

BOP Fertiliser Compliance Report



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Cover Photo: BOP Fertiliser Site

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Chapter 1: Introduction

Bay of Plenty Fertiliser Limited operates a nine hectare manufacturing site at Mount Maunganui adjacent to the Tauranga Harbour Toll Plaza. Fertiliser and raw products have been stored, blended and manufactured on this site since 1955.

BOP Fertiliser holds a number of resource consents for the discharge of contaminants and the taking of sea and groundwaters. This report deals with consent numbers 02 4155 the discharge of site stormwater and 04 0056 the discharge of wastewater.

The period of compliance covered in this report is May 1998 to June 2000. The last report was Environmental Report 98/10.

Chapter 2: Methodology

Environment B·O·P staff have assessed compliance with consent conditions in the following ways:

- Site inspections have been undertaken to assess compliance with conditions relating to the contingency and maintenance plans.
- Conditions relating to water quality have been assessed from monitoring data supplied by the consent holder.

Chapter 3: Consent 02 4155 Conditions and Compliance

The consent granted to BOP Fertiliser Limited (02 4155) stormwater discharge is reproduced in Appendix I. Appendix III shows the layout of stormwater drains at the BOP Fertiliser site.

The conditions that require monitoring are reported below:

3.1 Condition 2 – Discharge Rate

Condition 2 authorises the discharge of 3,200 litres per second of stormwater to the Tauranga Harbour. This discharge rate has been calculated using the rational method and corresponds to the area of paved surfaces and building roofs and the 100 year design storm. The rate of discharge is monitored using a v-notch weir, and is recorded via a PLC to a daily totaliser.

3.2 Condition 3 – Points of Discharge

Condition 3 relates to the points of discharge into the Tauranga Harbour and the open drains on the southern property boundary. Since the last compliance report 98/10 these conditions have been changed to include the addition of the single outfall discharging on the southern property boundary. The map reference for this drain is NZMS 260 U14 907 878.

3.3 Condition 6.1 – Discharge Points

Condition 6.1 requires that stormwater outfalls be designed and constructed as shown on plans submitted with consent application 04 0056. These structures complied with plans when installed and were checked for compliance in February 1995. As the structures have not been altered since and are inspected twice a year the structures comply with the consent conditions.

3.4 Condition 6.2 – Discharge Points

Since the last compliance report (98/10) this condition has changed, relating to the discharge into the main stormwater system and the discharges from two outfalls at the drain aligned along the properties southern boundary.

The drain along the southern property boundary has been included as a new discharge point for the site, as against incorporating the stormwater into the existing two outfalls.

3.5 **Condition 7.1 and 7.2 – Water Quality**

Condition 7.1 states that all stormwater discharged shall be free of floatable solids and oil and grease. Condition 7.2 states that the consent holder shall exercise control to prevent introduction into the stormwater system of toxic substances that may be harmful to any form of aquatic life. Although the discharge of stormwater was not observed at the time of the last compliance visit, the following should be noted in relation to the above conditions:

- Stormwater from the number one and two rock stores, the sulphur store and the number one and two product stores passes through primary soakage/settling chambers that operate on an overflow system. The first flush of water that contains floatable suspended materials will be treated in the primary settling chambers.
- Significant quantities of oil and grease are unlikely to enter the stormwater system because of the existence of settling sumps. However, grease and waste drums are being stored onsite in an inappropriate fashion and in an unbunded area as identified in compliance field sheet dated 28 July 2000.
- The company maintains a separate process water treatment and discharge system where compounds from acidulation and formulation are treated. Contamination of the stormwater system from this source therefore is unlikely.

3.6 **Condition 7.3 – Water Quality**

Condition 7.3 gives limits that all stormwater must meet before discharge. They are as follows:

- (a) The pH shall be within the range of 4.0 to 9.0 units.
- (b) The total phosphorus concentration shall not exceed 180 g/m^3 and the average total phosphorus concentration discharged over any twelve month period shall not exceed 60 g/m^3 .
- (c) The ammoniacal nitrogen concentration shall not exceed 90 g/m^3 and the average ammoniacal nitrogen concentration discharged over any twelve month period shall not exceed 30 g/m^3 .
- (d) The suspended solids concentration shall not exceed 300 g/m^3 and the average suspended solids concentration discharge over any twelve month period shall not exceed 100 g/m^3 .

Compliance with the above conditions is reported in section 3.9.

3.7 **Condition 8.1 – Sampling Programme**

Condition 8.1 specifies a sampling programme that the consent holder must undertake while consent 02 4155 is exercised. Samples are taken during six major rain events per year. During each event, up to six samples are taken at half hourly intervals. The results of the sampling programme for each rain event are to be sent to the Regional Council within one month of the sampling taking place.

Generally the returns were within the required one month time frame The following constituents are analysed for:

- (a) Suspended Solids
- (b) Total Phosphorus
- (c) Ammoniacal Nitrogen
- (d) Fluoride

3.8 **Condition 8.2 – Sampling Programme**

Condition 8.2 outlines a similar sampling programme to that above, however samples are taken around the main loadout area rather than the two outfalls. The consent holder is required to test for the following on at least four occasions per year. The following constituents are analysed for:

