

Our ref: DP050561Ab

28<sup>th</sup> February 2013

Ravensdown Fertiliser Co-operative Ltd  
Private Bag 6012  
Hawke's Bay Mail Centre  
**NAPIER 4142**

Attention : Carla Pell

Dear Madam

**COMPLIANCE MONITORING – DP050561AB – 808 WAITANGI ROAD**

Following up on compliance monitoring of the above resource consent for the 2012/13 year, I have compiled your report.

This report identifies some non-compliance and this is reflected in the report's overall grading.

Please note that under Section 36 of the Resource Management Act 1991 you will be charged for the actual and reasonable costs involved in monitoring the resource consent. An account for this monitoring year will be sent after 30 June 2013.

Please contact me should you need to discuss any issues raised in the report.

Yours faithfully



**JIM MAY**  
**ENVIRONMENTAL OFFICER - COMPLIANCE**  
**RESOURCE MANAGEMENT GROUP**  
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<b>Consent Holder</b>	Ravensdown Fertiliser Co-operative Limited	<b>Consent No</b>	DP050561Ab
<b>Client Address</b>	Private Bag 6012 Hawke's Bay Mail Centre NAPIER 4142	<b>Site Address</b>	808 Waitangi Road, Awatoto
<b>Contact Name</b>	Carla Pell	<b>Phone</b>	(06) 835 9227
<b>Job Code</b>	456007	<b>Mobile</b>	021 227 4175
		<b>Consent Type</b>	Discharge Permit

**Activity Description:**

To discharge contaminants into the air from the operation of the company's fertiliser manufacturing plant at Awatoto, including the following processes:  
 The manufacture of sulphuric acid,  
 The manufacture of superphosphate fertiliser,  
 The storage, blending and dispatch of bulk and bagged fertilisers and sulphuric acid,  
 The receipt and storage (inside and outside) of raw materials and imported fertiliser,  
 General site operations

<b>20-Aug-12</b>	Monitoring Inspection	<b>Officer</b>	Jim May
<b>04-Sep-12</b>	Monitoring Report Sent	<b>Officer</b>	Barbara McKenzie
<b>25-Oct-12</b>	Monitoring Report Sent	<b>Officer</b>	Barbara McKenzie
<b>15-Nov-12</b>	Monitoring Inspection	<b>Officer</b>	Jim May
<b>16-Nov-12</b>	Monitoring Inspection	<b>Officer</b>	Jim May
<b>19-Nov-12</b>	Monitoring Inspection	<b>Officer</b>	Jim May
<b>28-Feb-13</b>	Monitoring Report Sent	<b>Officer</b>	Barbara McKenzie

**2012-2013 Statement of Compliance and Overall Grades:**

**Grade Date** 31-Aug-12  
**Environmental Grade** Compliance  
**Technical Grade** Compliance

**Overall Comments:**

Full compliance with all applicable conditions, has been achieved.

**Grade Date** 23-Oct-12  
**Environmental Grade** Compliance  
**Technical Grade** Compliance

**Overall Comments:**

Condition 28 testing confirms compliance with the required opacity level for the auxiliary boiler.

**Grade Date** 25-Feb-13  
**Environmental Grade** Non Compliance  
**Technical Grade** Compliance

**Overall Comments:**

The non-compliance relates to condition 19. Council received the certification for the acid plant absorbing tower after due date. Please note that this condition is now historical.

**Previous Statement of Compliance and Overall Grades:**

Grade Date 01-Feb-12

Environmental Grade Compliance

Technical Grade Compliance

Overall Comments:

Condition 28 could not be assessed because the Ringlemann test was not conducted during the warm up period. Full compliance with all the other conditions.

Refer to back page for grading information

<b>Condition No.</b>	<b>Type of Condition</b>	<b>Consent Condition and Compliance Assessment</b>
1	Technical	All works and structures relating to this resource consent shall be designed and constructed to conform to the best engineering practices and at all times maintained to a safe and serviceable standard.
	Compliance	01-Feb-12
	<b>Compliance</b>	31-Aug-12 <b>The manufacturing plant is shut for maintenance and the acid plant is undergoing the required upgrade.</b>
2	Technical	The consent holder shall undertake all operations in accordance with any drawings, specifications, statements of intent and other information supplied as part of the application for this resource consent. If a conflict arises between any conditions of this consent and the application, the conditions of this consent will prevail.
	Compliance	01-Feb-12
	<b>Compliance</b>	31-Aug-12 <b>Understood to be the case.</b>
3	Environmental	There shall be no discharge of particulate matter (including dust) that causes an offensive or objectionable effect beyond the boundary of the site. Compliance with Conditions 6 to 13 does not automatically result in compliance with this condition.
	Compliance	01-Feb-12 There have not been any complaints for particulate matter from this site.
	<b>Compliance</b>	31-Aug-12 <b>Council has not received any complaints for particulate matter.</b>
4	Environmental	There shall be no discharge of odour that causes an offensive or objectionable effect beyond the boundary of the site.
	Compliance	01-Feb-12 There have not been any odour complaints.
	<b>Compliance</b>	31-Aug-12 <b>Council has not received any complaints for odour.</b>
5	Environmental	Notwithstanding any other condition of this consent, there shall be no noxious or dangerous levels of gases, airborne liquid or other airborne contaminants beyond the legal boundary of the site, that are likely to cause adverse effects on human health, ecosystems or property. [Note: for the purpose of this condition the term 'property' shall mean 'land and all assets on it'].

