

BEFORE THE CANTERBURY REGIONAL COUNCIL

UNDER THE Resource Management Act 1991

AND

IN THE MATTER of application CRC190445 to Canterbury Regional Council by the Christchurch City Council for a comprehensive resource consent to discharge stormwater from within the Christchurch City area and Banks Peninsula settlements on or into land, into water and into coastal environments

AND

IN THE MATTER of the submission by Ravensdown Limited

STATEMENT OF EVIDENCE OF PETER WILLIAM HAY

24 October 2018

1. INTRODUCTION

- 1.1 My name is Peter Hay and I am the Works Manager of the Christchurch Works for Ravensdown Limited (Ravensdown). I have been employed by Ravensdown for a total of 20 years and have held a number of positions within the company in the areas of agronomy, logistics and stores operations. I have been in my current position for the last 12 years.
- 1.2 As the Christchurch Works Manager I am responsible for all aspects of the Works operation on site. The primary responsibilities include:
- (a) Safety and Wellbeing
 - (b) Environmental performance
 - (c) Production and efficient operations
 - (d) Staff management
 - (e) Customer service
 - (f) Financial performance

2. RAVENSDOWN CHRISTCHURCH

- 2.1 Ravensdown operates three manufacturing plants located at Napier, Dunedin and Christchurch. All plants manufacture sulphuric acid which is used in the manufacture of superphosphate products. Apart from the manufacturing processes all sites receive and despatch fertiliser products and other farm inputs to our customers.
- 2.2 The Christchurch plant is located at 312 Main South Road, Hornby. The site occupies approximately 14 hectares and sits within the Hornby Industrial area. The site was chosen because of its close proximity to a port, rail service, access to labour and, when commissioned in 1922, its rural location. Kempthorne Prosser established and operated the site until 1977, when Ravensdown was established with the merger of Dominion Fertiliser and Kempthorne Prosser.
- 2.3 The site has a staff of 50, with the primary activities being the import of raw materials and fertilisers, the manufacture of sulphuric acid and superphosphate products, and the storage and distribution of fertiliser products to the market. Volumes of raw materials brought in to the site are in the range of 220,000-280,000 tonnes per year while despatches of product are in the range of 270,000-320,000 tonnes per year. Truck movements peak at up to 130 per day.
- 2.4 The earthquakes of September 2010 caused significant damage to the site, with the acid plant down for 100 days as repairs were completed. Some of the older building (some original 1922) incurred structural damage so a redevelopment programme has been on-going at the site. During this redevelopment programme consideration and improvements have been made to our stormwater management.
- 2.5 The site had a significant fire on the 9th of October 2018, where four product stores (of 13 stores in total on site) and the intake system were damaged. The fire residue is

a mix of fibre glass fibres and material (from the cladding), rubber (conveyor belts), wood and possibly some metal. The Fire Service used water to control and extinguish the fire. Some of this water entered the stormwater system which was managed in conjunction with the Christchurch City Council (CCC). CCC managing the external drains and Ravensdown managing the on-site drains. The main issue was sediment which was able to be removed from the Wigram retention basin by CCC. Post emergency all on site stormwater drains were blocked with water being pumped to our green pond system (on site storage) and then discharged to trade waste. There has been minimal impact on site operations with the acid plant back operating within 2 hours of the incident, despatch within 48 hours, and manufacture operational but constrained due to access to phosphate rock stored within the damaged stores. Manufacture recommenced on 24 of October once the damaged stores had been made safe.

3. SITE STORMWATER MANAGEMENT SYSTEM (CURRENT)

- 3.1 The site stores all products within enclosed buildings. The site has significant roofing and hard seal areas where all stormwater is collected, and is either used in manufacture, diverted to trade waste or enters the CCC stormwater network. All stormwater is collected from around the intake area, acid plant, loader wash bay, scrubbers and the urea despatch area and directed to on-site storage and either used in the manufacturing process or diverted to trade waste (refer to Appendix 1). The balance of stormwater leaves the site from five locations and enters the CCC stormwater network.
- 3.2 Site housekeeping and other initiatives in place to control dust and product spills which ultimately reduces nutrients entering the stormwater system include:
- (a) Baffles on intake system
 - (b) Use of a mist cannon on intake for dusty products
 - (c) Conveyors covered
 - (d) Fine mist system over some doorways during intake
 - (e) Stores enclosed
 - (f) Loading of trucks under cover
 - (g) Use of bag filters
 - (h) Loads transported by trucks/spreaders are covered
 - (i) Trucks have blow down facilities or brushes available to clean down prior to leaving site
 - (j) Truck/spreader loading – staff empowered to stop loading vehicles if potential to over-fill
 - (k) No loading of bulk product where vehicle not fit for purpose
 - (l) Sediment traps in sumps

