

## Plentyful Responses to Questions re Kensington Road, Marton Development 12 Apr 22

Below are questions posed to Plentyful with responses from them as well as responses Plentyful provided from GreenChem. Responses have been consolidated from several documents/emails.

### Key:

Questions (numbered for ease of reference) were asked are shown in Black with responses given in Brown. Items which begin with # were given as clarification, again in Black with responses given in Brown.

Input from GreenChem are shown in Green.

## 1. Overview

### 1.1. The intended use of site.

The intended use of the site is to create biopolymers to replace oil-based plastics, using organic resources such as wood, DAF and sugars (the feedstocks). This however is still in the development stage and will not commence on-site until a later date. In the meantime, the site will host the following activities:

- Solar power generation.
- Extracting lignin from wood to create a natural biopolymer (through a tenant of ours).
- Coating biopolymers onto paper for use in food packaging (to replace problematic plastic lined paper packaging).

GreenChem will use the site to trial known processes, derive lignin for product development, and supply trial scale polymers for use by Plentyful and coated paper manufacturer.

### 1.2. The manufacturing process.

- The PHA process involves fermenting the feedstocks in tanks which will produce the PHA. We will then extract the PHA and purify it into a usable format.
- The paper coating process will take place in a building that contains holding tanks and a coating machine to apply the coating onto the papers
- We will organise a separate answer sheet from our lignin tenant (Greenchem).

### 1.3. Time scales: To commence work on site / To production / Length of time site will be productive.

- We are aiming to have the paper coating up and running in 12 months time with a commence of work in 6 months. This will be productive on-going.
- The PHA is undergoing a scale up design process from the current site in the USA. We will keep you updated for when we have dates confirmed for its production.

GreenChem expects to occupy the site in June, with 3 years occupancy.

### 1.4. Please cover why have a two sites / how this fits in with the intentions for the Makirikiri Road site.

- Why not have your research portion at Makirikiri Road?

We will set up our initial site on Kensington road. Given how big the plastic problem is, we anticipate needing to scale up production. When we run out of room at Kensington, we will build another site at Makirikiri Road.

NA.

- Once the Makirikiri Road site is fully functioning, what happens to activities at Kensington Road?

At this stage we plan to keep operating both. It might become an education site that people can visit and learn about what we are doing to help solve the plastic problem. Alternatively, we are open to what options make sense at the time.

NA.

- If the Makirikiri Road location is not approved - what will happen to Kensington Road?  
We will continue as planned at Kensington Road and look for another location for our next site.  
GreenChem intends to continue its trials at Kensington Rd.
- Is Kensington Road, dependant on Makirikiri Road site becoming functional?  
No, although it would be nice to keep everything in Marton and close to each other.  
No.

## 2. Consultation

- 2.1. How does this comply or otherwise with the District Plan?  
Design is in accordance with the District Plan.  
GreenChem considers this an effective fit with the District Plan.
- 2.2. What will be the impact on the neighbouring residential properties?  
We have been working closely with the local council to ensure that all noises/light levels etc are within any limits that apply. Naturally, there will be an increased traffic flow in and out of the site although we aim to keep disturbances to a minimum and within the set limits.  
Impact on neighbouring residential properties is minimal. The closest residence is almost 100m distant, while the operation is quiet, non-odorous, and will be operated to high standards of safety.
- What has been / will be done in relation to public notification(s)?  
Given our compliance with the District Plan we are not aware that notifications are required.  
NA.
  - Who has been contacted so far vs who do you intend to notify? eg:  
NA.
    - Neighbours: Adjoining / Across Road / Across Rail Track.  
We have visited with the neighbours to express our intentions, only one was not available.
    - Line of Sight – for example, but not limited to Matai Street.  
Sorry we aren't sure what this question means.  
#2.2. I have circled with Red some of the properties on Matai Street which are in Line of Sight with the development area, hence wondering whether they had / would be included in any notification(s), as they may not be regarded as close neighbours.  
At this stage we are not aware of any notification requirements.
    - School / Pre Schools etc eg Marton Junction School.  
We have prepared educational material for all local schools.