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	01-Feb-12 There have not been any complaints for noxious or dangerous contaminants beyond the site boundary.
	Compliance	31-Aug-12 <b>Council has not received any complaints for noxious or dangerous gas levels.</b>
6	Environmental	All bulk raw materials stored on site shall be kept in enclosed buildings, with the exception of phosphate rock which must otherwise be securely contained to minimise particulate being discharged into air.
	Compliance	01-Feb-12 All bulk raw materials were stored inside enclosed buildings. A new store is being constructed at this time.
	Compliance	31-Aug-12 <b>All product and rock have been stored in buildings.</b>
7	Environmental	The consent holder shall use its best endeavours to avoid outside storage of phosphate rock. Any outside storage shall be undertaken in accordance with the Investigation and Management Plan, as required by Condition 67 of this consent. Outside storage, excluding the management of spills, shall only be undertaken in the area to the south of the Acid Plant.
	Compliance	01-Feb-12 There was nothing stored outside.
	Not applicable	31-Aug-12 <b>There has not been any outside storage.</b>
8	Technical	At least 10 working days prior to the use of outside product storage the Consent Holder shall notify the Council that product shipments will be arriving which cannot be stored inside. Notification shall include the following: <ul style="list-style-type: none"> <li>a. A summary of why alternative covered storage is not possible; and</li> <li>b. The product type to be stored outside; and</li> <li>c. The likely volume of product to be stored outside; and</li> <li>d. The estimated date of arrival and the time it will take to place product at the outside location; and</li> <li>e. Estimated duration that the product will be stored outside.</li> </ul>
	Not applicable	01-Feb-12 There was nothing stored outside.
	Not applicable	31-Aug-12 <b>There has not been any outside storage.</b>
9	Environmental	No outside unloading, pile forming or loading shall occur when average hourly wind speed exceeds 5 metres per second (m/s). The wind speed shall be determined by an onsite meteorological station in accordance with Condition 42 of this consent.
	Not applicable	01-Feb-12 There was nothing stored outside.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	<b>Not applicable</b>	31-Aug-12 <b>There has not been any outside storage, so no outside loading/unloading required.</b>
10	Environmental	The consent holder shall carry out the suppression of dust with use of water through various methods that include, but are not limited to, spraying with water cart or sprinkler system to minimise the discharge of all visible dust beyond the site boundary, particularly during the loading, transfer and stockpiling of product. The control of dust discharges from stockpile areas shall include night-time and weekend hours.
	Compliance	01-Feb-12 Dust was controlled on site.
	<b>Not applicable</b>	31-Aug-12 <b>There has not been any outside storage.</b>
11	Environmental	Notwithstanding Condition 10 the consent holder shall establish and maintain an automated dust suppression sprinkler system that covers all outside storage piles, except for the working face while being worked, which will activate and remain operational for the duration of outside product pile storage, including unloading and loading. The sprinkler system shall have a capacity in terms of volume and layout that will ensure adequate dampening down of the stockpile in all possible wind conditions.
	Not applicable	01-Feb-12 There was nothing stored outside.
	<b>Not applicable</b>	31-Aug-12 <b>There has not been any outside storage.</b>
12	Environmental	The consent holder shall ensure regular sweeping of yard and road areas using mechanical cleaning to minimise dust emissions.
	Compliance	01-Feb-12 The site is swept monthly.
	<b>Compliance</b>	31-Aug-12 <b>A contractor regularly sweeps the yard and roads. Stormwater from the open drain along the road has now been piped.</b>
13	Technical	The consent holder shall ensure that the product storage pile does not exceed 4 metres in height.
	Not applicable	01-Feb-12 There was nothing stored outside.
	<b>Not applicable</b>	31-Aug-12 <b>There has not been any outside storage.</b>
14	Environmental	Except for discharges from the auxiliary boiler, furnace stack, economiser stacks and other minor vents, all discharges from the acid plant shall be via an emission stack with a height no less than 55 metres above ground level.
	Compliance	01-Feb-12 The replacement acid plant stack is the same height as the previous stack.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 <b>The replacement stack is 55 metres above ground level (design).</b>
15	Environmental	The emission rate of Sulphur Dioxide (SO <sub>2</sub> ) measured by continuous monitoring in the acid plant stack shall not exceed 1.5 kilograms (kg) per minute (two minute average) and 60 kg/hour (one-hour average) at any time.
	Compliance	01-Feb-12 Reported data confirms compliance with this requirement.
	Compliance	31-Aug-12 <b>Test results in the monthly reports demonstrate compliance with this requirement.</b>
16	Environmental	Notwithstanding Condition 15, the combined discharge rate of SO <sub>2</sub> , Sulphur Trioxide (SO <sub>3</sub> ) and Sulphuric Acid (H <sub>2</sub> SO <sub>4</sub> ) from the sulphuric acid production process shall not exceed 60 kg/hr, expressed as SO <sub>2</sub> .
	Compliance	01-Feb-12 The acid plant automatically shuts down if this level is likely to be reached.
	Compliance	31-Aug-12 <b>Test results in the monthly reports demonstrate compliance with this requirement.</b>
17	Environmental	An Acid Plant cold start up sulphur ignition shall not occur:  a. between the hours of 1:00 am and 10:00 am on clear still mornings when the wind speed is less than 2 m/s and there is no cloud; and  b. when the wind direction is between 030 and 155 degrees (onshore winds).  Note: For the purposes of this consent, an acid plant cold start refers to starting the acid plant from cold, this occurs following a complete shutdown when the acid plant is starting from ambient temperatures and diesel is used to pre-heat the plant. An acid plant warm start refers to starting the acid plant when the plant is already warm, this occurs following a short plant stop, usually less than 8 hours, when the temperature in the acid plant has been maintained above a critical limit.
	Compliance	01-Feb-12 The acid plant cold start was planned to achieve compliance with this condition.
	Compliance	31-Aug-12 <b>Observed to be the case for the last "cold" start. Council will be informed as to when the acid plant will restart after this year's upgrade.</b>
18	Environmental	Subject to condition 21, the combined discharge rate of SO <sub>3</sub> and H <sub>2</sub> SO <sub>4</sub> (expressed as SO <sub>3</sub> ) from the sulphuric acid production process shall not exceed:  a. 2 kg/hr as a 1-hour average at any time;  b. 0.5 kg/hr for at least 50% of fixed 1-hour averages in any 3 month period.
	Compliance	01-Feb-12 Reported data confirms compliance with this requirement.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 Data graphs of the last "cold" start demonstrated compliance with this condition.
19	Environmental	The existing final acid plant absorbing tower shall be replaced with a new tower containing a high efficiency distribution system, high efficiency packing and high efficiency mist eliminators that reduces the acidity of emissions from the acid plant to ensure compliance with the conditions of this consent at all times. The new tower shall be installed and commissioned by 30th October 2012. A suitably qualified independent person approved by Council shall certify in writing that the new absorbing tower, as installed and operated, is capable of meeting the conditions of this consent. This certification shall be provided to the Council by 30th November 2012.
	Not applicable	01-Feb-12 This condition does not apply until 31 August 2012.
	Not applicable	31-Aug-12 This upgrade is underway at present. Approval for the Design Engineer was granted for Mr D Louie on 27 August 2012.  This condition will be assessed after the due date; 30 November 2012 when certification of this upgrade is required.
	Non Compliance	21-Feb-13 The final acid plant absorbing tower replacement was completed by the required date of 30 October 2012.  The consent holder found that the approved Engineer, Mr D Louie, could no longer provide the certification for this plant. Approval for an alternate Engineer, Mr R Davis was approved by Council 28 September 2012.  Mr Davis provided Council with his certification report for the new absorbing tower on 25 January 2013. The consent holder had communicated with Council prior to this date confirming that due to other circumstances, Mr Davis was not likely to be able to meet the required date of 30 November 2012.  This condition is now historical.
20	Environmental	The discharge from the acid plant stack shall be clear at all times, except that a visible white plume may occur within four hours of igniting sulphur in the case of a cold start up and within one hour in the case of a warm start up.
	Compliance	01-Feb-12 Observed to be the case.
	Compliance	31-Aug-12 The Council Officer has observed this to be the case, both during on-site inspections and observations made from off-site.
21	Environmental	The discharge from the acid plant may contain up to 150 milligrams per cubic metre (mg/m <sup>3</sup> ) at NTP SO <sub>3</sub> / H <sub>2</sub> SO <sub>4</sub> expressed as SO <sub>3</sub> for not more than 4 hours after igniting sulphur in the case of a cold start and not more than 1 hour in the case of a warm start up. This shall be measured in accordance with USEPA method 8 or another method as approved by Council.
	Compliance	01-Feb-12 The data provided demonstrates compliance with this requirement.



Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 <b>Data provided by the consent holder from cold and hot starts demonstrate compliance with this condition.</b>
22	Environmental	<p>The discharge from the acid plant shall not occur during wind directions between 030 and 155 (onshore winds) between the months of September to May inclusive, when either of the following meteorological conditions occur</p> <p>a. The relative humidity measured on-site at 10 metres above ground level is 92% or greater, wind speed at 10 metres above ground level is 3 m/s or less and it is not raining; or</p> <p>b. The relative humidity measured on-site at 10 metres above ground level is 95% or greater, wind speed at 10 metres above ground is greater than 3 m/s and it is not raining.</p> <p>Acid plant discharge shall cease within 30 minutes of the above meteorological conditions being detected and shall not recommence until these conditions have not occurred for a period of at least 30 minutes. Plant operators shall be alerted when the measured relative humidity at 10 metres above ground during onshore winds (030-155 degrees) exceeds 90%, and careful observation of meteorological conditions and the visible plume discharge shall occur during such conditions. A record shall be kept of the dates, time periods and meteorological conditions when the acid plant operation ceases according to this condition. This record shall be provided to the Council on request and otherwise annually.</p>
	Compliance	01-Feb-12 Reports provided show that the plant did not have to shut down due to these conditions.
	Compliance	31-Aug-12 <b>The consent holder monitors these climatic conditions and any plant shut-downs due to these requirements, is reported in the monthly reports.</b>
23	Environmental	A system shall be installed that automatically shuts off the sulphur feed to the burner so that the discharge to air rate of SO <sub>2</sub> , SO <sub>3</sub> and H <sub>2</sub> SO <sub>4</sub> from the sulphuric acid production process does not exceed Conditions 15 and 16.
	Compliance	01-Feb-12 A system has been installed.
	Compliance	31-Aug-12 <b>An automatic shut-off valve has been installed and maintained.</b>
24	Technical	<p>a. The consent holder shall install and operate at least two ambient SO<sub>2</sub> monitors around the acid plant in order to detect fugitive SO<sub>2</sub> emissions. The monitoring sites shall be located at or about the southern boundary of the "Winstones" site, as described in Condition 57, and at or about the engineering store compound, to the western side of the acid plant. The concentration of SO<sub>2</sub> in ambient air shall be monitored continuously (at least every minute) by UV fluorescence analysis or an alternative method agreed to in writing by the Council; and</p> <p>b. In the event that ambient concentrations of SO<sub>2</sub> measured at either the monitoring sites described by Condition 24(a) or the monitoring site described by Condition 57 exceed 350 µg/m<sup>3</sup> as a 10-minute average,</p>