- (a) Suspended Solids
- (b) Total Phosphorus
- (c) Ammoniacal Nitrogen

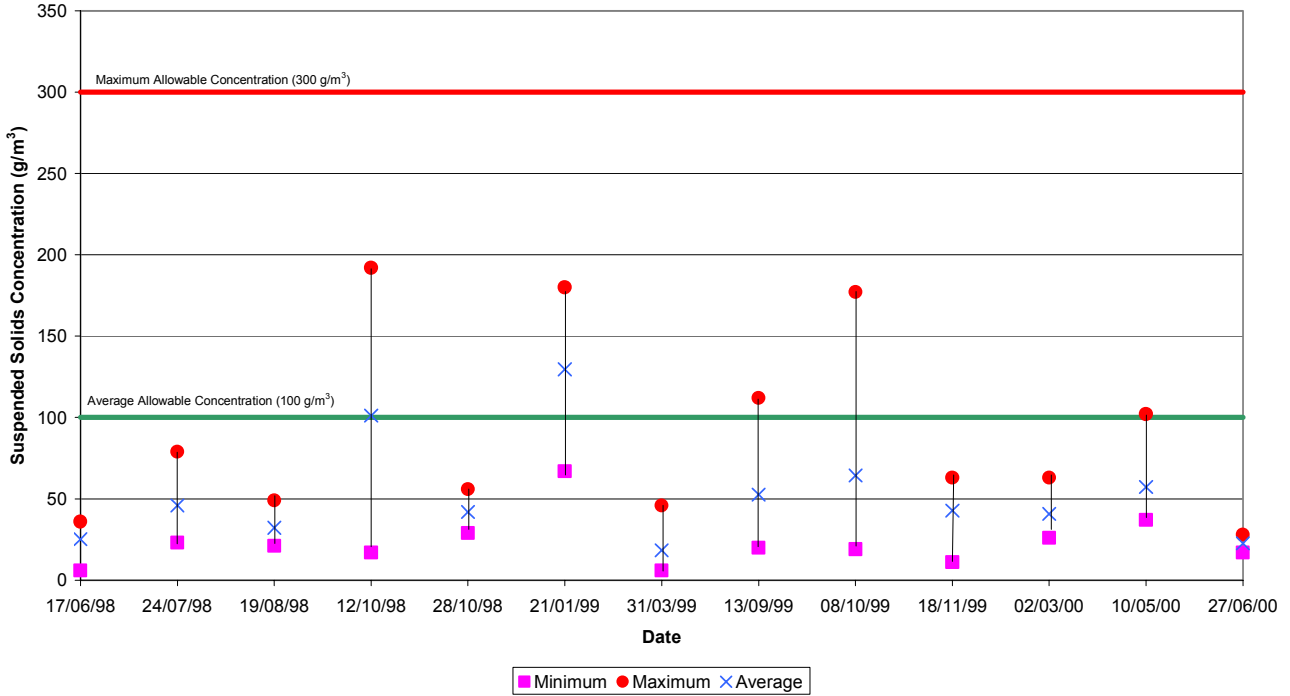
3.9 **Monitoring Results**

3.9.1 **Monitoring Results from March 1999 through to June 2000**

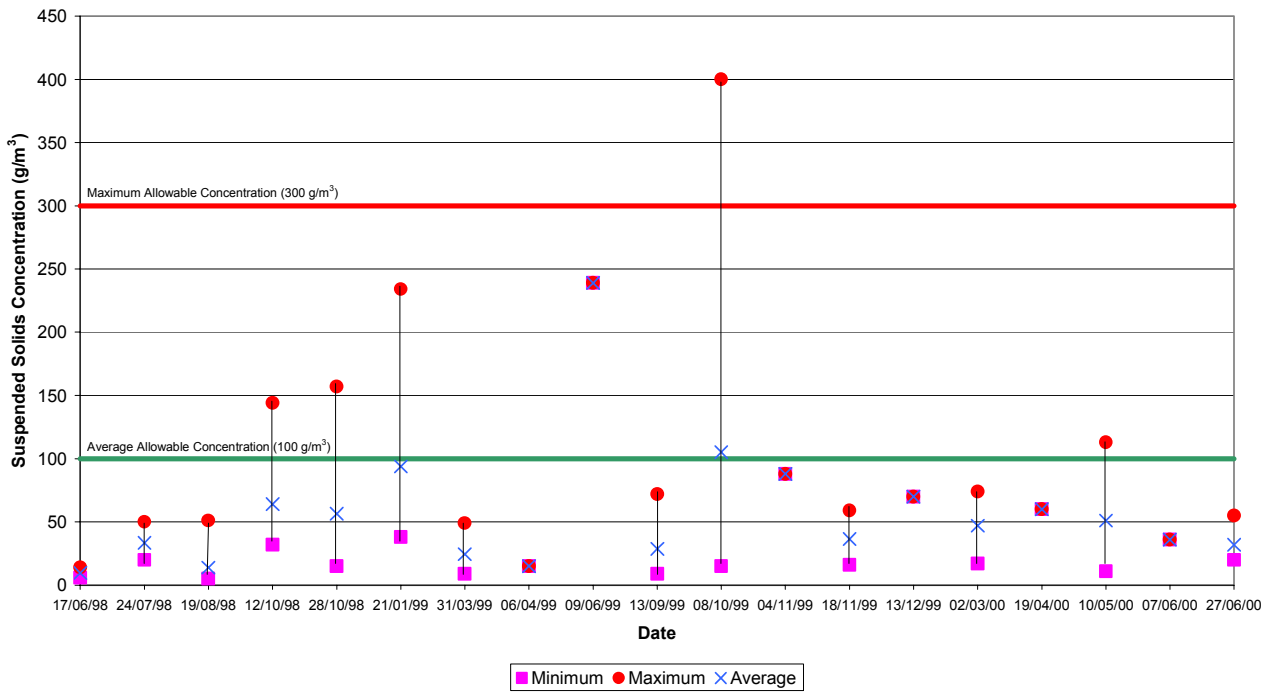
The following is a graphical summary of compliance data from 1998 and 2000 (June) pursuant to conditions 7 and 8 outlined previously. For comparative purposes each constituent is presented for each outfall, and a summary of results is given in Tables 1 and 2.

The graphs below show plots of concentration versus date. The date on the 'x' axis shows the date of the rainfall event sampled and 'y' axis shows the corresponding concentration for each event. The data is presented showing the range and the average concentrations.

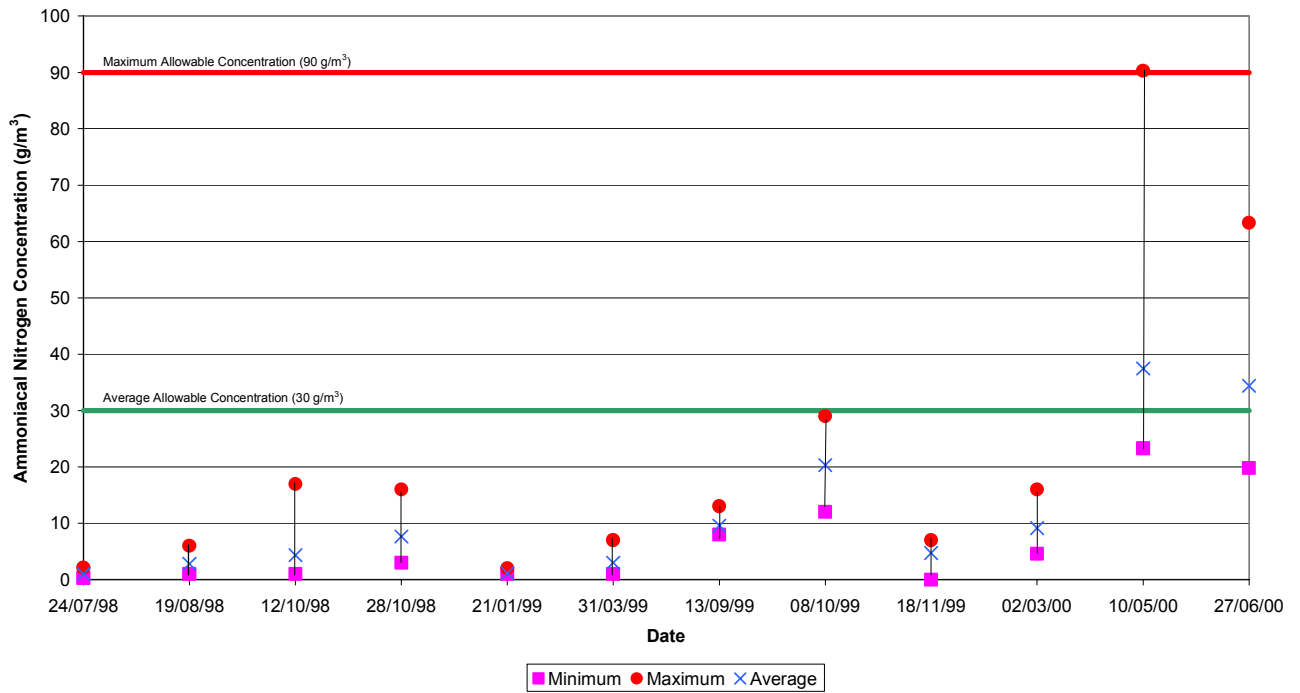
Northern Outfall - Suspended Solids Concentration