- (m) Regular cleaning of sumps/drains
- (n) Cleaning up spills
- (o) Regular site sweeping

4. STORMWATER MANAGEMENT IMPROVEMENTS TO DATE

4.1 In 2011 with the assistance of Golder Associates, a management plan was established which identified the highest risk areas and initiated a number of improvement projects and changes to on site management of stormwater. Prior to this plan, a project had already been completed to capture stormwater from around the acid plant and store this on site for reuse in manufacture or diversion to trade waste. Since the plan, other significant projects completed include:

- (a) Collection of stormwater around the intake area for reuse on site or diversion to trade waste (2012).
- (b) Relocation of despatches to specific plants outside of the main building which significantly reduces truck movements through our stores reducing product tracking and dust (2016).
- (c) Dust suppression cannon has been installed on the intake and doors have been installed on despatch plants to reduce dust (2016).
- (d) Recladding of buildings and conveyors alongside our earthquake redevelopment work has reduced dust and spills (2012-2017).
- (e) Collection of stormwater around the urea despatch area for reuse on site or diversion to trade waste (2018).
- (f) Installation and management of filter cloths in all sumps which connect to the CCC stormwater network (2017).
- (g) Visible labelling of stormwater sumps (2017).
- (h) Increase in frequency of sump/stormwater pipe cleaning (2017).
- (i) Installation of a bund at the truck clean-out area (2017).
- (j) All cleaning of mobile plant, equipment and pallets now takes place in the wash down bay connected to our on-site storage (2017).
- (k) Improved management of IBC's within the bund area (2017).
- (l) Bunded pallets are used for waste oils (2015).
- (m) Increased sweeping of hard seal areas on site (2017).
- (n) Alleyway building redevelopment completed which has significantly reduced tracking (2017).
- (o) All skips on site are leak-proof (2017).
- (p) Windbreak screening installed along fence line by intake (2018).

- 4.2 Some of these improvements have been acknowledged by Environment Canterbury (2016) and Christchurch West Melton Zone Committee (Press 2015).
- (a) Environment Canterbury (Nathan Dougherty, Principal Resource Management Advisor - email 2016) ...*"I've told CCC and Environment Canterbury people about the excellent work being done and quite a few people are of the view that Ravensdown's leadership on improving stormwater management deserves to be recognised. It certainly could be a good example for other industries as to how Ravensdown approached the issues and solved problems."*
 - (b) Christchurch West Melton Zone Committee (Chair, Arapata Reuben - Press 2015 - abbreviated),*"In early March the Zone Committee visited Ravensdown Fertiliser Plant in Hornby, one of the largest manufacturing entities in the Hayton's catchment" ... "Ravensdown is currently undertaking a significant redevelopment of their Hornby processing site and have taken the opportunity to include stormwater improvements such as the development of an onsite closed system and recycling of rainwater for use in industrial processes as part of the rebuild. The Zone Committee is delighted to see such a large and significant business taking steps to improve management of the water resources at a local level. Ravensdown is to be congratulated for their commitment."*

5. **STORMWATER QUALITY MONITORING**

- 5.1 Manual stormwater sampling is carried out at the five exit discharge points to capture first flush rainfall events (locations shown in Appendix 2). This is completed in rainfall events of at least 5mm and has been in place since December 2017. The parameters measured include; pH, Total Suspended Solids (TSS), Dissolved Copper, Total Copper, Dissolved Cadmium, Total Potassium, Dissolved Zinc, Total Zinc, Fluoride, Dissolved Inorganic Nitrogen (DIN), Urea-N, Total Ammoniacal-N, Nitrite-N, Nitrate-N, Nitrate-N + Nitrite-N, Dissolved Reactive Phosphorus (DRP), Sulphate, E.coli and Total Petroleum Hydrocarbons in Water.
- 5.2 Previously, some stormwater sampling was completed for a more restricted list of parameters between 1998 and 2003. The comparison of DRP and Ammoniacal-N between sampling events in 1998, 2003 and 2017-18 demonstrate the impacts of site improvements as progress has been made to stormwater management. Sampling results from 2017-18 also illustrate the more recent improvements to stormwater quality from housekeeping and infrastructural changes in the past year. An example of this is the Ammoniacal-N removed from the CCC stormwater network from discharge point 'Main South Road 2' following the separation of the Urea Despatch stormwater from the outlet pipe network. Data received to date is graphed in Appendix 3.