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		immediate action shall be taken to ensure that measured SO2 concentrations are reduced to less than 350 µg/m3 as a 10 minute average. A record shall be kept of all occurrences when measured SO2 concentrations exceed this limit and the corrective action taken. This record shall be provided to the Council on request and otherwise annually.
	Compliance	01-Feb-12 The monitors have been installed.
	<b>Compliance</b>	31-Aug-12 <b>The ambient SO2 monitors have been installed as required. The results are reported in the consent holder monthly reports.</b>
25	Environmental	Discharge from the Auxiliary Boiler shall be via an emission stack of 15.8 metres above ground level.
	Compliance	01-Feb-12 This stack has not been altered.
	<b>Compliance</b>	31-Aug-12 <b>There has not been any change in height for this stack.</b>
26	Environmental	The diesel oil burning rate in the auxiliary boiler shall not exceed 580 litres per hour.
	Compliance	01-Feb-12 The burning rate has not changed.
	<b>Compliance</b>	31-Aug-12 <b>There has not been any change in burning rate for this boiler.</b>
27	Environmental	The auxiliary boiler and the pre-heater shall only burn diesel oil having a maximum sulphur content of 0.005% by weight. Documents showing fuel analysis shall be provided to the Council on request.
	Compliance	01-Feb-12 Documents on site show that the maximum sulphur content of the diesel is below the required level. (All NZ diesel is now below this level).
	<b>Compliance</b>	31-Aug-12 <b>This is a NZ standard for all diesel imported and supplied throughout NZ.</b>
28	Environmental	The opacity of emissions from the auxiliary boiler and pre-heater stacks shall not be darker than Ringelmann Shade 1 as determined in accordance with the New Zealand Standard 5201:1973, except for a period not exceeding 2 minutes in each hour of operation.
	Unable to be assessed	01-Feb-12 The Ringelmann test was not conducted. However, there were no complaints for these discharges during the warm up procedure and visually there was no issue with the discharge.
	<b>Not applicable</b>	31-Aug-12 <b>This test will be conducted when the acid plant is started after the plant upgrade.</b>  <b>This condition will be assessed after this time.</b>