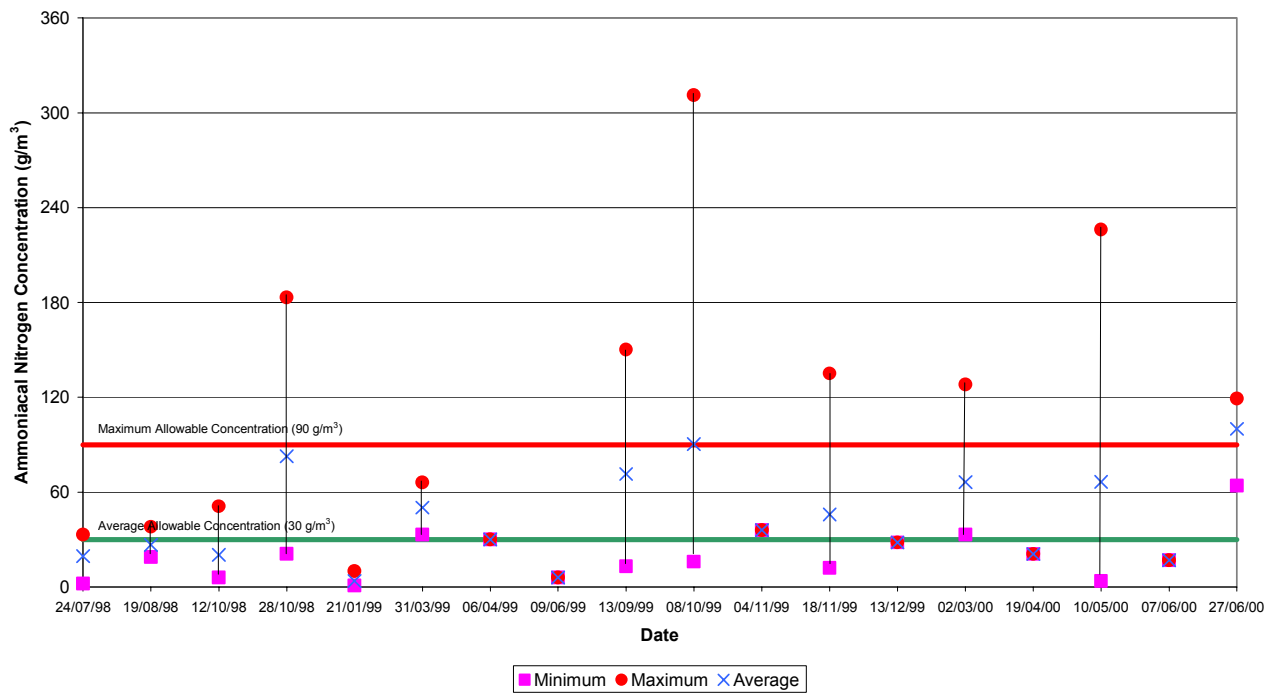
Southern Outfall - Suspended Solids Concentration



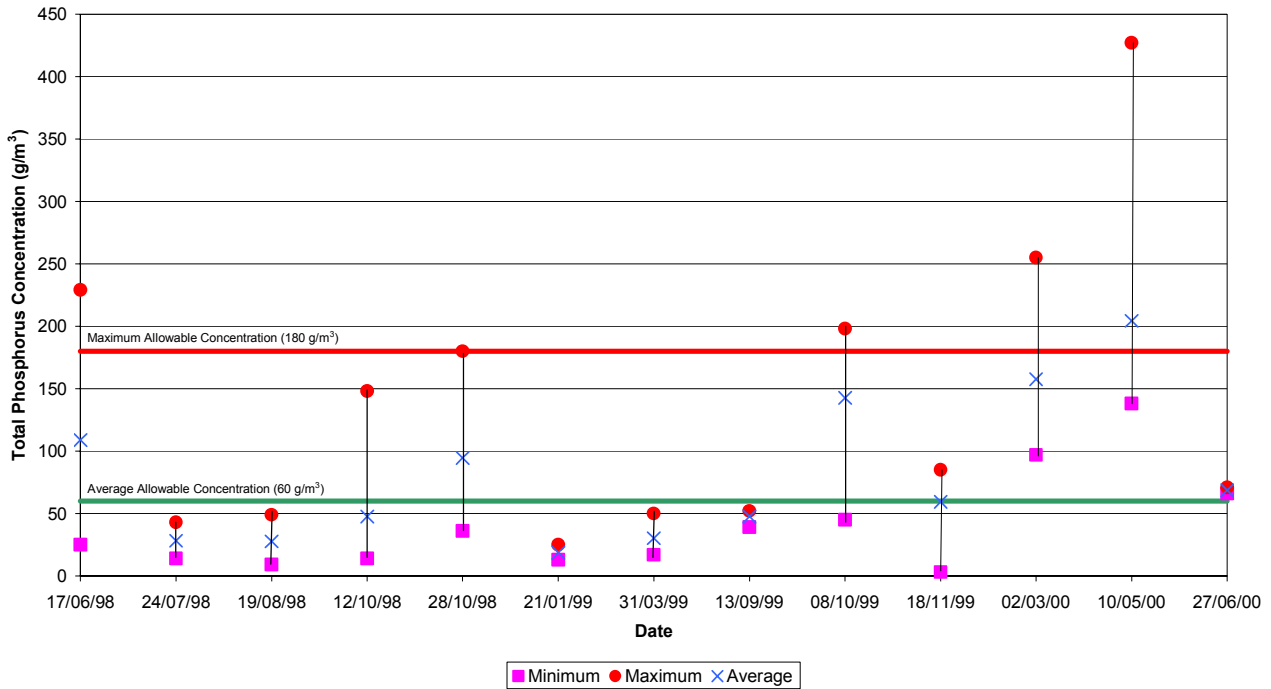
Northern Outfall - Ammoniacal Nitrogen Concentration



