

**IN THE MATTER OF** the Resource Management Act 1991

**AND**

**IN THE MATTER OF** Private Plan Change 95 Pencarrow Estate  
Pongakawa to the Western Bay of Plenty  
District Plan

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**POST HEARING STATEMENT OF REPLY EVIDENCE OF VINCENT MURPHY (PLANNING)  
TO EVIDENCE OF JAMES ABRAHAM, WBOPDC (STORMWATER AND WASTEWATER)  
ON BEHALF OF KEVIN AND ANDREA MARSH**

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**Introduction**

1. My name is Vincent John Murphy. I confirm my qualifications and experience as set out in my statement of evidence dated 24 October 2024.
2. I also confirm that I have read and agree to comply with the Code of Conduct for Expert Witnesses, as contained in the Environment Court's Practice Note 2023. I confirm that this evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.
3. This reply evidence is provided pursuant to Item 1 of Hearing Direction 3 dated 18<sup>th</sup> November 2024<sup>1</sup>. In accordance with that direction, this evidence

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<sup>1</sup> Item 4 of Hearing Direction 3 seeks any reply evidence to the evidence called by WBOPDC on the 14<sup>th</sup> of November 2024, with the exception of the evidence of Mr Abraham which is subject to separate treatment covered in Item 1 of the same direction. Responses to the amended brief, and evidence of, James Abraham of WBOPDC was directed in Item 1 to be provided by 5pm 27<sup>th</sup> November 2024, and as such response to that evidence is provided by Daniel Hight (engineering) and myself.

responds to the amended brief and evidence of Mr James Abraham on behalf of WBOPDC.<sup>2</sup>

4. I address points made in the evidence referred to above, thematically and grouped into the following topics:
  - (a) Stormwater soakage feasibility and groundwater impacts; and
  - (b) Wastewater servicing.
5. The evidence of Mr Abraham is technically responded to by engineering peer Mr Daniel Hight for the applicant. My evidence rather provides clarifications on assumptions or interpretations on the scope of the plan change which I have ascertained from Mr Abraham's evidence.

### **Stormwater Soakage, Groundwater Impacts**

6. I defer to the evidence and expertise of Mr Hight concerning why higher soakage rates than those nominated by Mr Abraham and Ms Southerwood should be preferred.
7. I rather wish to respond to a statement presented at paragraph 6 of Mr Abraham's summary evidence statement dated 13<sup>th</sup> November, stating "*the effect of fill and loading from dwellings has not been assessed with regard to the impacts on existing groundwater levels*". I believe this over-states the scope of filling and loading planned and attached to dwellings.
8. Pre-loading of soil is one of four options presented by CMW in its application report, and (if pursued) would only be necessary where peat is underneath planned dwellings. This is a) not the confirmed methodology at this time and b) if it was to be pursued, would only be required to a small area of the

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<sup>2</sup> Specifically: Summary Statement of Evidence, dated 13<sup>th</sup> November 2024; spoken evidence delivered during the hearing 14<sup>th</sup> November 2024 and corresponding 'Notes of Reply Comment'; and Statement of Evidence in Response to Questions from Hearing Commissioners (Wastewater and Stormwater), dated 22<sup>nd</sup> November 2024.

proposed residential area. See image below overlapping peat areas (grey dash and outlined red dash for clarity) against the Structure Plan. The majority of peat is located in the area of the primary stormwater/recreation reserve, and in the location of the proposed wastewater disposal field area.



**Figure 1:** Image overlapping CMW test locations and peat soil observations against the spatial provisions of the Structure Plan. The OLFP between the looped road has been located as shown to ensure separation of upstream overland stormwater and floodwater flows from the stormwater treatment wetland.

9. Mr Abraham elaborates on this at the bottom of page 1, reply comments 14<sup>th</sup> November 2024, discussing a purported 21,000m<sup>3</sup> of fill calculated as required by Mr Hight. This is not a correct characterisation – Mr Abraham is referring to a worst-case lost floodwater storage volume attached to the removal of overland flowpaths from the site (which are in any case robustly provided for), mentioned in Mr Hight’s flooding effects assessment of the plan change.

10. The houses are proposed to be located on and at the level of the elevated plateaus of the plan change site, which have a level exceeding RL 6.5m (Moturiki datum, used by both Lysaghts and CMW in providing information for the plan change). This level is sought to be maintained, with contouring and some localised filling as required for roading, drainage and lot formation, across the residential areas of the plan change. Groundwater levels are at minimum 2.5m below this level, in places exceeding 3m below this level, as established by CMW investigations.<sup>3</sup>
11. It would therefore be inaccurate in my opinion to conclude that the plan change requires mass pre-loading across all residential areas of the site, which may have more potential for a tangible effect on groundwater patterns that seems to be the concern of Mr Abraham.