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	23-Oct-12 The auxiliary boiler discharge test was Ringlemann Shade 0, tested 17 October 2012. This is better than the Ringlemann Shade 1 allowed for in the condition.
29	Environmental	The concentration of hydrogen sulphide (H <sub>2</sub> S) shall be measured in accordance with Condition 50 and shall not exceed 7 µg/m <sup>3</sup> (with a 1 hour averaging time) in the ambient air at or beyond the boundary of the premises as a result of emissions from the consent holder's property.
	Compliance	01-Feb-12 The hydrogen sulphide levels were continuously monitored 8 to 14 November 2011. The levels detected were well below the required limit. (Graph attached).
	Compliance	31-Aug-12 Council monitored the site for Hydrogen Sulphide. Results obtained demonstrate compliance with this requirement.
	Compliance	25-Feb-13 Council monitored this site 13 to 20 December 2012. While some of the data was lost, the results obtained show compliance with requirements.
30	Environmental	Discharges from each den scrubber shall be via stacks with a height of no less than 38 metres above ground level.
	Compliance	01-Feb-12 The height of these stacks has not changed.
	Compliance	31-Aug-12 The den discharges are from dual stacks that are greater than 38 metres above ground level.
31	Environmental	Discharges from the hygiene scrubber shall be via a stack with a height of no less than 36 metres above ground level.
	Compliance	01-Feb-12 The height of this stack has not changed.
	Compliance	31-Aug-12 The hygiene stack is greater than 36 metres above ground level.
32	Environmental	All emissions from the superphosphate manufacturing process shall be discharged through either the den stacks or the hygiene stack. Within 12 months of the commencement of this consent a report shall be provided by an independent suitably qualified person (approved by the Council) that certifies that all necessary remedial work to the ventilation and extraction system has been undertaken such that fugitive contaminant emissions from the manufacturing plant building have been eliminated as far as practicably possible. This ventilation and extraction system shall be maintained and operated at all times during the manufacturing of superphosphate.
	Not applicable	01-Feb-12 This condition is now historical.
	Not applicable	31-Aug-12 This work has been completed and this condition is now historical.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
33	Environmental	The 7-day average concentration of fluoride measured at the RFC SW monitoring site (location as detailed in Condition 54), shall not exceed 1.7 µg/m <sup>3</sup> .
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
34	Environmental	The 7-day average concentration of fluoride measured at the RFC NW monitoring site (location as detailed in Condition 54), shall not exceed 5.5 µg/m <sup>3</sup> .
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
35	Environmental	The rate of particulate matter discharged from any Bradley mill shall not exceed 1 kg/hr per mill, and 2 kg/hr in total when two or more mills are in operation.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
36	Environmental	The sum of the fluoride compounds discharged from the den stacks and the hygiene stack measured in the samples taken in accordance with Condition 49 expressed as fluoride on a one hour average basis, shall not exceed:  a. a maximum discharge rate of 1.5 kg/hr; and  b. 1 kg/hr in more than 50% of samples taken in any 12-month period
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
37	Environmental	A treatment system that reduces the acidity of emissions from the manufacturing plant shall be installed such that after 3 months from the commencement of this consent the pH of the condensate from the den and hygiene stacks shall be no lower than 2.7. The method by which the condensate is to be measured shall be approved in writing by the Council.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 A treatment system has been installed and results submitted in the monthly reports, demonstrate compliance with this condition.  This system is being reviewed for replacement.
38	Environmental	An automated water deluge system for the manufacturing den mixer shall be installed and maintained such that contaminant discharges are prevented in the event of failure of the mixing process.
	Compliance	01-Feb-12 The manufacturing system has been upgraded to one line now.
	Compliance	31-Aug-12 A system is in place.
39	Environmental	Until such time as the pH of the discharge from the manufacturing plant is consistently above 2.7, as required by Condition 37, when the wind speed at the site is no more than 3 m/s and the wind direction is between 030-155 degrees (i.e. on-shore) the manufacture of fertiliser shall only occur when either:  a. the temperature at the site is less than 22 C; and  b. the manufacturing stack plume is "OK" as indicated in the chart attached as Appendix "A".  OR  c. the temperature at the site is 22 C or more; and  d. it is daylight; and  e. the relative humidity at the site is less than 70%; and  f. there is no fog; and  g. the manufacturing stack plume is 'OK' as indicated in the chart attached as Appendix "A".  The time and duration of manufacturing plant stoppages due to meteorological conditions shall be recorded. These records shall be provided to the Council on request.
	Compliance	01-Feb-12 Monthly reports indicate that the manufacturing plant has not had to stop due to these conditions.
	Not applicable	31-Aug-12 A pH dosing system has been installed. This condition is now historical.
40	Environmental	The concentration of fluoride in ambient air measured in accordance with Condition 54 shall not exceed 0.8 µg/m <sup>3</sup> (7 day average) at areas used for horticultural production (including Brookfields Orchard and Plumpton Park (locations as detailed in Condition 54)).
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
41	Environmental	The evaporative cooling towers shall be regularly dosed with micro-biocides to maintain the concentration of the micro-biocide in the cooling water at the level recommended by the supplier that prevents the establishment of Legionella bacteria. Records shall be kept to demonstrate compliance with this condition and shall be provided to the Council on request.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	Compliance	31-Aug-12 <b>The cooling towers are regularly dosed with biocides, and test results are submitted with monthly reports.</b>  <b>The second cooling tower is being replaced at this time.</b>
	Compliance	25-Feb-13 <b>The second cooling tower has been replaced.</b>
42	Technical	The consent holder shall operate a meteorological data collection station in a location that reasonably represents meteorological conditions on the site. The station shall continuously record, wind speed, wind direction, temperature and relative humidity, and display them in real time in the manufacturing control room and the acid plant control room. The site location and the resolution, accuracy and averaging time of monitoring equipment shall be agreed in writing by the Council. All processed data shall be archived and made available to the Council on request.
	Compliance	01-Feb-12 The consent holder has made meteorological data available to Council from this station.
	Compliance	31-Aug-12 <b>The required meteorological station is operational and data has been supplied to Council when requested.</b>
43	Technical	All sampling and surveys shall be carried out by an independent suitably qualified person, or by the consent holder or its representative where the Council has agreed to this in writing. Where the consent holder or its representative carries out testing or monitoring, an independent suitably qualified person shall audit the monitoring and testing methodology at least once per year, unless otherwise agreed in writing by the Council, and shall provide a written report describing the extent of compliance with the required protocol. A copy of this report shall be provided to the Council.
	Compliance	01-Feb-12 EAM consultants conduct a number of the tests for the site and the Laboratory has accreditation.
	Compliance	31-Aug-12 <b>The site has maintained ISO 14001 Accreditation. The latest audit was conducted in July 2012. There were no corrective actions needed.</b>
44	Technical	All analyses in accordance with conditions on the consent shall be carried out by an independently accredited laboratory to ISO/IEC Guide 25, or to the satisfaction of the Council.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	01-Feb-12 Both the site laboratory and ARL has accreditation.
	Compliance	31-Aug-12
45	Technical	The consent holder shall continuously (i.e. at intervals not exceeding 1 minute) measure the rate of SO <sub>2</sub> discharge in the emissions from the acid plant stack. The method of measurement shall be in accordance with ISO7935:1992 (E) (Stationary source emissions – Determination of the mass concentration of sulphur dioxide – performance characteristics of automated measuring methods) or an alternative method, approved in writing by the Council. Testing results shall be reported as a mass emission rate in units of kg/hr as both 1-minute and 1-hour averages.
	Compliance	01-Feb-12 EAM consultants conduct the manual tests and calibration checks are conducted by the laboratory.
	Compliance	31-Aug-12 <b>A continuous in-line monitoring meter has been installed.</b>
46	Technical	All options for a continuous in-stack SO <sub>3</sub> /H <sub>2</sub> SO <sub>4</sub> monitoring system shall be reviewed and analysed every 18 months by a suitably qualified independent person. The independent reviewer shall prepare a written report detailing the viability and estimated cost of all monitoring options internationally available. This information shall be provided to the Council no later than one month after the time of review.  a. From 1st November 2012 continuous opacity measurements shall be undertaken in the acid plant stack at all times to provide an indication of acid mist emissions for operational purposes. Records of these measurements shall be kept and made available to Council on request.
	Not applicable	01-Feb-12 Options are to be reviewed next year.
	Not applicable	31-Aug-12 <b>Not required until 1 November 2012.</b>
	Compliance	01-Feb-13 <b>Council has received a consultant's report from the consent holder that reviews this requirement.</b>
47	Technical	The consent holder shall measure the rate of discharge of the SO <sub>2</sub> , SO <sub>3</sub> and H <sub>2</sub> SO <sub>4</sub> in the emissions from the acid plant stack, at least twice per week. This monitoring shall be undertaken in accordance with USEPA Method 8 ("Determination of sulphuric acid mist and sulphur dioxide emissions from stationary sources") or an alternative method that is approved, in writing, by the Council.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	Compliance	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
48	Technical	The discharge rate of the total sulphur compounds obtained in accordance