Southern Outfall - Ammoniacal Nitrogen Concentration



Northern Outfall - Total Phosphorus Concentration



Southern Outfall - Total Phosphorus Concentration

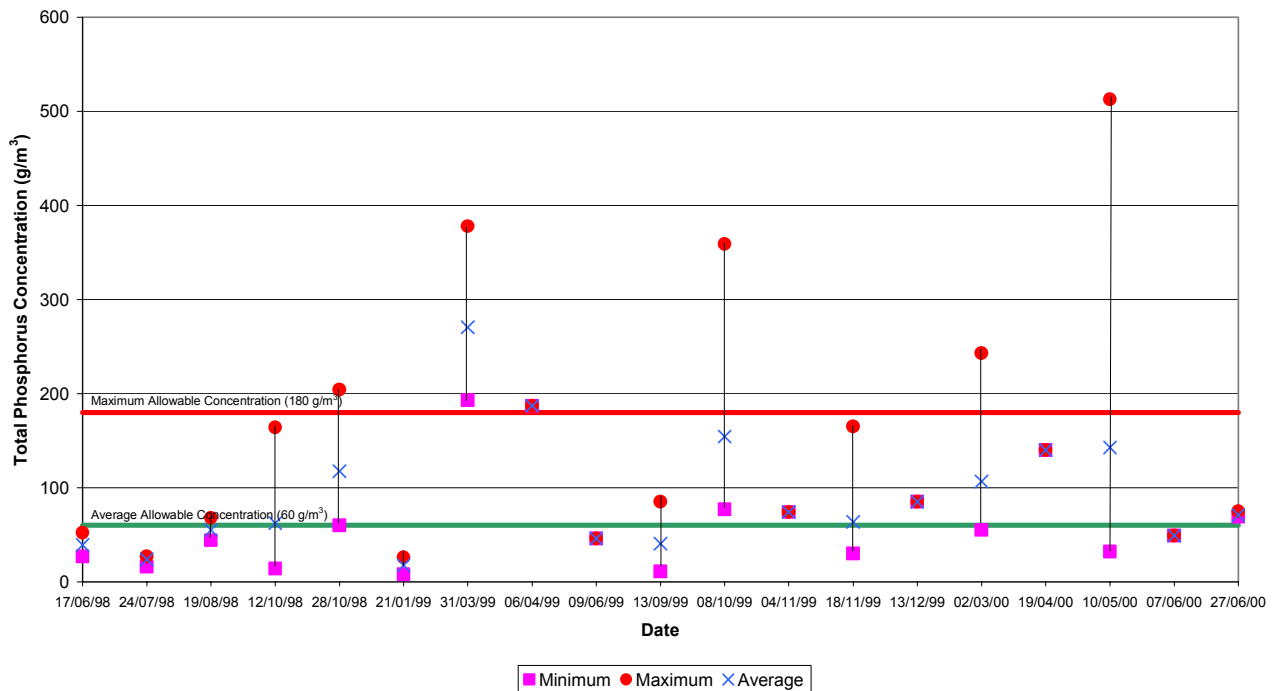


Table 1 Summary of Monitoring Data for 1998 Northern Outfall and Southern Outfall

	Constituent							
	Northern Outfall				Southern Outfall			
	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L
Maximum Limit	300	90	180	N/A	300	90	180	N/A
Average Limit	100	30	60	N/A	100	30	60	N/A
Largest Value	336	17	229	442	144	183	204	38
Smallest Value	6	0.3	9	4	5	2	16	4
Annual Average from Samples	59.4	3.3	56.9	82.9	38.8	32.2	61.8	15.9
Number of Exceedances	1	0	1	N/A	0	4	2	N/A

Discussion:

- (i) The average annual suspended solids limit was met at both outfalls although the maximum limit was exceeded on one occasion (3 May 1998). This one result appears anomalous to the samples taken with the same stormevent and may infact be an error in reporting.
- (ii) The average annual ammoniacal nitrogen limit was met at the northern outfall but was exceeded by 7% at the southern outfall. The northern outfall was within the maximum concentration limit but the southern outfall exceeded this limit for 3 samples (28 October 1998).
- (iii) The average annual total phosphorus limit was met at the northern outfall but exceeded by 3% at the southern outfall. Both the northern and southern outfalls had one exceedance of the maximum concentration limit (17 June and 28 October 1998 respectively).
- (iv) The fluoride concentrations were the highest at the northern outfall.

Table 2 Summary of Monitoring Data for 1999 Northern Outfall and Southern Outfall

	Constituent							
	Northern Outfall				Southern Outfall			
	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L
Maximum Limit	300	90	180	N/A	300	90	180	N/A
Average Limit	100	30	60	N/A	100	30	60	N/A
Largest Value	180	29	198	72	400	311	379	53
Smallest Value	6	1	13	8	9	1	8	5
Annual Average from Samples	65	8.1	61.4	35.6	61.6	51.9	106.5	14.5
Number of Exceedances	0	0	2	N/A	1	9	10	N/A

Discussion:

- (v) The average annual limit for suspended solids was met, for both outfalls, although the maximum limit was exceeded on one occasion (8 October 1999) at the southern outfall.
- (vi) The average annual ammoniacal nitrogen limit was met at the northern outfall but was exceeded by over 100% at the southern outfall. The maximum limit was not exceeded on any occasion at the northern outfall, but was exceeded on eight occasions at the southern outfall during four rainfall events. On each occasion the exceedance was associated with the first pulse of rainwater.
- (vii) The average annual total phosphorus limit was not met by either outfall, the exceedances were 2% and 78% for the northern and southern outfalls respectively. The maximum limit was exceeded at the northern outfall on one occasion (8 October 1999) and at the southern outfall on seven occasions, five of which were associated with one rainfall event (31 March 1999).
- (viii) Fluoride concentrations were highest at the northern outfall.

Table 3 Monitoring Results June 2000 (Northern and Southern Outfall)

	Constituent							
	Northern Outfall				Southern Outfall			
	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L	Suspended Solids mg/L	Ammoniacal Nitrogen mg/L	Total Phosphorus mg/L	Flouride mg/L
Maximum Limit	300	90	180	N/A	300	90	180	N/A
Average Limit	100	30	60	N/A	100	30	60	N/A
Largest Value	102	90.3	427	121	113	226	513	40
Smallest Value	17	4.6	66	25	11	3.8	32	10
Annual Average from Samples	43.8	25.5	158.5	54.7	45.6	73.1	114	22
Number of Exceedances	0	1	4	N/A	0	6	3	N/A

Discussion:

- (i) The average annual suspended solids limit was met for both outfalls. The maximum limit was also met by both outfalls.
- (ii) The average annual ammoniacal nitrogen limit was met at the northern outfall, but was exceeded by 144% at the southern outfall. The maximum limit was exceeded on one occasion at the northern outfall (10 May 2000) and five times at the southern outfall.
- (iii) The average annual total phosphorus limit was not met by either outfall, the northern exceeded by 164% and the southern by 90%. The maximum limit was exceeded at the northern outfall on three occasions and the southern outfall on two occasions.
- (iv) Average and maximum fluoride concentrations in stormwater discharges decreased between 1999 and 2000 to date.

Table 4 Comparison Between Monitoring Results for 1999 and 2000

		Constituents							
		Suspended Solids		Ammoniacal Nitrogen		Total Phosphorus		Fluoride	
Level	Year	North	South	North	South	North	South	North	South
Average	1998	59	39	3	32	57	62	83	16
	1999	65	61	8	52	61	106	36	15
	2000	44	46	25	73	158	114	54	22
Peak	1998	336	144	17	183	229	204	442	38
	1999	180	700	29	311	198	379	72	53
	2000	102	113	90	226	427	513	121	40

North – Northern Outfall

South – Southern Outfall

Concentrations in g/m³

3.10 Environmental Monitoring

3.10.1 Condition 9.1 and 9.2

Condition 9.1 directs the consent holder to undertake environmental surveys within the receiving environment adjacent to the stormwater outfalls. These surveys are to be conducted every three years, and the results compared to the environmental quality of the harbour at locations remote to this or other discharges. Bioresearchers Limited conducted a study on the effects of both the stormwater and process water discharges from BOP Fertiliser's manufacturing site in 1999.

The results of the environmental monitoring report show a slight increase in fluoride and phosphorus concentrations in seawater and sediment around the stormwater outfall compared to the results of the 1997 report. This indicates that in May there may have been a discharge of some fertiliser into the stormwater system. However, the report also indicated that the source of the elevated fluoride and phosphorus concentrations may be historic and a reflection of possible sediment movement.

Water quality immediately around the outfall points showed a slight reduction in pH and an increase in fluoride and phosphorus concentration compared to background water samples. This fits in with the pattern seen in the monitoring results. At 100 metres from the outfall water quality still reflected contaminants from the outfall, but this was not evident at 400 metres.

