

**IN THE ENVIRONMENT COURT
AT AUCKLAND**

**I TE KŌTI TAIAO O AOTEAROA
KI TĀMAKI MAKAURAU**

Decision [2022] NZEnvC 145

IN THE MATTER OF an appeal under section 120 the
Resource Management Act 1991 (**the
Act**)

BETWEEN NGĀTI TŪWHARETOA
GEOTHERMAL ASSETS LIMITED

(ENV-2021-AKL-109)

Appellant

AND BAY OF PLENTY REGIONAL
COUNCIL

Respondent

Court: Chief Environment Court Judge D A Kirkpatrick, sitting
alone pursuant to s 279 of the Act

Date of Order: 10 August 2022

Date of Issue: 10 August 2022

CONSENT ORDER

A: Under s 279(1)(b) of the Resource Management Act 1991, the
Environment Court, by consent, orders that:

- (1) the appeal is allowed subject to the amendments to the
conditions of consent and the additional advice notes set out in
Appendix 1 to this order;

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- (2) for subsequent ease of understanding the resource consent, the respondent reprints the consent with all the changes directed under (1) included, so that any reader not familiar with the proceeding can read the resource consent and understand it as a whole, without having to read, interpolate and consider separately changes made by this consent order; and
- (3) the appeal is otherwise dismissed.

B: Under s 285 of the Resource Management Act 1991, there is no order as to costs.

REASONS

Introduction

[1] This proceeding relates to an appeal by Ngāti Tūwharetoa Geothermal Assets Ltd (**NTGA**) against a decision by Bay of Plenty Regional Council (**BOPRC**) on an application by NTGA to change the conditions of consent of resource consent No. 67151 (**Consent**).

[2] The Consent contains conditions that require NTGA's discharge of geothermal water from its east bank discharge point into the Tarawera River to cease by 1 January 2021. NTGA applied pursuant to s 127 of the Resource Management Act 1991 (**the Act**) for a change of conditions to authorise these discharges to continue until 1 January 2035 (normal discharges) and from 1 January 2035 to 1 January 2040 (discharges required in the event of failure of a reinjection well).

[3] In its decision, BOPRC allowed a three year-extension rather than the 14-year extension sought by NTGA. NTGA subsequently appealed the decision under s 120 of the Act on 18 August 2021, seeking that the conditions of consent be amended to continue to authorise these discharges for five years

(normal discharges) and 10 years (discharges required in the event of failure of a reinjection well) from the date on which the appeal is resolved.

Other relevant matters

[4] Te Rūnanga o Ngāti Awa (**TRONA**) gave notice of an intention to become a party under s 274 of the Act and have signed the memorandum setting out the relief sought.

Agreement reached

[5] The parties engaged in correspondence and discussions and have now agreed that the appeal can be settled by consent. The basis of the proposed settlement by consent comprises:

- (a) amendments to Conditions 2, 3.1, 3.2, 6.1a and 6.1b allowing normal discharges to continue from the east bank until 1 May 2027;
- (b) amendments to Condition 2.0A allowing discharges in the event of failure of a reinjection well between 1 May 2027 and 1 May 2032;
- (c) inclusion of new Condition 3.3 imposing an obligation on NTGA to adopt all reasonable endeavours to discontinue the east bank discharge before 1 May 2027;
- (d) inclusion of new Condition 3.4 requiring that progress reports are provided to BOPRC and TRONA regarding discontinuation of the east bank discharge;
- (e) inclusion, on an *Augier* basis¹ as recorded in new Advice Note 7, of new Condition 3.5 imposing a restriction on NTGA from

¹ Referring to *Augier v Secretary of State for the Environment* (1978) 38 P & CR 219 (QBD) as explained in *Frasers Papamoa Ltd v Tauranga City Council* [2010] 2 NZLR 202, [2010] NZRMA 29 (HC) at [22] – [35].

applying for a change of conditions of the consent, or a new consent, to continue the east bank discharge after 1 May 2027;

- (f) amendments to Condition 7.4a clarifying that the report under the condition for contingency discharges is to be provided to the BOPRC and TRONA and including a new sub-clause (vi) requiring the report to set out the start and stop dates and maximum duration of any contingency discharges;
- (g) inclusion of new Conditions 10.21 to 10.25 regarding undertaking an unmanned aerial vehicle survey of the Tarawera River and a one-off multisite macroinvertebrate study in the Tarawera River, and reporting on the study to the BOPRC and TRONA;
- (h) new Advice Note 7 to explain the *Augier* basis of Condition 3.5;
- (i) new Advice Note 8 to explain the purpose of the unmanned aerial vehicle survey required by Condition 10.21; and
- (j) new Advice Note 9 regarding TRONA's view that geothermal takes and discharges should be considered on a holistic basis.

Consideration

[6] The Court has read and considered the consent memorandum of the parties dated 15 July 2022 setting out the basis on which they propose to resolve the appeal and explaining the key aspects of the proposed amendments to the conditions of consent.

[7] The Court is making this order under s 279(1) of the Act, such order being by consent, rather than representing a decision or determination on the merits pursuant to s 297. The Court understands for present purposes that:

- (a) all parties to the proceedings have executed the memorandum requesting this order;

- (b) all parties are satisfied that all matters proposed for the court's endorsement fall within the court's jurisdiction and conform to the relevant requirements and objectives of the Act including, in particular, Part 2.

[8] The offer by NTGA to be bound by new condition 3.5, which imposes a restriction on it from applying for a change of conditions of the consent, or a new consent, to continue the east bank discharge after 1 May 2027, is significant. Such a condition would ordinarily be beyond the scope of the jurisdiction of a consent authority or, on appeal, the Court as it abrogates the statutory rights to apply for or to seek to amend a resource consent. In this case I am satisfied that the elements required under the *Augier* principle (as explained by the High Court in *Frasers Papamoa v Tauranga City Council*)² are present and have been responsibly considered by the parties. On that basis, the Court may impose new condition 3.5.

