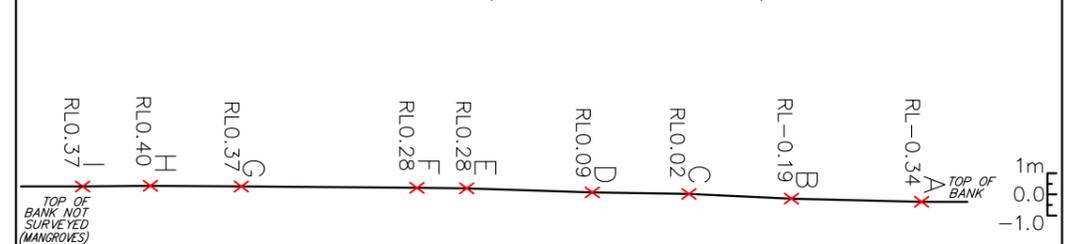
TYPICAL CROSS SECTION – CREEK CROSSING 2
Scale As Shown (2014 Levels Illustrated)



TYPICAL CROSS SECTION – CREEK CROSSING 3
Scale As Shown (2014 Levels Illustrated)



TYPICAL CROSS SECTION – CREEK CROSSING 4
Scale As Shown (2014 Levels Illustrated)



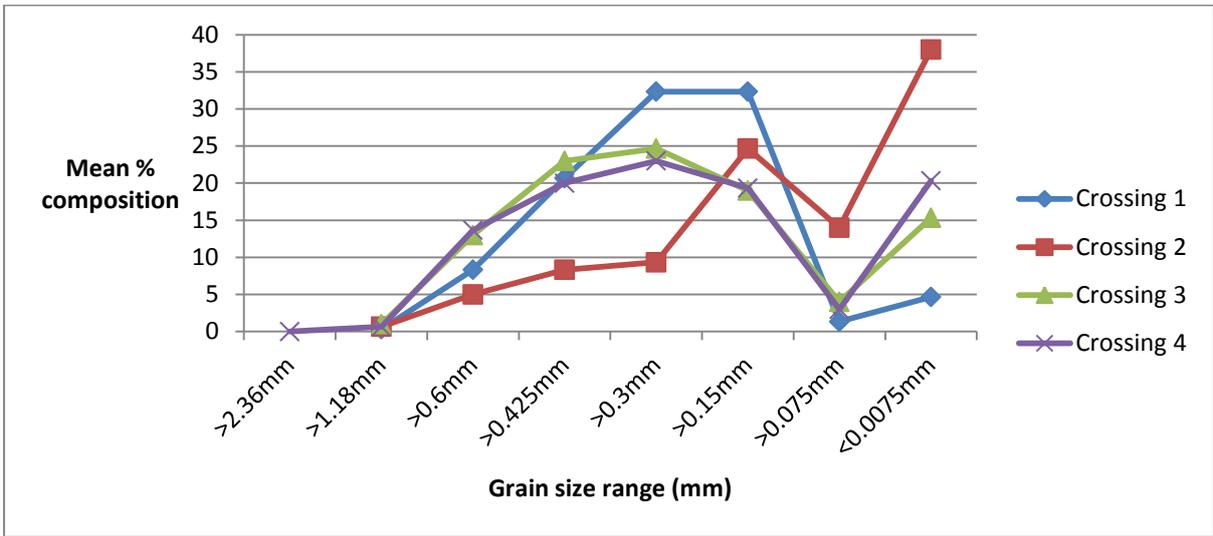


Figure 2 – Mean grain size distribution for creek crossings from recent monitoring in April 2017