## **Wastewater**

12. Mr Abraham further opines that filling within the wastewater field has not been considered, and that there is inconsistency in the application regarding the use of a 'raft' of fill if required to ensure separation from the groundwater table.
13. Resumption information provided to WBOPDC in August 2024 demonstrated the similarity in groundwater levels below the wastewater field location, across summer and winter, revealed to be 1.5m below the surface at a minimum. This renders the general concept of a 'raft' of fill, as initially mentioned in plan change reporting by CMW (only if needed) unnecessary to ensure the irrigation field is suitably elevated above groundwater level.
14. This matter is then further clarified in the evidence (in chief) of Ms Kirstin Brown, at paragraph 20 discussing the very small areas of fill placement needed in the wastewater disposal field to ensure a flat surface (backfilling of

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<sup>3</sup> See Table 3, Engineering Servicing Report prepared by Lysaght Consultants submitted with the plan change.

existing paddock drains in that area). This is further reinforced by consideration of the potential for filling and flood risk susceptibility of the wastewater field by Mr Hight (paragraph 25, evidence in chief, noting BOPRC OSET requirements focus on the 1 in 20-year flood event, not the 1 in 100-year flood event). In any case, Ms Brown does address the potential for impacts to the groundwater through a suggestion of monitoring which I believe would be imposed as a requirement through BOPRC OSET consenting and compliance with WBOPDC District Plan Rule 12.3.8(I).

15. Against this context, and with due regard to the expert advice mentioned above, it is my opinion that potential impacts upon groundwater (as a function of servicing via proprietary treatment and then disposal to land as proposed) have been considered at this plan change stage previously, as well as appropriately and proportionately.
  
16. Mr Abraham repeatedly opines across his evidence that the presence of 100-year climate-change-adjusted flood risk to parts of the wastewater field (calculated by Mr Abraham to be 13%) has not been considered or assessed (in terms of its change) by the applicants. The above discussion of information provided with the plan change and in evidence proves this inaccurate in my opinion. Mr Hight in particular has addressed this at paragraph 25 of his evidence in chief. Essentially, it is only backfilling to paddock drains that is envisioned, to achieve a finished level above the 1 in 20-year flood level to meet BOPRC OSET requirements (expected as per the evidence of Mr Hight to be lower than the 1 in 100-year level being referred to by Mr Abraham). Mr Hight has in multiple instances across the course of this plan change noted the vast extent of the adjoining floodplain to the north which is contiguous with the ocean, and that the small-scale filling envisioned to paddock drains in the wastewater field area is not considered to have the potential to materially alter flooding effects within that floodplain.

17. Mr Abraham also considers there is the potential that the wastewater field has been undersized, due to not explicitly accounting for potential buffer areas from residential land, and land to be utilised for plant and access.
18. I have a different view. The wastewater field has been conservatively sized in response to feedback over the course of the plan change from BOPRC. Namely, a conservative starting point of five persons per dwelling and associated loading into the wastewater field, in addition to 10,000 litres per day assumed from the commercial area (again, conservative from Innoflow based on its experience of similar small commercial hubs). It is for this reason that the field is sized (in total) at 3.53ha with an additional reserve area of 1.77ha as required by BOPRC. Therefore a wastewater treatment area of over 48% (3.53ha of 7.3ha) of the residential/commercial area to be served is conservatively provided for (excluding reserve area).
19. The applicant has worked to sizing requirements in response to BOPRC advice at this plan change stage. As generally acknowledged by Mr Abraham and spoken to by the evidence of Mr Cooney, decentralised wastewater systems are highly efficient and continuously advancing, and this area would rationally be sought to be decreased at detailed design stage (unless WBOPDC seek to purchase and expand the system to service the rest of the settlement).
20. The buffer to residential areas as mentioned by Mr Abraham, is considered in the evidence of Mr Hight. I note that a strictly required buffer is less than 1.5m as opposed to the 20m suggested by Mr Abraham which has been implemented at Maketu.
21. The wastewater field has therefore been appropriately positioned, having regard to important topography, groundwater and flooding constraints, and sized with regard to soil loading constraints, at this plan change stage in my opinion. The location lends itself to finessing as required through OSET

consenting and detailed design. The evidence of Ms Brown speaks to the potential for expansion further north if need be.

22. I further consider that any potential finessing of the exact location and size of the wastewater field (which will generally conform to the proposed location) to be something of a red herring in terms of Structure Plan compliance risk. The development pre-requisites require development to be undertaken 'in general accordance' with the Structure Plan provisions. In my view there is scope for amendment to the wastewater field following detailed design and OSET consenting whilst still being 'in general accordance' with the Structure Plan provisions for a wastewater disposal field in that area (depending on scale and nature of change, of course). I disagree with the characterisation of Mr Abraham that finessing the field to service the plan change alone would be a "major deviation".<sup>4</sup>
23. I would further note the wastewater field is deliberately retained as Rural zone so that it can continue to be used for productive purposes (sheep grazing in particular)<sup>5</sup>.
24. It is finally noted that BOPRC, being the consent authority responsible for OSET consenting, and expressly soil conservation, and maintenance and enhancement of the quality of water,<sup>6</sup> appear satisfied with the proposed feasibility and operation of the wastewater treatment and disposal solution as proposed at this plan change stage<sup>7</sup>.

Vincent Murphy

27<sup>th</sup> November 2024

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<sup>4</sup> Paragraph 18, response evidence of James Abraham dated 22<sup>nd</sup> November 2024.

<sup>5</sup> As advised by Innoflow and confirmed by Mr Perry in response to questions.

<sup>6</sup> See section 30, Resource Management Act 1991.

<sup>7</sup> See paragraph 31, evidence of Lucy Holden circulated prior to the hearing.