## 3. The Process

- 3.1. Your initial email indicated bioplastics plants (plural), am I right in remembering you talked about three processes, or was that three plants? I'm thinking a flow chart or process map would convey what you spoke about.  
We are making two types of biopolymers on the site.
1. PHA
  2. Lignin (via our tenant GreenChem) The third process is using the PHA and Lignin to coat paper.

3.2. Kindly explain what the raw materials are plus where they are to be sourced, how they will get to the site to help everyone understand the wider / out of town traffic / rail implications.

Raw Materials/Feedstocks:

1. Woodchips
2. DAF (from the milk making process)
3. C6 sugars (extracted from food-waste)
4. Paper (for coating)

These will be sourced from throughout NZ with a focus on local resources. The feedstocks will come via rail where possible and trucks will be used when rail is not suitable.

GreenChem will treat wood chips, using up to 8kg per day. These will arrive in 200kgs units (a fadge is expected). Occasional deliveries of process materials will be monthly.

#### 4. Site

4.1. Has the site been purchased? If not, is that your intention?

Yes, this is our intention.

NA.

4.2. I recall you mentioned going as far as the stream, have you plans for beyond the stream?

We currently have no plans beyond the stream.

No.

4.3. What do you see the impact would be of any flooding of the area?

We are within flood requirements.

Minimal. This is small scale industrial equipment.

4.4. Are resource consents required for any, or all of the activities planned?

This will depend on minor design decisions that have yet to be made.

A building consent required for carport.

A resource consent for GreenChem process.

4.5. What is the proposed site layout, access points, car parking etc.

While we are advanced on technical engineering design we have yet to finalise a layout.

N/A.

4.6. A 3D impression would help, as we did not talk about how high buildings / structures will be?

All buildings will comply with the district plan, we don't have any 3D impressions.

GreenChem structures will have maximum height of 3.5m.

4.7. Contaminated area – will that be sealed in some way?

We will utilise this area to place solar panels to create a renewable energy source.

4.8. Where exactly is the Contaminated Area?

There is a small area of HAIL left over from the sawmill as defined by the Ministry for the Environment.

4.9. What size is the Contaminated Area? Just a few metres was mentioned!

Yes it is a small area alongside the rail tracks.

#### 5. Services

5.1. Power – Will the complex be connected to the mains or use generators?

Our goal is to utilise solar power as much as possible. We will likely end up using a mix of solar and a connection to the mains.

Mains power supply.

5.2. Water - I am mindful that existing pipes may be adequate as the area is zoned Industrial, but wonder, what was the result of your research?

Water in – will the local supply cope?

We foresee no issues and will recycle as much water as we can.

Yes.

Water out / waste – will the local waste system cope?

We foresee no issues and will be constantly looking for ways to minimise waste.

Yes.

## 6. Delivery of Raw Materials

6.1. You talked about timber coming from elsewhere – eg Hunterville, will there be a site installed there for debarking / processing into the Pellets you mentioned? Or is that process done elsewhere?

The harvesting machines are likely to do this at the harvest site.

GreenChem will use less than 10kgs per day.

6.2. You talked about the Raw Material being in the form of Pellets (not Bark), I'm just checking - Will the site be taken up with huge piles of Pellets? Or will they be contained in hoppers (for example).

More likely chips within hoppers.

GreenChem will use wood chips.

## 7. Traffic movements - from Rail Siding

Traffic movements – 10 movements of Fork Lift Trucks were mentioned.

7.1. Is that 10 traffic movements in total a day, or 10 in + 10 out = 20 a day? Or each delivery?

This is estimated total movements per day and the estimate will change as we complete outstanding processing decisions.

7.2. How many deliveries would be arriving per day once the site is at full production?

Five based on the above estimate.

7.3. Are movements to happen 24/7? If not, what are the anticipated hours?

We haven't contracted a transport company so don't yet know how they would schedule us.

7.4. When a train delivers, how long is it expected to take, to off load "a single delivery"?

Same as 7.3.