6. STORMWATER MANAGEMENT CHALLENGES

- 6.1 Ravensdown is committed to improving its stormwater management and has shown this with progressive improvement over a number of years. There has been a constructive and open dialogue with the CCC, Environment Canterbury and the West Melton Zone Committee over this period. However over the last 18 months there has been a lack of alignment and clarity between the two Councils in the communications with Ravensdown. In March of this year Ravensdown sent a letter to both Councils seeking clarity in the process it should follow with respect to auditing and advising on the improvements to the Christchurch Works stormwater management, infrastructure and operations. The catalyst to this was audits completed by both Councils. CCC requested that Ravensdown continue to liaise with the CCC stormwater audit team, so that team can provide ongoing assurance to both the CCC and Environment Canterbury that the CCC is taking all practicable steps to improve water quality in the city. However an Environment Canterbury audit (March 2017) and subsequent report (April 2017) which set out specific actions for Ravensdown to complete by specific timeframes lacked consistency with those the company had been working to with the CCC Stormwater Audit Team. Moreover, the works and timeframes provided by Environment Canterbury do not all take into account the major infrastructural changes that are required to implement the improvements on a large working industrial site. From my position as Works Manager, trying to satisfy two different Councils has been confusing and at times inefficient.
- 6.2 There are many factors that contribute to the management of stormwater on site which create a unique challenge. The nature of the site and the activities occurring on it, the age of infrastructure and the need to keep the site operating in a safe and efficient manner while stormwater infrastructure works occur all contribute to a challenging environment.
- 6.3 Currently, there are no clear expectations regarding discharge water quality or receiving environment water quality requirements for industrial sites like Ravensdown which also makes it difficult for us to know the outcome we are working toward or to benchmark from. A concern for Ravensdown is that capital investment and resources could be implemented for all actions for improvement requested by both CCC and Environment Canterbury following the 2017 audits, without any measureable improvement to the stormwater quality discharged from the site.

7. RAVENSDOWN'S COMMITMENT TO IMPROVING STORMWATER DISCHARGE QUALITY

- 7.1 Ravensdown is committed to improving the quality of its site stormwater discharges in order to reduce the impacts that they may be having on the downstream receiving environment (Haytons Stream).
- 7.2 We support CCC's integrated approach to stormwater management and want to continue to work collaboratively with both councils to achieve the environmental

improvements necessary; however the current approach (by both councils) lacks clear direction for industries such as ours.

- 7.3 Christchurch Works began working with Beca Group in December 2016. The focus for the first part of the Stormwater Management Project with Beca was stormwater quantity so that we could understand potential options available for managing the stormwater volume generated from the site. Beca reviewed the current infrastructure on site and the Urea despatch area was highlighted as the highest risk for stormwater contamination. This area has been contained and is sent to the site stormwater storage system. This project was completed in April 2018. Ravensdown are now working with Aurecon and Pattle Delamore Partners to design and implement the remaining stormwater management project work through to commissioning. Currently, Aurecon and Pattle Delamore Partners are working toward options for treating stormwater to improve the quality and manage the quantity. It is not yet known whether stormwater will continue to be discharged to the CCC Network. Ravensdown is aiming to complete the site stormwater management project with Aurecon and Pattle Delamore Partners by April 2020.