[9] I am satisfied overall that the agreement reached is one that addresses the various interests of the parties. It is clear the parties have considered the Act and the relevant statutory planning documents and their provisions as they apply to the effects of the consented activity, reviewed other reasonably practicable options in light of those provisions and assessed the costs and benefits of those. I conclude the parties have taken a balanced approach and that the agreed amendments to the consent are appropriate. Overall, I consider the sustainable management purpose and the other relevant requirements of the Act are met by making the order sought by consent.

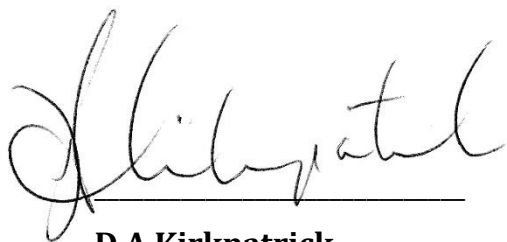
Orders

[10] Under s 279(1)(b) of the Resource Management Act 1991, the Environment Court, by consent, orders that:

² See fn. 1 above.

- (a) the appeal is allowed subject to the amendments to the conditions of consent and the additional advice notes set out in **Appendix 1** to this order;
- (b) for subsequent ease of understanding the resource consent, the respondent reprints the consent with all the changes directed under (1) included, so that any reader not familiar with the proceeding can read the resource consent and understand it as a whole, without having to read, interpolate and consider separately changes made by this consent order; and
- (c) the appeal is otherwise dismissed.

[11] Under s 285 of the Resource Management Act 1991, there is no order as to costs.



D A Kirkpatrick

Chief Environment Court Judge



Appendix 1

Amendments to consent conditions shown below in **grey washed text**: additions underlined and deletions ~~struck through~~.

Purpose	
1.0	To authorise and set conditions on the discharge of spent geothermal fluid to the Tarawera River resulting from the Consent Holder's operations at the Kawerau Geothermal System and the supply of geothermal steam and separated geothermal water for use by third parties.
2.0	<p>The quantity of spent geothermal fluid discharged by the Consent Holder to the Tarawera River shall not exceed:</p> <p>a. From the commencement of this resource consent until the 30 July 2024 <u>1 May 2027</u>:</p> <p>i. 20,880 cubic metres per day; and</p> <p>ii. 870 cubic metres per hour,</p> <p>b. From the 30 July 2024 <u>1 May 2027</u>:</p> <p>i. 9,600 cubic metres per day; and</p> <p>ii. 400 cubic metres per hour, except where contingency discharges occur in accordance with conditions 7.1 and 7.1A. (Refer to Advice Note 4)</p>
2.0A	<p>The Consent Holder may, between the 30 July 2024 <u>1 May 2027</u> and the 30 July 2029 <u>1 May 2032</u>, discharge in accordance with conditions 2.0(a) and 6.1(a) if:</p> <p>a. There is a failure in a reinjection well (or wells) and, as a consequence of the failure, there is insufficient suitable reinjection capacity within the Consent Holder's injection system to comply with conditions 2.0(b) and 6.1(b); and</p> <p>b. The Consent Holder supplies a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) that sets out:</p> <p>i. The nature of failure that has occurred and the circumstances that led to the problem occurring (if known);</p> <p>ii. The available and suitable injection capacity within the Consent Holder's system;</p> <p>iii. The investigations and actions that will be undertaken (and the timeframe for them to be implemented) to prevent the reoccurrence of the problem highlighted in condition 2.0A(b)(i) and to develop additional reinjection capacity such that conditions 2.0(b) and 6.1(b) will be met;</p> <p>iv. The maximum flow required to be discharged and the contaminant load of the spent geothermal fluid that will be discharged; and</p> <p>vi. The maximum duration of the discharge; and</p> <p>c. The Chief Executive of the Bay of Plenty Regional Council (or delegate) certifies that the report produced in accordance with condition 2.0A(b) warrants a discharge for the duration and up to the flow rate sought by the Consent Holder;</p> <p>(Refer to advice notes 3 & 5)</p>
2.1	<p>The Consent Holder shall discharge a daily average of between 200 and 400 cubic metres per hour of spent geothermal fluid to the Umapokapoka Lagoon at all times, except that:</p> <p>a. Between 0 and 199.9 cubic metres per hour of spent geothermal fluid can be discharged to the Lagoon for up to 14 consecutive days; or</p> <p>b. Between 400.01 and 600 cubic metres per hour of spent geothermal fluid can be discharged to the Lagoon for up to 7 consecutive days when one or more of the</p>

	<p>circumstances set out in condition 7.1(a) to 7.1(c) of this resource consent occurs.</p> <p>(Refer to Advice Note 1)</p>
2.2	<p>The Consent Holder shall notify the trustees of the Matata Lot 39A2A block within 48 hours of the commencement of spent geothermal fluid being discharged to the Lagoon, or ceased in accordance with conditions 2.1A(a) and 2.1A(b). The notice provided in accordance with this condition shall:</p> <ol style="list-style-type: none"> Set out the duration or anticipated duration of the discharge or cessation of the discharge; and The management measures to be implemented by the consent holder during the discharge or cessation of the discharge (if any are needed) .
2.3	<p>The Consent Holder shall make all reasonable endeavours to ensure that all discharges conducted in accordance with conditions 20.A, 2.1(a) and 2.1(b) of this resource consent occur for the shortest durations practicable.</p>
3.1	<p>From the commencement of this resource consent until the 30 July 2024 <u>1 May 2027</u>, the spent geothermal fluid discharged to the Tarawera River shall only be discharged at one or both of the two discharge points shown on BOPRC Plan No. 67151-1 and located at the map references set out in condition 4.</p>
3.2	<p>From the 30 July 2024 <u>1 May 2027</u> the spent geothermal fluid discharged to the Tarawera River shall only be discharged via the West Bank Discharge Point, unless contingency discharges occur in accordance with conditions 7.1 to 7.4 of this resource consent. In such circumstances, the Consent Holder may use either or both of the two discharge points set out in condition 3.1.</p>
3.3	<p><u>Except in relation to contingency discharges, the Consent Holder shall adopt all reasonable endeavours to discontinue the East Bank Discharge before 1 May 2027.</u></p>
3.4	<p><u>Within 6 months of 1 May 2022, and every 6 months thereafter until the East Bank Discharge is discontinued, the Consent Holder shall provide a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) and the Chief Executive of Te Runanga o Ngāti Awa (or delegate) that:</u></p> <ol style="list-style-type: none"> <u>sets out the actions undertaken by the Consent Holder toward the ultimate discontinuation of the East Bank Discharge;</u> <u>sets out the actions that remain to be taken by the Consent Holder;</u> <u>provides an estimated time frame for completion of the actions that remain to be taken; and</u> <u>reports on the results of sampling and monitoring data required by conditions 10.1a and 10.1B.</u>
3.5	<p><u>The Consent Holder shall not apply for a change of the conditions of this consent, or for a new consent, to authorise discharges from the East Bank Discharge Point after 1 May 2027.</u></p> <p><u>(Refer to Advice Note 7)</u></p>
<p>Map Reference</p>	
4.0	<p><i>East Bank Discharge Point:</i> Map Reference NZMS 260 V15 3654 4204 (True Right Bank).</p> <p><i>West Bank Discharge Point:</i> Map Reference NZMS 260 V15 3661 4218 (True Left Bank).</p>
<p>Legal Description</p>	
5.0	<p><i>East Bank Discharge Point:</i> Lots 2 and 4, DP S2476 and Lots 1 to 3 DP S2878, Block IX and XII, Rangitaiki Upper SD (Kawerau District).</p> <p><i>West Bank Discharge Point:</i> Lot 39A Sec 2A, Parish of Matata Block, Block IX Rangitaiki Upper SD (Whakatane District).</p>