The presence of contaminants in shellfish flesh, showed a slight increase in fluoride concentrations between 1997 and 1999, but within the range found for the past 10

years. Cadmium concentrations were below detection limit (<0.05mg/kg), while zinc concentrations are within the normal range of results for the last 10 years.

Sediment quality showed an increase in fluoride and phosphorus concentrations between 1997 and 1999 within the subtidal zone but a decrease within the intertidal zone. Cadmium and zinc concentrations were within the normal range of results for the past 10 years.

3.11 Contingency and Maintenance Plan

3.11.1 Condition 10.1 and 10.2

Condition 10.1 states that the consent holder shall maintain and upgrade its contingency and maintenance plan that formed part of the application for consent 02 4155. Condition 10.2 outlines what this plan should, at a minimum, address. The points are presented in the table to follow. During the most recent compliance visit undertaken for this report each point was checked, the results of which are summarised in that table.

Table 5 Contingency and Maintenance

Environmental Plan Issue As Required by Condition 10.2	Plan Implemented	Comments
Plans of areas and frequency of vacuum sweeping	Yes	Some product was present on roads outside buildings
Code of Practice for loading and covering of trucks and wagons transporting product to and from the site	Yes	Demonstration of loading given at time of site visit, little product seen outside of loading area.
Ensuring that loading of product is done indoors	Yes	See note above.
Maintenance of product store doors and keeping these doors closed except when in use	No	Product store doors were open at time of visit, some product evident outside
Ensuring that spills of products are cleaned up with appropriate tools available	Yes	See note above. Also grease and waste drums not stored in appropriate fashion or banded area
Checking of the site on a weekly basis for product leakage and ensuring these are stopped and spills cleaned up immediately.	No	Some product evident outside storage area
Investigation of alternative door types where existing doors fail regularly especially in the south end of the load out bay.	Yes	Alternative door working at south end load out bay
Stormwater grate labelling to indicate that drains flow to the natural environment	Yes	Stormwater grates labelled

Calibration of pH meters on a weekly basis.	No	No calibration records available.
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Chapter 4: Consent 04 0056 Conditions and Compliance

The consent granted to BOP Fertiliser Limited 04 0056 process water discharge is reproduced in Appendix II. The conditions that require monitoring are reported below:

4.1 Condition 2 - Quantity and Rate

Condition 2 authorises the discharge of up to 1,900 cubic metres per day at a rate not exceeding 30 litres per second. This condition was changed on 10 March 1999 from a limit of 1,500 cubic metres per day. This condition was met on most occasions, but was exceeded on 10 March 1999 by 16% and between 23 April 2000 and 22 June 2000 by 6%. The later exceedance period relates to the increased efficiency of the salt water pump.

4.2 Condition 8.1 to 8.5 – Effluent Quality

These conditions stipulate a range and the maximum levels for a number of constituents as a result of instantaneous measurements. The constituents measured include pH, temperature, suspended solids, fluoride and total phosphorus.

Of the constituents measured only pH is required to be continuously monitored (condition 10.4), although this information is not supplied to the Regional Council. It is available on request.

Of the other constituents measured none of this information is required to be submitted to the Regional Council for compliance assessment.

4.3 Condition 8.6 – Effluent Quality

This condition requires the results of a weekly analysis based on a seven day composite of suspended solids, fluoride and total phosphorus not to exceed a range of concentration limits for the 50th, 95th and 100th percentiles within one calendar year.

Table 5 shows the compliance results for 1998 and 1999. BOP Fertiliser Limited met the compliance requirements for most constituents in both years. The only exception was for suspended solids in 1998, where the 95th and 100th percentiles were exceeded.

Table 6 Compliance Results for Effluent Discharges in Years Ending 1998 and 1999

Constituent	Year	50 th percentile	95 th percentile	100 th percentile
Suspended Solids	Limits	100	187	300
	1998	34.72	265.44	481.95
	1999	14.98	79.345	133.35
Fluoride	Limits	275	680	850
	1998	48.16	322.21	799.89
	1999	6.405	52.129	245.77
Total Phosphorus	Limits	20	50	80
	1998	5.18	12.355	32.06
	1999	3.36	9.94	43.12

4.4 Condition 8.7 Effluent Quality

This condition states that:

“In any two month period and based on weekly analysis of the representative seven day composite sample of the discharge, the mean weekly mass (as measured in kilograms per day) shall not exceed the following quantities:

Suspended Solids 150 kg/day

Fluoride 400 kg/day

Total Phosphorus 30 kg/day”

This condition is based on the net load of constituent discharging from the effluent into the marine environment. This condition appears to be confusing as to its exact requirement. It is assumed that the limits are for a total weekly discharge as against a daily discharge. All of the constituents tested for met the requirement of the condition assuming that it is based on a weekly mass loading.

4.5 Condition 10.2 Monitoring

This condition requires extra nutrient and heavy metal analysis to be carried out on every fourth composite sample, this gives a monthly result. This condition does not set any limits for the various constituents from an assessment point of view.

Returns for this condition have been supplied and recorded on the Environment B·O·P database up to 4 August 1998. On 25 August 1999 BOP Fertiliser requested that analysis be dropped back to twice per annum. This was agreed to by the Principal Compliance Officer in a letter dated 22 October 1999. However, since that time there has been no formal request for a change to the consent conditions and there has been no subsequent compliance returns. In conclusion BOP Fertiliser have been in breach of this condition since September 1999.

Table 7 gives a summary of the returns from May 1998 to August 1999, compared to the ANZECC (1992) Guidelines for the protection of aquatic ecosystems in Marine Waters.

Table 7 Nutrient and Heavy Metal Analysis of the Effluent Discharge

Range/Constituent	TKN	NH3-N	NO3-N	NO2-N	As	Cd
Max	1.4	0.29	2.4	0.125	0.1	0.0007
Min	0.6	0.01	0.008	0.003	0.02	0.0001
Average	0.96	0.12	1.422	0.025	0.058	0.0003
ANZECC Level	NL	NL	<0.005	NL	0.05	0.002

Range/Constituent	Cr	Mg	Cu	Zn	V	U
Max	0.032	0.002	0.145	0.264	0.004	0.0015
Min	0.006	0.0001	0.0163	0.031	0.001	0.0001
Average	0.013	0.0004	0.045	0.087	0.002	0.0005
ANZECC Level	0.05	0.0001	0.005	0.05	NL	NL

Comparison with the ANZECC guidelines show the average nitrate, and zinc concentrations exceed the ANZECC level for the protection of aquatic ecosystems in marine waters assuming a 10 x dilution at the outfall. Of the exceedances some of the zinc could be attributed to the presence of a major roadway along the north and western boundary of the site and the close proximity of other industrial sources. However, the high nitrate concentration in the effluent discharge is a concern. It is recommended that this condition be reviewed when the consent comes up for renewal and that BOP Fertiliser undertake a review of their plant setup in order to reduce the nitrate concentration in its effluent discharge.

4.6 Condition 10.4 - Monitoring – pH

As this condition reads BOP Fertiliser are required to continuously monitor their effluent discharge of pH. Condition 11.2 of the consent requires all monitoring result is to be supplied to the Regional Council. However the pH results supplied to the Regional Council are for the composite samples. No actual continuous pH results appear on file or in the database. The continuous log of pH results would be impractical for the Regional Council to analyse and the information currently supplied is considered to meet a desired minimum requirement for information.