7.5. I have assumed, a train arrives, its load is transferred directly to the production site, there will be no loads stored at the siding – did I understand you correctly?

Same as 7.3.

7.6 Please provide image of the "Fork Lift Trucks" as you mentioned, they are not a standard size / warehouse Fork Lift Truck – you stated they were more like Diggers.

Same as 7.3.

7.7. When the Makirikiri site is up and running, what changes will come into effect with deliveries / traffic movements – will there be an increase or a decrease, if so to what (total #)?

All our work at the current time has been on the Kensington Rd site.

7.8. Siding to be used (at the present Railway Station) – will that on the Kings Street or Princess Street side of the Track or both?

Same as 7.3.

## 8. Traffic movements - Road delivery

8.1. What, if any, supplies will come by road. You talked of using timber from north of Hunterville.

Short haul items are likely to be by truck, we expect that rail will only be economic for long haul items.

Your questions for this site.

8.2. Is that to come in by Road or Rail?

See 8.1.

8.3. If Trucked – how many vehicles movements in/out (a total please).

It will depend on the mix of short and long haul items which will depend on the supplier/customer mix for any particular day.

8.4. Are Truck movements to happen 24/7? If not, what are the anticipated hours?

See 7.3.

#8. You mention Short Haul by truck vs Long Haul by rail – what distance would be deemed short vs long? Kim mentioned forestry activities north of Hunterville then simply in terms of Pellets arriving by rail, road was not mentioned at all, which is why I anticipate there is likely to be an increase in truck traffic down Nga Tawa Road and/or Henderson Line at least.

We don't have this information at this time. We will share it when we do.

## 9. Discharges

9.1. What are expected regarding discharges to air, water and soil including any further toxicity issues – are there independent reports?

We are working closely with Horizons regional council. Based on our pilot facility in the USA, we expect no issues. For context, the pilot facility is in an area with some of the strictest air discharge restrictions in the world. We will be recycling as much water as possible and foresee not instance where any soil would be contaminated. Our process are all contained.

GreenChem will discharge drying of 1 kg lignin via a fume cupboard with an activated carbon filter.

9.2. Has Horizons Regional Council been notified? Am thinking they would be at some time.

Yes, we have been working closely with Horizons throughout the project.

GreenChem has fulfilled a process which determined that its following guidelines for permitted activity.

## 10. Noise

10.1. Will there be noise 24/7? If not during what hours are planned?

Noise levels will be within the District Plan.

No noise, working daytime hours.

10.3. Will any/the noise be constant?

Compressors are the most likely noise that will be constant.

10.2. Mention was made that noise will be below the maximum level allowed – what do you anticipate the level will be?

Those set by the District Plan.

NA.

## 11. Light

11.1. Will there be lights on during any hours of darkness? I'm thinking beyond the need in winter of say "office hours".

Yes there will be lights, however all lighting is below the council limits.

Lights in the container at each end of a winters day.

11.2. I'm thinking in terms of flood lights – beyond basic low level / security lighting.

Correct.

None planned.

## 12. Dust

12.1. Do you expect tret / wastage / loss of product, during the transfer process to blow around?

Everything is pretty much contained in pipes, tanks and buildings so this is unlikely.

Minimise waste is the goal.

12.2. Will it be in the form of - dust and the pellets / bark chip size.

we aren't expecting anything to blow around.

Expect all products to be used.

12.3 The means of transfer using "Diggers" makes me think on a windy day the air will be filled with detritus, which will settle off site, unless the transfer is carried out "under cover", please clarify.

Transfer is more likely to be by pump from one vessel to another.

Small quantities of real value. We won't be wanting to lose product.

#12 When I asked about the Transfer Process, I meant while moving the raw product from the rail siding to the site. Kim initially talked in terms of "Fork Lift Trucks" then expanded his description by saying the "Fork Lift Trucks" to be used would be larger - more like Diggers. I thought it would be best to clarify "larger", which is why I asked for an image (at 7.6). As Kim spoke of the difference in size, he obviously had an expectation of what he believed would be used, perhaps Kim would identify what he had in mind when he spoke to us. As they say, a picture speaks a thousand words.