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6.1 The discharge of spent geothermal fluid shall not exceed the following limits, except where a contingency discharge occurs in accordance with condition 7.1 and 7.1A:

- a. From the commencement of this resource consent until ~~the 30 July 2024~~ 1 May 2027:
 - i. A total discharge of hydrogen sulphide of 540 grams per hour;
 - ii. A total discharge of heat of 180 GJ per hour;
 - iii. A total discharge of arsenic of 2160 grams per hour;
 - iv. A total discharge of boron of 50400 grams per hour;
 - v. A total discharge of lithium of 5760 grams per hour;
 - vi. A total discharge of ammonia – nitrogen of 1370 grams per hour; and
 - vii. A total discharge of mercury of 300 milligrams per hour.
- b. From ~~the 30 July 2024~~ 1 May 2027: ~~of this resource consent~~:
 - i. A total discharge of hydrogen sulphide of 250 grams per hour;
 - ii. A total discharge of heat of 83 GJ/hour;
 - iii. A total discharge of arsenic of 1000 grams per hour;
 - iv. A total discharge of boron of 23200 grams per hour;
 - v. A total discharge of lithium of 2650 grams per hour;
 - vi. A total discharge of ammonia – nitrogen of 630 grams per hour; and
 - vii. A total discharge of mercury of 150 milligrams per hour.

7.1 The Consent Holder may discharge spent geothermal fluid to the Tarawera River, up to the limits described in condition 7.2, for the durations set out in conditions 7.3 and 7.4, in the following circumstances:

- a. Where there is a systems failure in the plant operated by the Consent Holder, or one of the third parties that it supplies; and/or
- b. Where there are maintenance shutdowns (either of the Consent Holders assets or the plant of one of the third parties that it supplies) than cannot be avoided or delayed, and that necessitate a higher discharge; and/or
- c. Where there is a failure in a reinjection well or in a reinjection system such that there is insufficient suitable reinjection capacity within the Consent Holder's reinjection system to enable compliance with condition 2.0 of this resource consent.

(Refer to Advice Note 5)

7.1A The Consent Holder shall make all reasonable endeavors to ensure that all discharges conducted in accordance with conditions 7.1 to 7.4 occur for the shortest durations practicable.

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7.2 When discharging in accordance with conditions 7.1 to 7.4 of this resource consent the discharge of spent geothermal fluid shall not exceed the following limits:

- i. The quantity of spent geothermal fluid discharged by the Consent Holder shall not exceed:
 - * 27,600 cubic metres per day; and
 - * 1,150 cubic metres per hour;
- ii. A total discharge of hydrogen sulphide of 720 grams per hour;
- iii. A total discharge of heat of 238 GJ/hour;
- iv. A total discharge of arsenic of 2116 grams per hour;
- v. A total discharge of boron of 53590 grams per hour;

- vi. A total discharge of lithium of 7920 grams per hour;
- vii. A total discharge of ammonia – nitrogen of 1808 grams per hour; and
- viii. A total discharge of mercury of 397 milligrams per hour.

7.3 The Consent Holder shall not discharge in accordance with conditions 7.1, 7.1A and 7.2 of this resource consent for more than 30 consecutive days, or for more than 30 days in a calendar year.
(Refer to Advice Note 1)

7.4 Notwithstanding condition 7.3, the Consent Holder may discharge in accordance with conditions 7.1, 7.1A and 7.2 of this resource consent for more than 30 days in a calendar year if:

- a. The Consent Holder supplies a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) and the Chief Executive of Te Runanga o Ngāti Awa (or delegate) that:
 - i. Sets out the nature of the problem that requires a longer contingency discharge and the circumstances that led to the problem occurring (if known);
 - ii. Sets out the options that have been considered in response to the problem highlighted in condition 7.4(a)(i), and explains why a longer contingency discharge is the most appropriate option;
 - iii. Sets out the actions that will be undertaken to prevent the reoccurrence of the problem highlighted in condition 7.4(a)(i);
 - iv. Explains the consequences of both allowing and not allowing the longer contingency discharge to occur; and
 - v. Proposes a maximum duration and discharge rate for the longer contingency discharge; and
 - vi. Sets out the start and stop dates and maximum duration of the contingency discharge.
- b. The Chief Executive of the Bay of Plenty Regional Council (or delegate) certifies that the report produced in accordance with Condition 7.4(a) warrants a discharge of the duration and maximum flow rate sought by the Consent Holder.

(Refer to Advice Note 3)

7.5 The Consent Holder shall notify (in writing) the Chief Executive of the Bay of Plenty Regional Council (or delegate) of a discharge that is occurring in accordance with conditions 2.1, 7.1, 7.1A and 7.2 of this resource consent within 48 hours of the commencement of the discharge. The notice shall provide the reasons for the discharge, and the duration or anticipated duration of the discharge.