As it stands BOP Fertiliser are not meeting this consent condition. However, the condition is impractical as it reads and should be reviewed at the time of consent renewal.

4.7 Condition 11. 1 - Volume of Effluent Discharged

This condition requires the volume of effluent discharged each day to be recorded to an accuracy of $\pm 10\%$. This condition does appear to be complied with.

Chapter 5: Summary and Conclusions

5.1 **02 4155 Stormwater Consent**

- 5.1.1 There is an additional stormwater discharge point into the drain running along the southern property boundary.
- 5.1.2 The average and maximum suspended solid concentrations at both outfalls comply with the consent conditions.
- 5.1.3 The ammoniacal nitrogen concentrations at the southern outfall exceed both the maximum and average allowable limits for all of the samples taken.
- 5.1.4 The total phosphorus concentrations at both the northern and southern outfall exceeded the maximum and average allowable limits on most occasions.
- 5.1.5 Comparison of monitoring results between 1999 and 2000 (to date) show a reduction in suspended solids for both outfalls, but an increase in ammoniacal nitrogen for both outfalls with an increase in total phosphorus and fluoride at the northern outfall.
- 5.1.6 The results of the 1999 environmental monitoring report show a slight increase in fluoride and phosphorus in the seawater and sediments immediately adjacent to the outfalls with an increase in fluoride concentrations in shellfish flesh. The heavy metal constituents analysed for were within background concentrations.

5.2 **04 0056 – Cooling Water and Wastewater Discharge**

- 5.2.1 The amount of wastewater to be discharged was increased on 10 March 1999 from 1,500 m³/day to 1,900 m³/day. Even at the greater discharge volume BOP Fertiliser exceeded the permitted volume by 6% for a two month period.
- 5.2.2 BOP Fertiliser met the requirements for effluent quality for fluoride and total phosphorus. Suspended solids concentrations exceeded the 95 percentile and 100 percentile in 1998 but met compliance requirements for 1999.
- 5.2.3 The mean weekly mass limits for suspended solids, fluoride and total phosphorus met the consent requirements.
- 5.2.4 Nutrient and heavy metal analysis of wastewater as set out in condition 10.2 show high concentrations of nitrate and zinc are being discharged in excess of the ANZECC (1992) levels for the protection of aquatic ecosystems in marine waters.

However, the ANZECC levels have only been used as a guideline for comparative purposes and have no legal standing with respect to compliance of this consent.

Appendices

Appendix I – Consent 02 4155

Appendix II – Consent 04 0056

Appendix III – Stormwater Drain Layout

Appendix I – Consent 02 4155

Consent Number: 02 4155

BAY OF PLENTY REGIONAL COUNCIL RESOURCE CONSENT

Pursuant to section 105 of the Resource Management Act 1991, the **ENVIRONMENTAL MONITORING COMMITTEE** acting under delegated authority from **THE BAY OF PLENTY REGIONAL COUNCIL**, by a decision dated 19 January 1995, **HEREBY GRANTS** to:

BAY OF PLENTY FERTILISER COMPANY LIMITED

Private Bag
MOUNT MAUNGANUI

A permit to **DISCHARGE STORMWATER FROM TWO STORMWATER OUTFALLS TO TAURANGA HARBOUR** subject to the following conditions:

1 PURPOSE

For the purpose of discharging stormwater from a fertiliser factory site at the Grantees property, Hewletts Road, Tauranga via two stormwater outfalls to Tauranga Harbour.

2 DISCHARGE RATE

The total rate of discharge shall not exceed 3,200 litres per second.

3 POINTS OF DISCHARGE

SEE CHANGE:

3.1 Two separate outfalls discharging to Tauranga Harbour as shown on Murray North plan number 210383/CO2 submitted with the application number 04 0055.

3.2 A single outfall discharging to the open drain on the southern property boundary as shown on BOPRC plan number RC 02 4155(a).

4 MAP REFERENCES

SEE CHANGE:

Northern Outfall	NZMS 260 U14 907 878
Southern Outfall	NZMS 260 U14 907 877
Outfall to Open Drain	NZMS 260 U14 909 877

Consent Number 02 4155**5 LEGAL DESCRIPTION**

Tauranga Harbour adjacent to section 73, Block VII, Tauranga Survey District (Tauranga District).

6 DISCHARGE POINTS

SEE CHANGE:

6.1 The north and south outfalls shall be designed and constructed as shown on Bay of Plenty Fertiliser Limited plan numbers SK 443 and SK 444 submitted with the application number 04 0055. The outfall on the southern property boundary shall be installed as shown on BOPRC plan number RC 02 4155.

~~6.2 To collect and discharge into the main stormwater system (as covered by this consent), discharges from the two outfalls at the drain aligned along the property southern boundary.~~

7 WATER QUALITY

7.1 Stormwater discharged shall be free of floatable solids and oil and grease.

7.2 The Grantee shall exercise control to prevent introduction into the stormwater system of toxic substances that may be harmful to any form of aquatic life.

7.3 Any stormwater discharged shall meet the following standards.

7.3.1 The pH shall be within the range of 4.0 to 9.0 units.

7.3.2 The total phosphorus concentration shall not exceed 180 g/m³ and the average total phosphorus concentration discharged over any 12 month period shall not exceed 60 g/m³.

7.3.3 The ammoniacal nitrogen concentration shall not exceed 90 g/m³ and the average ammoniacal nitrogen concentration discharged over any 12 month period shall not exceed 30 g/m³.

7.3.4 The suspended solids concentration shall not exceed 300 g/m³ and the average suspended solids concentration discharged over any 12 month period shall not exceed 100 g/m³.

Note: The Grantee shall monitor pH on a continuous basis to ensure compliance with condition 7.3.1 above.

Consent Number 02 4155**8 SAMPLING PROGRAMME**

8.1 During the term of this consent the Grantee shall undertake a sampling programme to measure and record levels of the following contaminants during discharge from the stormwater system. This shall include sampling of six major rainfall events each year. For each rainfall event the determinants listed below shall be sampled within the first half hour then every half-one hour during the storm event for up to six samples and the flow shall be measured continuously.

- Suspended solids
- Total Phosphorus
- Ammoniacal Nitrogen
- Fluoride

8.2 The Grantee shall undertake specific sampling of stormwater around the main load out area to determine concentrations of:

- Suspended solids
- Total Phosphorus and
- Ammoniacal Nitrogen

This sampling shall take place during at least four occasions per year.

8.3 The results of the above sampling programme and the storm hydrographs shall be sent to the Regional Council within one month of sampling.

9 ENVIRONMENTAL MONITORING

9.1 The Grantee shall continue to undertake environmental surveys within the receiving environment adjacent to these discharge locations. These surveys shall be undertaken at least once every three years and the results compared with environmental condition within the Tauranga Harbour remote from these or any other significant wastewater discharge.

9.2 The environmental stormwater monitoring shall:

- Determine receiving water quality around each stormwater outfall during stormwater discharge, and specifically monitor pH values around the outfalls at low tide, and
- Determine contamination of sediment and shellfish around the discharge location as a result of stormwater and process water discharge from the BOP Fertiliser site.