8. CONCLUSION

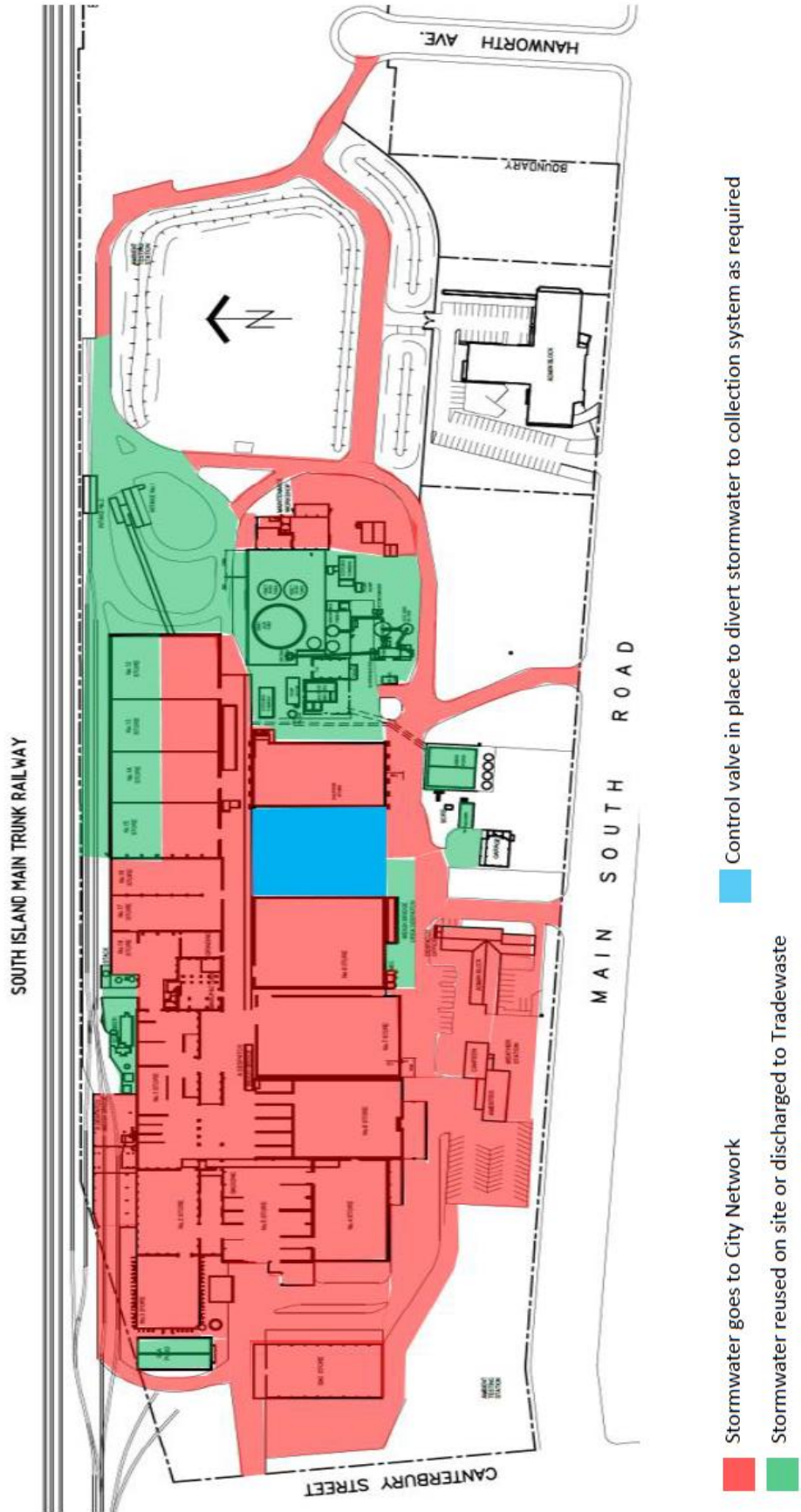
- 8.1 Ravensdown supports the CCC application (CRC190445) for a comprehensive resource consent to discharge stormwater, subject to the amendments to conditions outlined in the Statement of Evidence from Ms Wilkes on behalf of Ravensdown Limited.
- 8.2 Ravensdown seeks a clear line of accountability for its management of stormwater to assist the company to make improvements to site stormwater management.
- 8.3 Ravensdown is committed to a programme of improvements to site stormwater management to reduce the contaminant load discharging into the CCC Network. Given the significant investment required to achieve this, it needs clear expectations from CCC to ensure that any treatment system proposed for our site will perform to a suitable standard that enables the company to continue to discharge stormwater into the CCC network in accordance with the conditions of CRC190445.