8.0 The Consent Holder shall maintain, to the satisfaction of the Chief Executive of the Bay of Plenty Regional Council (or delegate), an easily accessible sampling point at each of the two discharge points described in conditions 3, 4 and 5 of this resource consent. Each of the sampling points shall be located at a site where a representative sample of the discharge can be obtained.

9.0 All analyses conducted in accordance with the conditions of this resource consent shall be carried out in accordance with the latest edition of “*Standard Methods for the Examination of Water and Wastewater*” APHA-AWWA-WPCF or an alternative method that has been approved by the Chief Executive of the Bay of Plenty Regional Council (or delegate).

10.1a The Consent Holder shall measure the concentrations of the following chemicals in the discharge of spent geothermal fluid at the discharge points that are operational:

- Ammonia
- Hydrogen Sulphide
- Mercury
- Lithium
- Boron
- Arsenic

10.1B The measurements shall occur at the operating discharge points:

- a. At least once per month until 1 January 2018, or such later date in accordance with Condition 10.1B (b), and quarterly (January, April, July and October) thereafter. The measurements shall be collected, as far as is practicable, on the same date of each month;
- b. Monthly measurements may, if determined by the Chief Executive of the Bay of Plenty Regional Council (or delegate) in accordance with conditions 10.1B(c) and 10.1B(d), continue past the 1st of January 2018 until the 1st of January 2021, where the sampling results show a significant variance that may affect the assessment of compliance with the load limits;
- c. To enable the Chief Executive of the Bay of Plenty Regional Council (or delegate) determine whether a monthly monitoring is required beyond the 1st of January 2018, the Consent Holder shall produce a report that:
 - i. provides a statistical analysis of the sampling results; and
 - ii. demonstrates compliance against load limits.

The report shall be forwarded to the Chief Executive of the Bay of Plenty Regional Council (or delegate) by the 1st of November 2017;

- d. Having received the report required by Condition 10.1B(c), the Chief Executive of the Bay of Plenty Regional Council (or delegate) will determine (and subsequently advise the Consent Holder) whether a monthly monitoring is to be continued beyond the 1st of January 2018 to demonstrate compliance with load limits. In making this determination, the Chief Executive of the Bay of Plenty Regional Council (or delegate) shall have regard to the following matters:
 - i. the coefficient of variance in the sampling results, whereby a variance of less than 20% for conservative parameters (boron, arsenic, lithium) and less than 40% for volatile parameters (ammonia and hydrogen sulphide) is acceptable;
 - ii. a comparison against load limits and the significance of any observed variability in assessing compliance against the limits; and
 - iii. whether all or only some of the parameters require additional monthly monitoring.
- e. If a continuation of monthly monitoring beyond the 1st of January 2018 is required in accordance with condition 10.1B(d), the Consent Holder may at any subsequent time request a redetermination. Any redetermination shall follow the process set out in, and be conducted in accordance with conditions 10.1B(c) and 10.1B(d).

10.1C When collecting the hydrogen sulphide samples in accordance with condition 10.1A, the Consent Holder shall employ a 'fixing method', such as adding zinc acetate.

10.2 The Consent Holder shall continuously measure the temperature of the discharge, and the rate of discharge at the discharge points that are operational. The collected data shall be presented as a complete data set, with data points being provided at hourly intervals.

10.3 For the purposes of condition 10.2 of this resource consent, the term 'continuously' shall mean a minimum of one measurement of the temperature and discharge rate being taken at the discharge point (or points) being operated by the Consent Holder, every hour. The measurement of the rate of discharge undertaken shall be to an accuracy of +/- 10 percent.

10.4 Should there be a failure in any monitoring device used by the Consent Holder to monitor its compliance with condition 10.2 of this resource consent, the consent holder shall make all reasonable endeavours to remedy the failure as soon as it is practicable to do so.

10.5 The Consent Holder shall notify the Chief Executive of the Bay of Plenty Regional Council (or delegate) should there be a failure of a monitoring device that prevents data from being gathered for greater than 12 consecutive hours. The notification provided under this condition of consent shall be provided within 48 hours of the consent holder becoming aware of the failure, be in writing and shall set out:

- a. The reason for the failure; and
- b. The measures undertaken to correct the failure; and
- c. The measures being undertaken to prevent the reoccurrence of the failure.

10.6 The contaminant loads in the spent geothermal fluid to be discharged in conditions 6.1 and 7.2 shall be calculated using:

- a. The measured concentration data gathered in accordance with conditions 10.1A to 10.1C; and
- b. The measured temperatures and rate of discharge data that is gathered in accordance with conditions 10.2 and 10.3 at the time that the chemical monitoring data was collected; and

Contaminant loads shall be calculated and reported separately for the discharge points that are being operated by the Consent Holder and then combined for comparison with the limits set out in conditions 6.1 and 7.2.

10.7 The Consent Holder shall, when undertaking the monitoring required by conditions 10.1A to 10.1C, collect duplicate samples. The duplicate samples shall be analysed if the first sample tested (which for the purpose of this resource consent is hereafter referred to as the 'primary sample') results in a load above the applicable limits set by conditions 6.1 or 7.2, and the exceedance is not attributable to the flow limits (as set in conditions 2.0 and 7.2 of this resource consent) being exceeded by the Consent Holder.