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		with Condition 47 shall be used in conjunction with the continuous record of sulphur dioxide obtained in accordance with Condition 45 to determine a continuous record of the rate of sulphur compounds discharged, expressed as SO <sub>2</sub> .
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
49	Technical	The consent holder shall measure the discharge rate of fluoride in the emissions from each of the den stacks and the hygiene stack, at least twice per week using wet chemistry methods. The measurement is to be carried out during superphosphate manufacture and no test may commence within one hour of starting acidulation. The method of measurements shall be in accordance with USEPA Method 13B ("Total fluoride specific ion electrode") or an alternative method approved, in writing, by the Council.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	<b>Compliance</b>	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
50	Technical	Concentrations of hydrogen sulphide in ambient air shall be monitored in accordance with the method of measurement (AS 3580.8.1 1990). The methods for sampling and analysis shall be automatic intermittent sampling - gas chromatographic method, or an alternate method approved in writing by the Council. The monitoring shall be carried out for a period of at least seven complete days at least twice per year. The location of the monitoring shall be agreed upon with the Council at the time of installation of the monitoring equipment. Results shall be reported as 1-hour averages.
	Compliance	01-Feb-12 Council conducted continuous monitoring for Hydrogen Sulphide 8-14 November 2011. There was full compliance with this condition.
	<b>Compliance</b>	31-Aug-12 <b>Council only conducted one week of monitoring this year. Council decided that from the results obtained, that there was no need for a second monitoring week.</b>
51	Technical	The rate of particulate matter discharged from each mill shall be measured at least once every 3 months. The method of sampling and analysis shall comply with USEPA Method 5 or Method 17, ISO 9096:2003 or ASTM D3685-98, or a similar iso-kinetic method to the satisfaction of the Council. The testing time for each sample shall be 2-hours continuous, and at least three samples shall be collected. Results shall be adjusted to 0 C, 101.3 kilopascals, on a dry gas basis, and as a mass emission from each stack expressed as kg/hr.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.



Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
52	Technical	Pressure and particulate in the baghouses serving the Bradley mills shall be continuously monitored and recorded to detect broken bags in the Bradley mills. A central alarm system shall be operated to warn the plant operator of a bag breakage or any change in pressure that may indicate a broken filter bag. The bag filters serving the Bradley mills shall also be manually inspected on a regular basis and shall be replaced where the inspection reveals excessive wear. Records shall be kept of bag filter pressure, Bradley mill shutdowns, manual inspections and filter bag replacements. These records shall be provided to the Council on request.
	Compliance	01-Feb-12
	Compliance	31-Aug-12 <b>Council has not requested these records.</b>
53	Technical	The pH of the condensate from the den scrubbers and the hygiene scrubber stacks shall be measured at least twice each week. The method by which the condensate is to be measured shall be approved in writing by the Council.
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	Compliance	31-Aug-12 <b>Results submitted in the monthly reports demonstrate compliance with this condition.</b>
54	Technical	The consent holder shall continuously measure ambient fluoride, in accordance with the monitoring plan required by Condition 68 and based on 7-day filter exposures and results reported as average concentration ( $\mu\text{g}/\text{m}^3$ ) over that 7-day sample period. Measurements shall be taken at no less than five sites, within 4 kilometres (km) of the plant, including those listed in Table 1 below;  Table 1: Ambient fluoride monitoring sample sites – see table in consent document  The location of the sites may be modified with the written approval of the Council.  [Note: Approval from property owners/occupiers for the placement and operation of monitors is required.]
	Compliance	01-Feb-12 Data contained in monthly reports demonstrates compliance with this requirement.
	Compliance	31-Aug-12 <b>Ambient fluoride monitoring is conducted as required.</b>
55	Technical	Ambient fluoride measurement undertaken in accordance with Condition 54 shall occur at a height of 2.4 metres above ground level with no obstruction above 2 metres high in the direction of the RFC plant for 50 metres, unless otherwise approved in writing by the Council.