Consent Number 02 4155

- 9.3 The results of this monitoring shall be sent to the Regional Council within 6 months of the survey.
- 9.4 The Grantee shall investigate and report on the pH of the groundwater discharge from the No. 3 pumping bore, by June 1996. Measurements and analysis shall relate to the nature of the groundwater discharge at the wellhead.

10 CONTINGENCY AND MAINTENANCE PLAN

- 10.1 The Grantee shall maintain and from time to time upgrade its contingency and maintenance plan, entitled "Environmental Plan" submitted with this application. This plan shall be aimed at minimising the discharge of contaminants to the stormwater system.
- 10.2 The "Environment Plan" shall be required to address at least the following matters:
- Contain plans of areas and frequency of vacuum sweeping around the site.
 - Detail a code of practice for loading and covering of trucks and wagons transporting product to and from the site.
 - Specify that loading of products onto any vehicles shall be undertaken indoors, (except non-soluble phosphate rock which may be loaded outdoors when necessary).
 - Details maintenance of product store doors so that they can be closed except when in use.
 - Details of issuing and policing instructions that all spills of products are to be immediately cleaned up and provide hand tools on all loader vehicles to enable thorough recovery.
 - Details of a system of checking the site on a weekly basis for product leakage from buildings and ensuring that these leaks are stopped and cleaned up immediately.
 - Investigation into alternative door types where existing doors fail regularly and cannot be shut when not in use, especially the south end of the main load out bay.
 - Details of stormwater grate labelling to indicate that drains flow to the natural environment.
 - Calibrating the pH meter to upper and lower limits on a weekly basis.

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- 10.3 The Grantee shall maintain logs of:
- 10.3.1 Vacuum sweeping frequency, locations swept and mass of material recovered.
 - 10.3.2 The date when doors fail to operate and the date when they are repaired.
 - 10.3.3 Regular weekly checks for leakage of product from buildings or conveyors, the locations of leaks and the mass or volume of fertiliser recovered. These logs shall be made available to Regional Council staff on request.
 - 10.3.4 Weekly pH meter calibrations.

11 REVIEW OF CONDITIONS

The Bay of Plenty Regional Council may, within six months after receipt of the report specified in condition 9.4, serve notice on the Grantee under section 128(1)(a)(ii) of the Resource Management Act 1991 of its intention to review condition 7.3.1 of this consent. The purpose of such a review is, to raise the minimum permitted pH level of the discharging stormwater from 4 to 5, thereby minimising potential adverse effects on the receiving environment.

12 TERM OF PERMIT

This permit shall expire on 31 July 2001.

13 RESOURCE MANAGEMENT CHARGES

The Grantee shall pay to the Bay of Plenty Regional Council such administrative charges as are fixed from time to time by the Regional Council in accordance with section 36 of the Resource Management Act 1991.

14 THE PERMIT hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw

Consent Number 02 4155

DATED at Whakatane this 1 day of March 1996

For and on behalf of
The Bay of Plenty Regional Council

J A Jones
General Manager

CHANGE

The change of this resource consent was approved under delegated authority of the Bay of Plenty Regional Council, dated 24 June 1998, as follows:

To delete condition 6.2

To alter condition 6.1 to read:

The north and south outfalls shall be designed and constructed as shown on Bay of Plenty Fertiliser Limited plan numbers SK 443 and SK 444 submitted with the application number 04 0055. The outfall on the southern property boundary shall be installed as shown on BOPRC plan number RC 02 4155.

To alter condition 3 to read:

- 3.1 *Two separate outfalls discharging to the Tauranga Harbour as shown on Murray North plan number 210383/C02 submitted with the application number 04 0055.*
- 3.2 *A single outfall discharging to the open drain on the southern property boundary as shown on BOPRC plan number RC 02 4155 (a)*

Alter condition 4 to read:

Northern Outfall	NZMS 260 U14 907 878
Southern Outfall	NZMS 260 U14 907 877
Outfall to Open Drain	NZMS 260 U14 909 877

R B Gardner
Manager Consents & Compliance

For J A Jones
General Manager

Appendix II – Consent 04 0056

Consent Number: 04 0056

BAY OF PLENTY REGIONAL COUNCIL RESOURCE CONSENT

Pursuant to section 105 of the Resource Management Act 1991, and to a decision of the **PLANNING TRIBUNAL** dated 15 March 1993, **THE BAY OF PLENTY REGIONAL COUNCIL HEREBY GRANTS** to:

BAY OF PLENTY FERTILISER LTD

Private Bag
MOUNT MAUNGANUI-SOUTH

A permit to **DISCHARGE FERTILISER FACTORY COOLING WATER AND WASTE WATER INTO TAURANGA HARBOUR** subject to the following conditions:

1 PURPOSE

For the purpose of discharging cooling water and waste water from the Grantee's fertiliser factory at Hewletts Road, Mount Maunganui.

2 QUANTITY AND RATE

CHANGE

The daily quantity of cooling water and waste water discharged shall not ~~1,500~~ 1,900 exceed cubic metres per day and the rate of discharge shall not exceed 30 litres per second.

3 POINT OF DISCHARGE

Tauranga Harbour as shown on plan number RC 04 0056 submitted with the application. Effluent shall be discharged via a diffuser structure as shown on Bay of Plenty Fertiliser Limited plan number ME 222 submitted with the Grantee's coastal permit application number 04 0047.

4 MAP REFERENCE

NZMS 260 U14:907 879

5 LEGAL DESCRIPTION

The Grantee's property is described as section 73, Block VII, Tauranga Survey District (Tauranga District).

Consent Number: 04 0056

6 TREATMENT SYSTEM OPERATION AND MAINTENANCE

The wastewater treatment and disposal system shall be operated and maintained at all times to the satisfaction of the General Manager of the Regional Council or his delegate.

7 EFFLUENT ANALYSIS AND MONITORING

- 7.1 The Grantee shall maintain an easily accessible sampling point on the outfall line where a representative sample of the effluent can be obtained.
- 7.2 Effluent analysis shall be carried out as set out in the latest edition of "Standard Methods for the Examination of Water and Waste Water" APHA-AWWA-WDCF or such other method that may be approved by the General Manager of the Regional Council or his delegate.

8 EFFLUENT QUALITY

- 8.1 The instantaneous pH shall be within the range 2.5 - 9.0.
- 8.2 The instantaneous temperature shall not exceed 50°C.
- 8.3 The instantaneous suspended solids concentration shall not exceed 200 g/m³
- 8.4 The instantaneous fluoride concentration shall not exceed 600 g/m³
- 8.5 The instantaneous total phosphorus concentration shall not exceed 60 g/m³
- 8.6 In any one calendar year and based on a weekly analysis of representative seven day composite sample of the discharge, the 50th, 90th and 100th percentiles of the distribution of weekly mass discharges (as measured in kilograms/per day) of the following parameters, shall not exceed the relevant stated percentiles:

	50-%ile	95-%ile	100-%ile
Suspended Solids	100	187	300
Fluoride	275	680	850
Total Phosphorus	20	50	80

- 8.7 In any two month period and based on weekly analysis of the representative seven day composite sample of the discharge, the mean weekly mass (as measured in kilograms per day) shall not exceed the following quantities:

Suspended Solids	-150 kg/day
Fluoride	-400 kg/day
Total Phosphorus	-30 kg/day

Consent Number: 04 0056

9 EFFLUENT VOLUME

The volume of effluent discharged each day shall be measured to an accuracy of $\pm 10\%$.