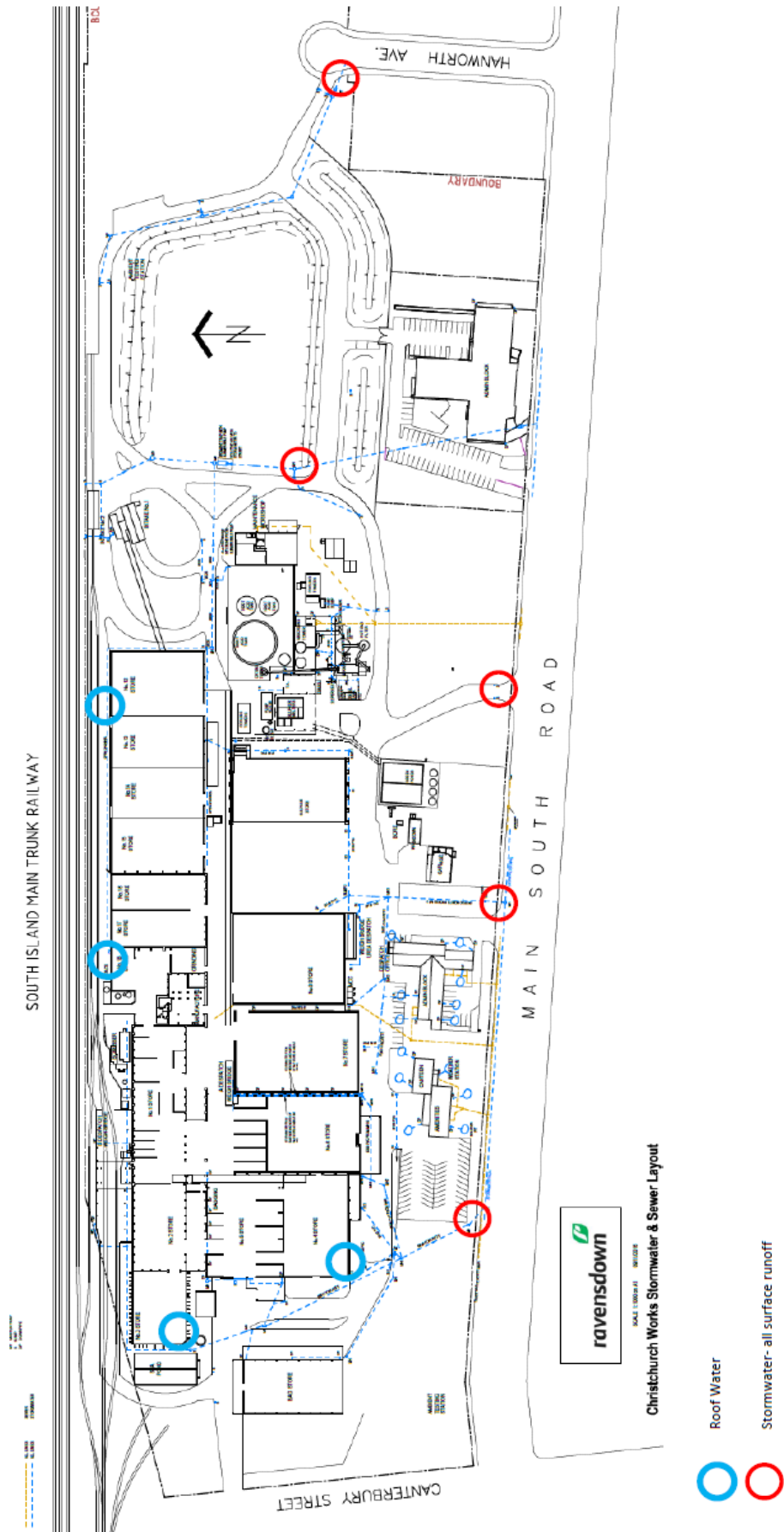
Peter William Hay
24 October 2018

APPENDIX 1- Stormwater Collection Ravensdown Christchurch Works

Stormwater Collection Ravensdown Christchurch Works



APPENDIX 2- Stormwater Sampling Locations Ravensdown Christchurch Works



APPENDIX 3- Stormwater Sampling Results (Graphed)