10.8 Should the analysis of any duplicate sample undertaken in accordance with condition 10.7 of this resource consent also show that the applicable limits set in conditions 6.1 or 7.2 of this resource consent have been exceeded, and that the exceedance is not attributable to the Consent Holder exceeding the flow limits (as set in conditions 2.0 and 7.2 of this resource consent) the Consent Holder shall:

- a. Within 48 hours of becoming aware that the limits have been exceeded, notify (in writing) the Chief Executive of the Bay of Plenty Regional Council (or delegate). The notice shall identify the limit that has been exceeded, and by how much and how frequently it has been exceeded; and
- b. Collect and analyse a further set of duplicate samples in accordance with the approach (as applicable) set out by conditions 10.1A to 10.1C, 10.6 and 10.7 of this resource consent. The samples shall be collected within 2 weeks of the Consent Holder becoming aware that the limits have been exceeded; and
- c. Within 4 weeks of becoming aware, under condition 10.8(a), that the limits have been exceeded, issue a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) that sets out the:
 - i. Results of the duplicate sampling conducted in accordance with condition 10.8(b) of this resource consent; and
 - ii. Corrective action (if any is needed) that the Consent Holder will undertake to ensure that the discharge complies with the applicable limits set out in conditions 6.1 and 7.2, and the timeframes associated with the completion of the corrective action; and
 - iii. Monitoring and reporting requirements to demonstrate the implementation of the corrective action.
- iv. An estimate of the volumes discharged at the time the duplicate sample was taken.
- d. Implement the management response and the reporting on this response in accordance with condition 10.8(c)(ii).
- e. Upon the corrective action required by condition 10.8(c)(ii) being completed, collect and analyse a further set of primary and duplicate samples in accordance with the approach set out in conditions 10.1A to 10.1C, 10.6 and 10.7. The analysis shall be reported to the Chief Executive of the Bay of Plenty Regional Council (or delegate) within 3 weeks of the corrective action being completed. Should:
 - i. The primary sample confirm that the discharge complies with the applicable limits set out in conditions 6.1 and 7.2, the frequency of the monitoring can return to that required by condition 10.1B and 10.2.
 - ii. The primary and duplicate samples show continued non-compliance with the levels set out in conditions 6.1 or 7.2, the Consent Holder shall be deemed to be in non-compliance with this resource consent.

10.9	The Consent Holder shall continuously measure the flow rate of spent geothermal fluid that is discharged into the Umapokapoka Lagoon. This discharge shall be measured at all points where the Consent Holder discharges spent geothermal fluid into the Umapokapoka Lagoon.
10.10	For the purpose of the monitoring undertaken in accordance with condition 10.9, the term 'continuous' shall mean one measurement being undertaken per hour at each of the points of discharge to the Umapokapoka Lagoon. The measurement of the rate of discharge shall be to an accuracy of +/- 10 percent.
10.11	The Consent Holder shall seek to, within three months of this resource consent commencing, consult with the trustees of the Matata Lot 39A2A block (' the Trust ') to determine if the Trust will allow the Consent Holder to undertake (i) on-going monitoring, and (ii) restoration planting activities (with targeted weed control) in and around the Umapokapoka Lagoon (' the Lagoon '). The consultation that was undertaken / attempted, and all outcomes of the same (including any limitations, conditions or restrictions imposed by the Trust) are to be reported to the Chief Executive of the Bay of Plenty Regional Council (or delegate) by the 30 th of June 2016.
10.12	If the Trust agrees to the Consent Holder undertaking on-going monitoring in and around the Lagoon, the Consent Holder shall, by the 30 th of September 2016, appoint a suitably qualified and experienced expert to prepare a monitoring plan for the Umapokapoka Lagoon. A draft of the monitoring plan is to be submitted to the Trust and comments sought on the approach it advances and any limitations or restrictions that may affect the ability to implement the plan. The Consent Holder is to consider any comments that are made by the Trust, and make any amendments that are appropriate to give effect to conditions 10.13 and 10.14. A final version of the monitoring plan is to be submitted to the Chief Executive of the Bay of Plenty Regional Council (or delegate), for certification, within eight (8) months of the expert being appointed.
10.13	<p>The monitoring plan prepared in accordance with condition 10.12 is to require (to the degree that is possible in light of any limitations, conditions or restrictions imposed by the Trust):</p> <ol style="list-style-type: none"> a. That permanently marked and geo-referenced photo points be established and that photographs be taken of the photo points, and repeated. The purpose of the photographs is to capture and record changes into the Lagoon over time and to help to identify if the discharge authorised by this resource consent is adversely affecting the Umapokapoka Lagoon; b. That the vegetation cover is estimated and described at each occasion when photographs are taken in accordance with condition 10.13(a). The purpose of this monitoring is to enable changes in the ground cover to be discerned, and thereby identify if the discharge authorised by this resource consent is adversely affecting the Umapokapoka Lagoon; c. That vegetation and groundcover mapping be undertaken, and repeated. The purpose of this monitoring is to enable changes in the Lagoon to be discerned, and for any adverse effects of the discharge authorised by this resource consent to be identified; d. That soil and water temperature monitoring within and immediately adjacent to the Umapokapoka Lagoon be undertaken and repeated. This monitoring shall be undertaken at the same time as any monitoring that is conducted in accordance with condition 10.13(c). The purpose of this monitoring is to discern if changes in temperature of the discharge are causing changes in the Lagoon and/or causing adverse effects; and e. That the depth of the silica in the Lagoon is estimated at permanently marked and geo-referenced points, and then monitored. The purpose of this monitoring is to determine the rate of silica build up within the Lagoon and whether this may result in a significant adverse effect on the Umapokapoka Lagoon and / or the use of the pools adjacent to the Lagoon.
10.14	<p>The expert appointed in accordance with condition 10.12 is to also set out the following details in the monitoring plan that is prepared in accordance with condition 10.13:</p> <ol style="list-style-type: none"> a. The duration and frequency of each of the monitoring tasks; b. The criteria that are to be used to determine if any of the changes identified by the monitoring undertaken are: <ol style="list-style-type: none"> i. Caused by the activities authorised by this resource consent; and ii. Represent unacceptable adverse effects.