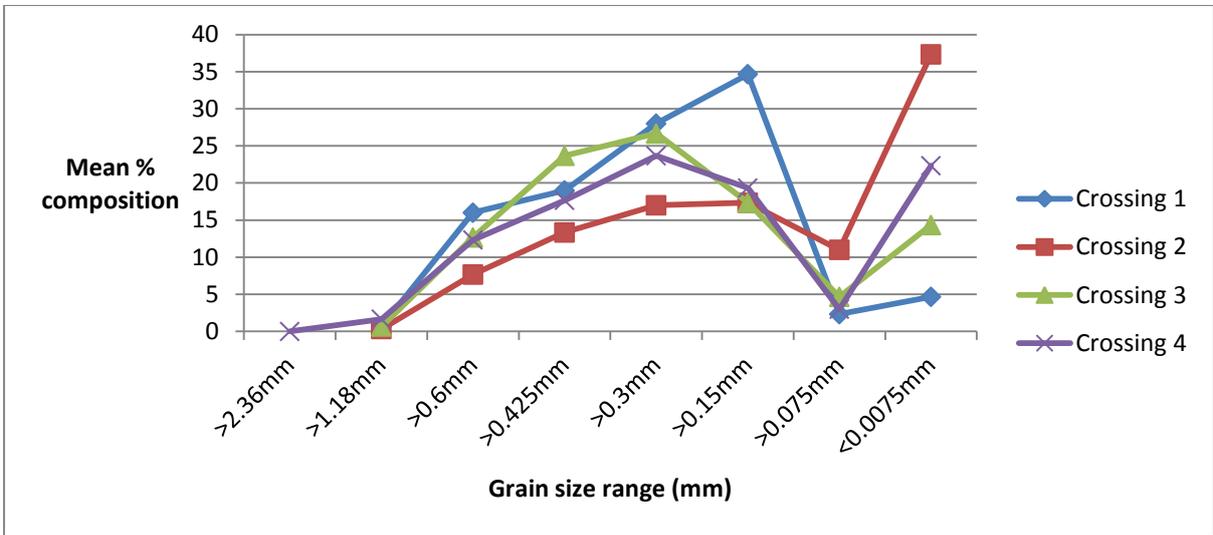


Figure 3 – Mean grain size distribution for creek crossings (comparison from monitoring undertaken in April 2016)

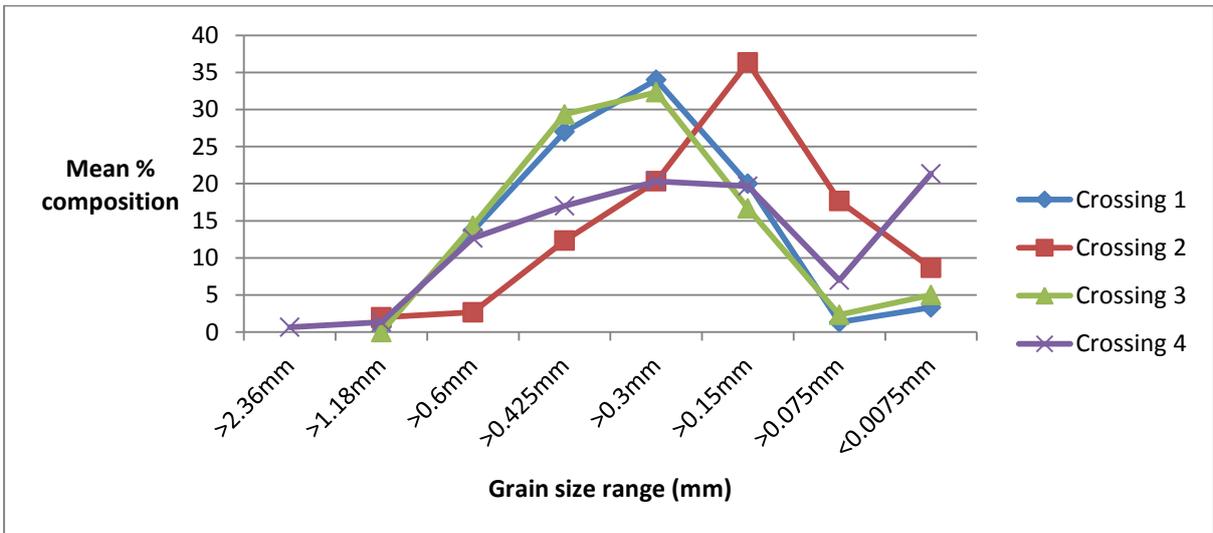


Figure 4 – Mean grain size distribution for creek crossings (comparison from monitoring undertaken in April 2015)