A large rather than small forklift truck that we have yet to specify.

#12 From Kim's description of delivery I understood the raw product would arrive by rail and be transferred "loose" hence my query regarding tret.

The way I read what you have provided, it seems delivery will be via pre-loaded containers, which does not in my mind marry up with a need to use Diggers.

I do not recall Kim indicating any raw product may arrive by road.

There will be a difference between GreenChem's chips and our feedstocks. We are unsure what the final delivery will look like.

#12.1 I wondered if you were referring to the process on site? Kim's description gave me the expectation that once on site, you would have a "sealed" process, hence my queries relate to the activities (unloading) at the rail siding, which, as Kim spoke would be by the existing railway station. My concern is what the outcome would be at/around the Railway Station area. When you say "vessel" at 12.3, I feel pictures would help clarify to us, who are new to these activities.

We do not foresee any permanent change to the railway station area - we will be unloading from the area and transporting back to our site.

### 13. Wastage

- 13.1. What is expected regarding wastage during the transfer process of final product(s)?  
Final products will be packaged in a contained area to minimise and capture wastage.  
NA.
- 13.2. Will it be in the form of micro particles (as Micro sized Plastics have been an issue elsewhere).  
It will be in a form of powder or pellets for PHA. The Paper coating will be in the form of rolls of paper.  
No micro-products.
- 13.3. You said the final products are biodegradable, but how long will it take for any wastage to fully disintegrate (if that is the correct term)?  
Correct. They will naturally biodegrade in months, leaving behind no microplastics or anything harmful. PHA is a material that already exists in nature (plants, animals, humans) so it is nothing new to the eco system. In some instances, it has proven to be beneficial to add into soil and water environments.  
No wastage. Products degrade once used off site.

### 14. Examples

- 14.1. Would you please provide image(s) of Pellets / Raw Material, to be brought in.  
We don't have any pictures at this stage think of it in terms of a slurry within containers.  
Woodchips.
- 14.2. What will be made? You indicated there would be more than Bag Tags.  
We will be making powder/pellets and rolls of paper on-site.  
NA.

### 15. Employment

- 15.1. You said the site would result in 50 jobs, while the Makirikiri Road site would employ 300-350. Would you please expand on that detail – you talked about the majority would be technical positions – would they all be Chemists (or what)?  
All positions usually found in high end manufacturing including chemists, factory managers - it will be a range of positions.  
GreenChem For Kensington Rd – Science or technology technician.  
For Makirikiri Rd 30 jobs of technical and trade levels.
- 15.2. Will the expected 50 change if the Makirikiri site becomes functional? If so, how/to what #?  
At this stage we are only concentrating on the Kensington Rd site.  
NA.

### 16. Investment is from where

- 16.1. Is this your business venture?  
Yes.  
GreenChem – Yes.
- 16.2. Will it be a totally New Zealand project, or;  
GreenChem – Yes.
- 16.3. Will it result in the funnelling of money out of our community to overseas owners?  
The project is currently 100% NZ owned with an emphasis on local investors.  
GreenChem – No.

## 17. Once all the work is done . . .

17.1. No mention was made regarding transporting of final product(s) out of Marton.

We will use rail as much as possible with trucks used when required.

17.2. Will rail or road be used?

As above.

GreenChem – Rail is expected.

17.3. What volume of vehicle movements do you anticipate?

See 7.1 above.

GreenChem – Minimal.

17.4. Will any product be moved between Kensington Road / Makirikiri Road sites? If so, what volume and by what means?

See 15.2 above.

#17.4. Our conversation with Kim did principally relate to Kensington Road, but the Makirikiri site was also spoken of on several occasions “as part of the bigger picture”, so you will appreciate my interest, for my community, as to whether / how the two sites are likely to work together. Hence my query, thinking there is (in my mind) a strong possibility, of trucks moving between the Kensington and Makirikiri sites.

We are unsure of this at the moment and can provide more detail once we know more.

NA.