10.15	<p>Any monitoring plan that is produced in accordance with conditions 10.12 to 10.14 shall be implemented by the Consent Holder once the Chief Executive of the Bay of Plenty Regional Council (or delegate) has certified that it accords with the requirements of conditions 10.12 and 10.13.</p> <p>(refer to Advice Note 3)</p>
10.16	<p>If the Trust agrees to the Consent Holder undertaking restoration planting activities (including targeted weed control), the expert appointed in accordance with condition 10.12 shall, within six months of being appointed, prepare a restoration planting strategy (which includes weed control for the areas where restoration planting is to occur) for the Umapokapoka Lagoon (the 'Area of Interest') and the adjacent terrestrial indigenous vegetation of ecological significance that is supported by the discharge authorised by this resource consent. The strategy is to reflect any limitations, conditions or restrictions imposed by the Trust and is to require the Consent Holder to undertake actions that accord, in the opinion of the expert appointed in accordance with condition 10.12, with the adverse effects that its actions have caused on the terrestrial / geothermal habitats associated with the Umapokapoka Lagoon. The purpose of the strategy is to:</p> <ol style="list-style-type: none"> a. Highlight the actions that are needed to control invasive exotic plant species in and adjacent to the areas that are to be restored (via planting), such that the planting has the best possible chance of maintaining indigenous biodiversity and the level of natural character; and b. Direct the planting of appropriate indigenous species in the Area of Interest, in order to offset the past effects of the abstraction, conveyance and discharge of geothermal fluid, and to maintain the existing indigenous biodiversity and the level of natural character. <p>(Refer to Advice Note 6)</p>
10.17	<p>Any restoration planting management strategy that is produced in accordance with this resource consent shall be implemented by the Consent Holder once the Chief Executive of the Bay of Plenty Regional Council (or delegate) has certified that it accords with the requirements of condition 10.16. (Refer to Advice Note 3)</p>
10.18	<p>The Consent Holder shall appoint a suitably qualified and experienced expert to investigate and report on the mass balance of the Umapokapoka Lagoon.</p>
10.19	<p>The expert appointed in accordance with condition 10.18 of this resource consent shall, having determined the mass balance, advise if the Umapokapoka Lagoon is losing spent geothermal fluid to ground, and if so, is to estimate (as accurately as is practicable) the quantum of the spent geothermal fluid that is being lost.</p>
10.20	<p>The Consent Holder shall forward the report produced by the expert appointed in accordance with condition 10.18 to the Chief Executive of the Bay of Plenty Regional Council (or delegate) within 18 months of this resource consent commencing.</p>
10.21	<p><u>The Consent Holder shall engage a suitably qualified and experienced expert to undertake, in the summer of 2022 / 2023, an unmanned aerial vehicle survey of the Tarawera River from the Kawerau Bridge to 3km downstream of the West Bank Discharge Point using:</u></p> <ol style="list-style-type: none"> <u>(a) thermal imaging to identify geothermal inputs to the river; and</u> <u>(b) high-resolution RGB imaging for river characterisation.</u> <p><u>(Refer to Advice Note 8)</u></p>
10.22	<p><u>The survey required by Condition 10.21 shall be undertaken after a fine weather period of at least two weeks.</u></p>
10.23	<p><u>The Consent Holder shall engage a suitably qualified and experienced expert to undertake, in February / March 2023, a one-off multisite macroinvertebrate study at at least two sites upstream of the East Bank Discharge Point and four sites downstream of the West Bank Discharge Point, including one site located at the end of the mixing zone of the discharges from the East Bank Discharge Point and the West Bank Discharge Point.</u></p>

10.24 Prior to undertaking the study required by Condition 10.23, the Consent Holder shall consult with Bay of Plenty Regional Council staff (or a scientist appointed by the Bay of Plenty Regional Council) regarding the monitoring methods to be used in the study.

10.25 As soon as reasonably practicable after completing the study required by Condition 10.23, the Consent Holder shall provide a report, from the suitably qualified and experienced expert engaged pursuant to Condition 10.23, to the Chief Executive of the Bay Of Plenty Regional Council (or delegate) and the Chief Executive of Te Runanga o Ngāti Awa (or delegate) that:

(a) sets out the results of the study; and

(b) contains an analysis of what the results mean in terms of any effects on the Tarawera River from the discharges from the East Bank Discharge Point and the West Bank Discharge Point.

14.1 All data and reports provided to the Bay of Plenty Regional Council in accordance with the conditions of this resource consent shall:

- a. Be in hard copy and/or a suitable electronic format that is compatible with the Regional Council's computer system; and
- b. Follow a structure that has been approved by the Chief Executive of the Bay of Plenty Regional Council (or delegate).

14.2 The Consent Holder shall, on a monthly basis, produce and submit a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) that provides:

- a. The hourly heat discharge and discharge flow data for the preceding month from the operating discharge points to the Tarawera River; and
- b. The hourly flow data for all of the Consent Holder's discharge points into the Umapokapoka Lagoon.

All discharge flow data collected in accordance with this condition shall be reported in litres per hour and cubic metres per hour.

14.3 The Consent Holder shall, by the 31st of March, the 30th of June, the 30th of September and the 31st of December, produce and submit a report to the Chief Executive of the Bay of Plenty Regional Council (or delegate) that includes the results of the monitoring that has been conducted in accordance with, as appropriate, conditions 10.1A to 10.1C and 10.6 of this resource consent for the three preceding months.

14.4 Should the monitoring undertaken in accordance with conditions 10.1A to 10.1C and 10.6 of this resource consent highlight that changes in the composition of the contaminants in the discharge undertaken in accordance with this resource consent could pose an increased risk to the health of those people bathing in the pools adjacent to the Umapokapoka Lagoon, the Consent Holder shall:

- a. Immediately upon receiving the results, notify the trustees of the Matata Lot 39A2A block and the Chief Executive of the Bay of Plenty Regional Council (or delegate) of the potential health risk; and
- b. Within 5 working days of receiving the results, set out the process that the Consent Holder will follow to investigate the cause of the change in the composition of the spent geothermal fluid and to determine if it is increasing health risk faced by bathers.

14.5 Once the investigation required by condition 14.4 of this resource consent is complete, the Consent Holder shall forward copies of the report summarising the findings to the trustees of the Matata Lot 39A2A block and the Chief Executive of the Bay of Plenty Regional Council (or delegate).

15.1 The Consent Holder shall, annually, prepare a Discharge Management Report for its ongoing activities and operations under this resource consent. The Discharge Management Report shall be submitted to the Chief Executive of the Bay of Plenty Regional Council (or delegate) by the 30th of April each year as either a standalone report, or as a component of a comprehensive report of all of the Consent Holder's activities on the Kawerau Steamfield.