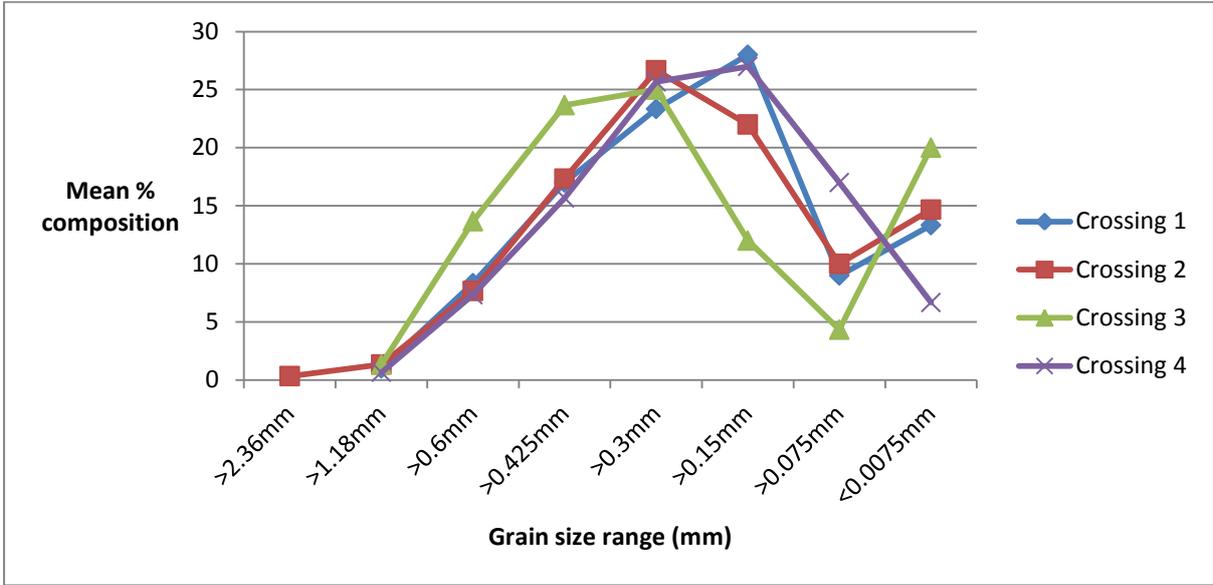


Figure 5 – Mean grain size distribution for creek crossings (comparison from baseline monitoring undertaken in April 2014)

Appendix 1 – Data used for particle size distribution

	Crossing 1a	Crossing 1b	Crossing 1c	Ave	Crossing 2a	Crossing 2b	Crossing 2c	Ave	Crossing 3a	Crossing 3b	Crossing 3c	Ave	Crossing 4a	Crossing 4b	Crossing 4c	Ave
>2.36mm	0	0	0		0	0	0		0	0	0		0	0		0
>1.18mm	1	0	0	0.333333	0	1	1	0.666667	0	2	1	1	0	0	2	0.666667
>0.6mm	19	6	0	8.333333	3	10	2	5	8	15	16	13	4	13	24	13.66667
>0.425mm	34	22	6	20.66667	5	17	3	8.333333	17	24	28	23	7	23	30	20
>0.3mm	30	40	27	32.33333	8	16	4	9.333333	19	26	29	24.66667	14	31	24	23
>0.15mm	11	27	59	32.33333	13	16	45	24.66667	19	20	18	19	20	25	13	19.33333
>0.075mm	0	1	3	1.333333	7	9	26	14	6	4	2	4	5	2	2	3
<0.0075m	5	4	5	4.666667	64	31	19	38	31	9	6	15.33333	50	6	5	20.33333