10 MONITORING

10.1 On a weekly basis a representative seven day composite sample of the discharge shall be analysed for pH, suspended solids, fluoride, total phosphorus and dissolved reactive phosphorus.

10.2 For every fourth composite sample collected as in 10.1 above, the Grantee shall have the sample analysed for the following determinands:

Arsenic
Cadmium
Chromium
Copper
Mercury
Uranium
Vanadium
Zinc
Nitrate nitrogen
Ammonium nitrogen
Total kjeldahl nitrogen

Following the analysis of six composite samples, the frequency of analysis for the above determinands may be reviewed by the General Manager of the Regional Council or his delegate on application by the Grantee.

10.3 For every fourth composite sample collected as in 10.1 above, an additional grab sample of the effluent shall be taken and analysed for those contaminants set out in 10.1 above.

10.4 The Grantee shall continuously record the pH of all effluent discharged.

11 REPORTS

Reports shall be forwarded to the Regional Council within 30 days of collection of the last composite sample for each month. The following matters shall be reported upon.

Consent Number: 04 0056

11.1 The volume of effluent discharged each day to an accuracy of $\pm 10\%$.

11.2 The results of analyses carried out as required by condition 10.

12 CONTINGENCY PLAN

The Grantee shall produce a contingency plan detailing provisions to prevent, and actions to be taken, in the event of a spillage or malfunction involving any hazardous or toxic material which may enter the process/cooling water discharge system. The plan shall be forwarded to the Regional Council no later than three months following the date of issue of this consent for written approval.

13 **THE GRANTEE** shall advise the Regional Council at least 15 working days in advance of any operational changes or changes in raw material usage that may significantly affect effluent quality. Where new phosphate rock types, for which there is no available analytical information, are proposed to be used, the Grantee shall provide a complete analysis to the Regional Council at least 15 working days before usage.

14 TERM OF PERMIT

This permit shall expire on 31 July 2001.

15 MANAGEMENT CHARGES

The Grantee shall pay the appropriate resource management charges under section 36 of the Resource Management Act associated with this consent.

16 **THE PERMIT** hereby authorised is granted under the Resource Management Act 1991 and does not constitute an authority under any other Act, Regulation or Bylaw.

DATED at Whakatane this 22nd day of April 1993

For and on behalf of
The Bay of Plenty Regional Council

J A Jones
General Manager

Consent Number: 04 0056

CHANGE

The change of this resource consent was approved under delegated authority of the Bay of Plenty Regional Council dated 10 March 1999, as follows:

Condition 2

Replace the number “1,500” with the number “1,900” such that the condition now reads:

The daily quantity of cooling water and wastewater discharged shall not exceed 1,900 cubic metres per day and the rate of discharge shall not exceed 30 litres per second.

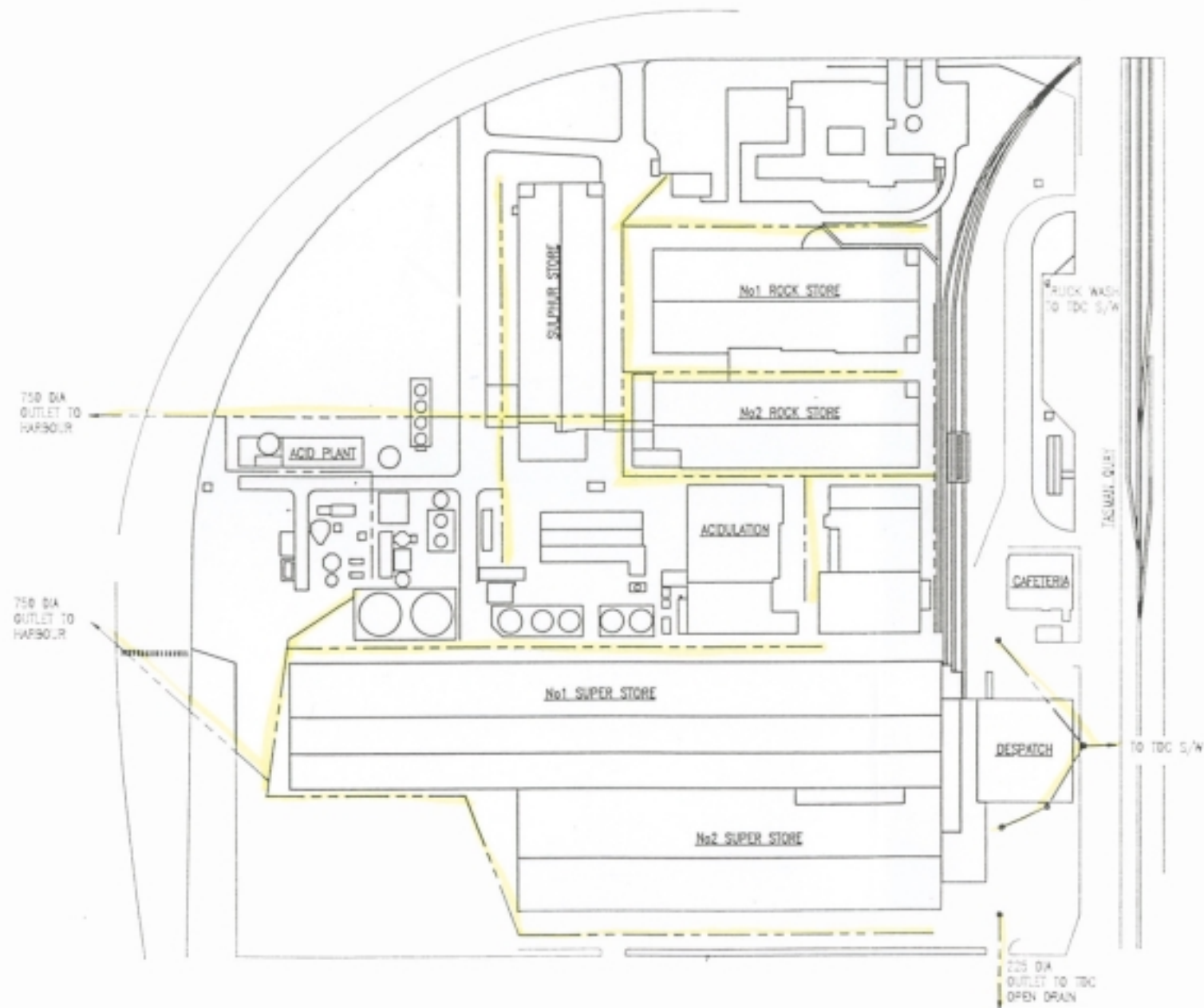
R B Gardner

Manager Consents and Compliance

for J A Jones

Chief Executive

Appendix III – Stormwater Drain Layout



NO	DATE	DESCRIPTION	BY

design	K.R.A.	checked	
drawn	K.R.A.	approved	
drawing status			



engineers architects surveyors planners managers

Murray-No. Limited
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client
**BAY OF PLENTY
 FERTILISER Ltd.**

project
**MOUNT MAUNGANUI
 SITE SERVICES**

drawing title
STORMWATER LAYOUT

scale
 N/A

drawing number
210383/C02 REV 1