15.2	<p>The Discharge Management Report produced in accordance with condition 15.1 shall for the preceding calendar year:</p> <ol style="list-style-type: none"> a. Provide an update of the progress made by the Consent Holder to achieving the reduction in the volume of spent geothermal fluid that may be discharged to the Tarawera River in accordance with condition 2.0(b); b. Provide an update of the Consent Holder's activities in relation to the reinjection of spent geothermal fluid. This update shall, as a minimum, include: <ol style="list-style-type: none"> i. The percentage of the total volume of spent geothermal fluid that was disposed of by the Consent Holder by reinjection in; and ii. A comparison of the volume of spent geothermal fluid that has been reinjected in the preceding calendar year with the amount of spent geothermal fluid reinjected (per annum) over the previous 10-years; c. Provide an update on the waste heat utilisation; d. Set out the number of contingency discharges that have occurred in accordance with conditions 7.1 to 7.4, their duration and cause; e. Set out the quantity of spent geothermal fluid that has been discharged to the Tarawera River in the preceding calendar year and compare that volume with the quantity discharged in the Tarawera River over the previous 10-years; f. Identify any planned or anticipated closures or upgrades of plant items that may contribute to a reduction or increase in the quantity of spent geothermal fluid that is discharged to the Tarawera River; g. Summarise the number and nature of complaints that have been received; and <ol style="list-style-type: none"> i. Summarise the investigations and actions that were undertaken in relation to each complaint that was received; and ii. Advise if the concerns raised within the complaints have been resolved, or if resolution was not possible; h. Summarise, drawing on the reports produced in accordance with conditions 14.2 and 14.3 of this resource consent, the Consent Holder's compliance with conditions 2.0, 2.1, 6.1, 7.1, 7.1A, 7.2, 7.3 and (as applicable) 7.4; i. Set out, drawing on the monitoring conducted and the reports produced in accordance with conditions 10.11 to 10.14 of this resource consent, if the activities authorised by this resource consent are unacceptably affecting the Lagoon and/or the values it supports; j. Summarise the number and nature of any notifications provided in accordance with condition 14.4 of this resource consent, and the outcome of any investigations undertaken in accordance with condition 14.5; and k. Summarise the restoration activities that have been undertaken by the Consent Holder in accordance with conditions 10.16 and to 10.17 of this resource consent.
16.0	<p>The Consent Holder shall maintain signs facing the river near each of the two discharge points described in conditions 4 and 5. Signs near the West Bank Discharge Point (as also described in conditions 4 and 5) shall be erected (and maintained) to face the pools adjacent to the Umapokopoka Lagoon. The signs shall warn the public of the discharges of hot geothermal fluid.</p>
17.0	<p>For the purposes of assessing the magnitude of any actual and potential effects of the discharge authorised by this resource consent on the Tarawera River, the mixing zone for the two discharge points described in conditions 3, 4 and 5 of this resource consent commences at the East Bank Discharge Point and ends 200 metres downstream of the West Bank Discharge Point.</p>
18.1	<p>The Bay of Plenty Regional Council may serve notice of its intention to review, amend, delete or add to the conditions of this resource consent under section 128 of the Resource Management Act 1991 in all or any of the following circumstances:</p> <ol style="list-style-type: none"> a. Once every year from the commencement of this consent, for all or any of the following

purposes:

- i. To deal with any unanticipated adverse effects resulting from changes to the Umapokapoka Lagoon (including the geothermal vegetation within and in the immediate vicinity of the Lagoon) and/or the adjacent pools which may arise from the exercise of this consent; and
- ii. To deal with any unanticipated adverse effect on the water quality and ecology of the Tarawera which may arise from the exercise of this resource consent; and
- iii. To deal with any unacceptable adverse ecological and/or water quality effects that arise from the exercise of a longer contingency discharge authorised under condition 7.4; and
- iv. To amend or add discharge management strategy, modelling, monitoring, and reporting conditions, and conditions implementing additional measures to avoid, remedy or mitigate adverse environmental effects, in order to enable the Council to better manage

any unanticipated adverse effects that may arise from the exercise of this resource consent;

- b. At any time, where compliance or impact monitoring undertaken by the Bay of Plenty Regional Council and/or the Consent Holder shows an unacceptable adverse effect (or effects) on the environment and/or that the Consent Holder is not complying with the obligations set out in this resource consent. The purpose of such a review is to ensure that the Consent Holder's actions under this resource consent are appropriate to avoid, remedy, or mitigate any adverse effects on the environment;
- c. At any time to meet the requirements of the final version of a Kawerau Single System Management Plan created under the Bay of Plenty Regional Policy Statement. The purpose of such a review is to consider whether any conditions are required to be changed or added to give effect to the Kawerau Single System Management Plan; and
- d. At any time, for purposes of considering if the conditions of this resource consent need to be amended to reflect:
 - i. Any water quality standards and/or discharge limits set in a relevant operative regional plan that has been publicly notified after the date of commencement of this resource consent to be met; and/or
 - ii. Any relevant national environmental standard.
(See Advice Note 2)

18.2 All reasonable costs incurred by the Bay of Plenty Regional Council when undertaking a review of this resource consent under section 128 of the Resource Management Act 1991, (as specified in condition 18.1) shall be borne by the Consent Holder.

19.0 This permit shall expire on 31st of December 2050.

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

21.1 The Consent Holder shall establish and resource a Community Liaison Group for the duration of this consent and shall as a minimum invite, in writing, interested parties to annual meetings to provide feedback and comment on environmental issues related to the exercise of this resource consent. The annual meetings shall be held in a suitable venue in the month of June each year. The interested parties shall include, but need not be limited to, representatives of Te Runanga o Ngati Awa, Ngati Tuwharetoa (BoP) Settlement Trust, Mighty River Power, the trustees of the Matata Lot 39A2A block and Huia Pacey.

21.2 Parties attending the meetings required by condition 21.1 of this resource consent shall be provided with a copy of the annual report produced in accordance of conditions 15.1 and 15.2, excluding any parts of the reports that the Consent Holder and the Chief Executive of the Bay of Plenty Regional Council (or delegate) agree are confidential and/or commercially sensitive. Copies of the reports shall be issued with the written invitations, and shall also be available at the meeting.