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
	Compliance	01-Feb-12
	<b>Compliance</b>	31-Aug-12 <b>Ambient fluoride monitoring is conducted as required.</b>
56	Technical	The consent holder shall ensure ambient fluoride measurement is undertaken in accordance with AS3580.13.2 – 1991 (“Method 13.2: Determination of fluorides – Gaseous and acid soluble particulate fluorides – Manual, double filter paper sampling”) or an alternative method approved, in writing, by the Council.
	Compliance	01-Feb-12 Understood to be the case.
	<b>Compliance</b>	31-Aug-12 <b>Ambient fluoride monitoring is conducted as required.</b>
57	Technical	Concentrations of SO <sub>2</sub> in ambient air shall be monitored continuously according to the method of measurement AS3580.4.1 – 1990 (“Method 4.1: Determination of sulphur dioxide – direct reading instrumental method”), or an alternative method agreed to in writing by the Council. The monitoring shall begin within 3 months of commencement of this consent. The monitoring site shall be located at or about the southern boundary of the “Winstones” site, to the southeast of the den stacks, and in an area agreed to in writing by the Council prior to establishment. Results shall be provided as 1-hour and 24-hour averages. Any exceedance of the Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (NES) for SO <sub>2</sub> shall be reported as soon as it is known.
	Compliance	01-Feb-12 There is stack monitoring in place. Observed to be the case.
	<b>Compliance</b>	31-Aug-12 <b>The monitoring at this site is conducted by Watercare Services from Auckland.</b>
58	Technical	Concentrations of PM <sub>10</sub> in ambient air shall be monitored continuously according to a method of measurement that complies with the monitoring requirements in the NES, or an alternative method agreed to in writing by the Council. The monitoring shall begin within 3 months of commencement of this consent. The monitoring site shall be located at or about the southern boundary of the “Winstones” site, to the southeast of the den stacks, and shall be agreed in writing by the Council prior to establishment. Results shall be provided as a 24-hour average. Any exceedance of the NES for PM <sub>10</sub> shall be reported as soon as it is known.
	Compliance	01-Feb-12 Air Shed Monitoring is undertaken by WaterCare Services.
	<b>Compliance</b>	31-Aug-12 <b>The monitoring at this site is conducted by Watercare Services from Auckland.</b>
59	Technical	Continuous monitoring of total suspended particulate matter shall be undertaken at two locations at all times that bulk material is stored outside. The monitoring sites shall be at the eastern boundary at a location most affected by bulk material dust discharges and at a reference location at the northern end of the site. The monitoring shall have an averaging period of 24-hours or less and the method of monitoring shall be approved in writing by

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		the Council. Monitoring results shall be provided to the Council within two months of the cessation of bulk material storage and otherwise at least annually.
	Not applicable	01-Feb-12 There was no outside storage this year. A new store is being constructed at present.
	Compliance	31-Aug-12 <b>The monitoring at this site is conducted by Watercare Services from Auckland.</b>
60	Technical	Every 24 months, from the commencement of this consent, the consent holder shall review the available methodology for measuring acid deposition at no less than two sites in horticultural areas within 4 km of the plant and this information shall be provided to the Council. Any new methodologies will be reviewed against the current vegetation monitoring programme, as per Condition 66. The deposition monitoring protocol shall be determined in conjunction with and agreed to in writing by the Council prior to the commencement of monitoring.
	Not applicable	01-Feb-12 To be reviewed next year.
	Not applicable	31-Aug-12 <b>No satisfactory method is yet available.</b>
	Compliance	25-Feb-13 <b>Available methodology has been reviewed, with no satisfactory method being available yet.</b>
61	Technical	The consent holder shall undertake a survey every two years of the effects of fluoride etching on all properties (where the owner accepts the offer of a survey) within 1 km of the site using the methodology outlined in the BRANZ report DCZ059 (25 June 2004). Any windows found to be affected to 'pen test level 3' or where Light Gloss Units (LGU) are equal or less than 115 as described in BRANZ report DCZ059, shall be replaced by the consent holder if the property owner wishes the glass to be replaced.
	Compliance	01-Feb-12 Council has received a copy of this survey report.
	Compliance	31-Aug-12 <b>Council has received a copy of this survey.</b>
62	Technical	The consent holder shall advise the Council at least 24 hours in advance of a planned warm or cold start up of the acid plant. The Council shall be advised of the time when sulphur will be ignited and the person in charge of the procedure.
	Compliance	01-Feb-12 Council received notice well beyond the required time specified.
	Compliance	31-Aug-12 <b>Council has been advised of all planned acid plant starts.</b>
63	Technical	At monthly intervals the consent holder shall provide the Council with copies of all information (including test results, reports and records) required to be collected in accordance with the conditions of this consent during the previous month, unless the condition specifically allows the information to be

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		provided at a different interval. This information shall be provided in a report format, and shall comment on site performance and compliance with consent conditions.
	Compliance	01-Feb-12 Council has received monthly reports.
	<b>Compliance</b>	31-Aug-12 <b>Council receives monthly reports and air shed reports.</b>
64	Technical	<p>The consent holder shall produce a report every year (the 'annual report') that presents and summarises all information on the monitoring required by this consent. The report shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> <li>a. quantification of and assessment of the impact of discharges of dust, PM10, SO2, fluoride and acidic compounds; and</li> <li>b. the fluoride and foliar monitoring report; and</li> <li>c. the impact of odour and H2S discharges from the site; and</li> <li>d. a description of any potential and actual effects that have been identified; and</li> <li>e. identification of trends of monitoring information; and</li> <li>f. a summary of system modifications; and</li> <li>g. recommendations for system improvements; and</li> <li>h. the monthly fluoride content of phosphate rock blends.</li> </ul> <p>The annual report shall be prepared for the period beginning July and ending June of the following year and provided to the Council before 31 October each year.</p>
	Compliance	01-Feb-12 Council has received the annual report.
	<b>Compliance</b>	31-Aug-12 <b>Council received last year's annual report as required. It has been proposed that the one annual report cover all discharges on site. Changes will be required for the stormwater discharge consent condition.</b>
	<b>Compliance</b>	25-Feb-13 <b>Council has initiated a review of the Stormwater consent to rectify the Annual Report dates issue.</b>
65	Technical	<p>The consent holder shall maintain a log of all complaints received directly from the public. The log shall include;</p> <ul style="list-style-type: none"> <li>a. the date, time, and nature of the complaint; and</li> <li>b. the telephone number, and address of the complainant (as provided); and</li> <li>c. weather information (including an estimate of wind speed and direction); and</li> <li>d. details of key operating parameters at the time of the complaint; and</li> <li>e. the remedial action taken, as appropriate, to prevent further incidents.</li> </ul>

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		Complaints shall be reported to the Council within 12 hours of receipt and the log of complaints shall be made available to the Council on request.
	Compliance	01-Feb-12 The site has a formal complaints register.
	<b>Compliance</b>	31-Aug-12 <b>Council has not received any complaints.</b>
66	Technical	<p>The consent holder shall undertake a vegetation monitoring programme that has been approved by the Council in accordance with Condition 68 of this consent. The programme shall provide for the following matters:</p> <p>a. A visual assessment of vegetation; and</p> <p>b. A determination of foliar fluoride concentrations; and</p> <p>c. The timing of the vegetation monitoring programme (which shall occur during the months of September to May inclusive for the duration of the consent, unless otherwise agreed in writing by the Council); and</p> <p>d. The monitoring methodology which shall be agreed in writing by the Council; and</p> <p>e. The location of any monitoring, including but not limited to the following sites (Table 2):</p> <p>Table 2: Fluoride monitoring sample sites – see table in consent document.</p> <p>Provided that the location of the monitoring sites may be modified as appropriate with the written agreement of the Council.</p> <p>f. The requirement for the initial crop assessment to be completed within 12 months of the commencement of this consent; and</p> <p>g. The requirement for the consent holder to provide a report to the Council upon the completion of the first two years of vegetation monitoring, to determine whether the monitoring programme may be amended or modified as necessary;</p> <p>Provided that any amendments to the monitoring programme shall only occur with the written agreement of the Council.</p>
	Compliance	01-Feb-12 Council has received the 2010 - 2011 Report.
	<b>Compliance</b>	31-Aug-12 <b>Council and land owners have received a copy of last year's vegetation monitoring.</b>
67	Technical	<p>The consent holder shall prepare and submit to the Council for approval within two months of the date of commencement of this consent, a Management Plan that details how all discharges to air from the site and their effects shall be measured, assessed and managed. The Management Plan shall be complied with at all times during the exercise of this consent, and shall include but not be limited to the management of the following matters:</p> <p>a. Dust including particulate; and</p> <p>b. Outside phosphate rock storage; and</p>

Condition No.	Type of Condition	Consent Condition and Compliance Assessment
		<p>c. Sulphur dioxide; and</p> <p>d. Acidic discharges; and</p> <p>e. Fluoride; and</p> <p>f. Odour.</p> <p>The Management Plan shall specify all actions necessary to ensure ongoing compliance with all conditions of this consent. The consent holder shall update the Management Plan at least once every two years, and otherwise where necessary, with the written agreement of the Council.</p>
	Compliance	<p>01-Feb-12</p> <p>Council has received this Management Plan.</p>
	<b>Compliance</b>	<p>31-Aug-12</p> <p><b>There have not been any changes to this plan.</b></p>
<b>68</b>	Technical	<p>The consent holder shall prepare and submit to the Council for approval within two months of the date of commencement of this consent, a Monitoring Plan that monitors the impact of discharges to air from the site. The Monitoring Plan must be complied with at all times during the exercise of this permit, and shall include but not be limited to the following monitoring matters:</p> <p>a. Manufacturing stack monitoring requirements; and</p> <p>b. Acid plan stack monitoring requirements; and</p> <p>c. Dust monitoring requirements; and</p> <p>d. Ambient SO<sub>2</sub>, particulate matter and H<sub>2</sub>S monitoring; and</p> <p>e. Off site ambient fluoride monitoring requirements; and</p> <p>f. Off site crop fluoride monitoring requirements; and</p> <p>g. Sampling methods; and</p> <p>h. Analytical methods; and</p> <p>i. Reporting requirements; and</p> <p>j. Sampling locations; and</p> <p>k. Sampling frequencies; and</p> <p>l. Auditing and peer review.</p> <p>The consent holder shall update the Monitoring Plan at least once every two years, and otherwise where necessary, with the written agreement of the Council.</p>
	Compliance	<p>01-Feb-12</p> <p>Council has received this plan.</p>
	<b>Compliance</b>	<p>31-Aug-12</p> <p><b>There have not been any changes to this plan.</b></p>

## **Grading Information**

Each consent condition has been classified as either a Environmental or Technical condition.

### **Environmental conditions:**

Environmental conditions set standards/performance limits for a resource consent, or, mitigates an environmental impact of exercising a resource consent.

Examples of environmental conditions are:

- Installation of up-gradient cut-off drains/ placement of disposal fields
- volume limits of discharges
- water take rates and maximum volumes
- discharge or receiving water contaminant limits

### **Technical conditions:**

Technical conditions sets out technical requirements that allows a consent holder to demonstrate or measure that they meet the Environmental performance required by a resource consent, or help specify the activity authorised.

Examples of technical conditions are:

- sampling effluent/ recording discharge volumes / collating submitting data
- providing of reports/ plans/ designs specifications
- notifications, accreditation, authorities submissions for approval by ER Manager
- installation and maintenance of a water meter

You need to comply with all conditions regardless of whether it's a Environmental or Technical condition.





Ravensdown - H2S monitoring, 16 - 20 November 2012