21.3	<p>The meetings required by condition 21.1 of this resource consent need not occur if:</p> <ol style="list-style-type: none"> a. The parties listed in the condition advise (in writing) the Consent Holder and the Chief Executive of the Bay of Plenty Regional Council (or delegate) that the meeting is not required; or b. The Consent Holder advises (in writing) the Chief Executive of the Bay of Plenty Regional Council (or delegate) that there has been no response from any of the parties listed in condition 21.1 to an invitation to meet.
21.4	<p>The Consent Holder shall keep minutes of the meetings held in accordance with condition 21.1 of this resource consent. The minutes shall record the names of those who attended the meetings, the main topics of discussion and any agreed outcomes. The Consent Holder shall forward a copy of the minutes to the Chief Executive of the Bay of Plenty Regional Council (or delegate) and the meeting participants within four (4) weeks of the meeting being held.</p>
22.1	<p>The Consent Holder shall keep a register of complaints lodged with it in respect of the discharges, activities and operations it undertakes in accordance with this resource consent.</p>
22.2	<p>The register prepared and maintained in accordance with condition 22.1 of this resource consent shall record the following details for each complaint that is made:</p> <ol style="list-style-type: none"> a. The date and time of the complaint; and b. The name and contact details (if they are provided to the Consent Holder) and a description of the complaint; and c. The investigations (if any) that the Consent Holder undertook in response to each complaint; and d. Any action (if any) that was undertaken to address the concerns raised in the complaint; and e. The feedback provided to each complainant.
22.3	<p>The Consent Holder shall:</p> <ol style="list-style-type: none"> a. Forward a copy of each complaint that it receives to the Chief Executive of the Bay of Plenty Regional Council (or delegate) within five working days of receiving the complaint; and b. Forward a copy of the register prepared and maintained in accordance with condition 22.1 of this resource consent to the Chief Executive of the Bay of Plenty Regional Council (or delegate) within five working days of receiving a request to do so from the Council.

Advice Notes:

1. *Should several discreet discharge flows, or one discharge flow be undertaken both (i) in accordance with conditions 2.1(a), 2.1(b), 7.1, 7.1A and 7.2, and (ii) over the period of a day cumulatively add to 12 hours or more, then that day shall count as a 'day' under conditions 2.1A(a), 2.1A(b) and 7.3.*
2. *For the purpose of condition 18.1 of this resource consent, the term 'unanticipated effect' shall include instances where (i) an effect has arisen that was not contemplated in the resource consent application (and all supporting information – such as the Assessment of Environmental Effects report and all 'further information'), and/or (ii) when an effect was contemplated in the resource consent application (and all supporting information), but the magnitude of the effect was incorrectly predicted / assessed. The latter situation would apply, for example, where the resource consent application assessed an effect as being minor, but monitoring showed the effect to be more than minor.*
3. *For the purpose of this resource consent, the terms 'certifies' and 'certification' means a process whereby the Consent Holder supplies a report, and the Chief Executive of the Bay of Plenty Regional Council (or delegate) assesses the report to ensure that it achieves/ satisfies the requirements of the relevant condition(s) of consent. Should the report, in the opinion of the Chief Executive (or delegate), achieve the intent of the relevant condition(s) they will issue written advice to the Consent Holder confirming that the requirements of the relevant condition(s) are satisfied. If the Chief Executive (or delegate) is not satisfied that the requirement of the relevant condition(s) been achieved, they shall advise (in writing) the Consent Holder of their concerns and ask that the report be reworked so as to address the concerns, and then be resubmitted. This process shall be repeated until the Chief Executive (or delegate) is able to certify that the requirements of the condition(s) of consent have been satisfied.*
4. *It is anticipated that all spent geothermal fluid not discharged to the Tarawera River or consumed by customers will be discharged, via reinjection, to the Kawerau Geothermal System.*
5. *Condition 2.0A provides for a specific circumstance where, in the transition to reducing the volume of spent geothermal fluid that is discharged to the Tarawera River by increasing the level of reinjection, there is insufficient additional capacity within the Consent Holder's injection system, as a consequence of a failure of an injection well, to enable the lower discharge rates and contaminant loads set by conditions 2(b) and 6.1(b) to be met. Conditions 7.1 to 7.5 provide for short term, higher, contingency discharges that can occur throughout the duration of this resource consent where a short-term problem or failure with the Consent Holder's reinjection system occurs. These contingency discharges can occur irrespective of whether condition 2.0A has been invoked.*
6. *The Council and the Consent Holder acknowledge that several parties have altered and adversely affected the Umapokapoka Lagoon. The Restoration Planting Strategy required by Condition 10.16 is to be prepared so as to align the level of weed control and restoration planting with the adverse effects that have occurred as a consequence of the Consent Holder's actions. Put another way, it is not expected that the Restoration Planting Strategy will require the Consent Holder to undertake works that are out of proportion with its past adverse effects.*
7. *Condition 3.5 was offered on an Augier basis to address the concerns of the Bay of Plenty Regional Council and Te Runanga o Ngāti Awa and settle the Consent Holder's appeal to the Environment Court by consent. The Bay of Plenty Regional Council was the respondent to the appeal and Te Runanga o Ngāti*

Awa was a section 274 party to the appeal. The appeal was against the 3 year provision for continued use of the Eastern Discharge Point made in the Bay of Plenty Regional Council's decision dated 28 July 2021 on a change of conditions application by the Consent Holder to continue use of the Eastern Discharge Point for 14 years. The Consent Holder recognises that in offering the condition on an Augier basis it has legally abandoned its right to apply for a new consent or to change the conditions of this consent to continue use of the Eastern Discharge Point beyond 1 May 2027.

8. The survey required by Condition 10.21 provides information to help design the location of monitoring sites for the macroinvertebrate monitoring required by Condition 10.23.
9. Note that Te Rūnanga o Ngāti Awa considers that consents for geothermal discharges and geothermal takes of this nature should be considered together to ensure greater ability to manage the geothermal fluid, manage the quality of the discharge, and to avoid contingency volumes of mercury being discharged to the Tarawera River as a matter of routine.