Taranaki Regional Council

AGENDA
Operations & Regulatory

Tuesday 3 September 2024, 9.00am

Operations and Regulatory Committee

03 September 2024 09:00 AM

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Whakataka te hau

Karakia to open and close meetings

Whakataka te hau ki te uru	Cease the winds from the west
Whakataka te hau ki te tonga	Cease the winds from the south
Kia mākinakina ki uta	Let the breeze blow over the land
Kia mātaratara ki tai	Let the breeze blow over the ocean
Kia hī ake ana te atakura	Let the red-tipped dawn come with a sharpened air
He tio, he huka, he hauhu	A touch of frost, a promise of glorious day
Tūturu o whiti whakamaua kia tina.	Let there be certainty
Tina!	Secure it!
Hui ē! Tāiki ē!	Draw together! Affirm!

Date: 3 September 2024

Subject: **Operations and Regulatory Committee Minutes – 23 July 2024**

Author: M Jones, Governance Administrator

Approved by: AJ Matthews, Director - Environment Quality

Document: 3298402

Recommendations

That Taranaki Regional Council:

a) takes as read and confirms the minutes of the Operations and Regulatory Committee meeting of the Taranaki Regional Council held in the Taranaki Regional Council chambers, 47 Cloten Road, Stratford on 23 July 2024 at 9.00am

b) notes the recommendations therein were adopted by the Taranaki Regional Council on Tuesday 6 August 2024.

Appendices/Attachments

Document 3292496: Operations and Regulatory Minutes 23 July 2024.

Date: 23 July 2024

Venue: Taranaki Regional Council Boardroom, 47 Cloten Road, Stratford

Document: 3292496

Present:

S W Hughes	Chair
M J Cloke	
M G Davey	
D M Cram	
D H McIntyre	(joined meeting at 9.04am)
C L Littlewood	ex officio
N W Walker	ex officio
B J Bigham	(zoom)
D L Lean	(zoom joined at 9.16am)
D Luke	Iwi Representative
Ā White	Iwi Representative
P Muir	Federated Farmers

Attending:

S J Ruru	Chief Executive (zoom)
A J Matthews	Director - Environment Quality
A D McLay	Director – Resource Management
D R Harrison	Director - Operations
J Glasgow	Compliance Manager
F Kiddle	Strategy Lead
C Vicars	Rivers Manager
C Woollen	Communications Advisor
J Reader	Communication Manager
A Bunn	Systems Engineer
M Jones	Governance Administrator

Karakia: The meeting opened with a group karakia at 9.00am.

Apologies: Were received and sustained from R Buttimore. Councillor McIntyre for lateness.

Cram/Walker

1. Confirmation of Minutes Operations and Regulatory Committee 11 June 2024

Resolved

That the Taranaki Regional Council:

a) took as read and confirmed the minutes of the Operations and Regulatory Committee of the Taranaki Regional Council held on 11 June 2024 at Taranaki Regional Council 47 Cloten Road Stratford

b) noted the recommendations therein were adopted by the Taranaki Regional Council on Tuesday 25 June 2024.

Davey/Littlewood

2. Resource Consents Issued under Delegated Authority & Applications in Progress

2.1 A D McLay advised of consents granted, consents under application and of consent processing actions since the last meeting.

Resolved

That the Taranaki Regional Council:

a) received the schedule of resource consents granted and other consent processing actions, made under delegated authority.

Cloke/Littlewood

3. Incidents, Compliance Monitoring Non Compliances and Enforcement Summary - 17 May to 30 June 2024

3.1 J Glasgow provided a summary of the incidents, compliance monitoring non-compliances and enforcement for the period 17 May to 30 June 2024.

3.2 C Littlewood declared a conflict and abstained from discussion and the vote.

3.3 D McIntyre declared a conflict abstained from the vote

3.4 M Davey declared a conflict and abstained from the vote.

Resolved

That the Taranaki Regional Council:

a) received this memorandum Incident, Compliance Monitoring Non-Compliances and Enforcement Summary – 17 May to 30 June 2024

b) received the summary of the incidents, compliance monitoring non-compliances and enforcement for the period from 12 April 2024 to 16 May 2024

c) noted the action taken by staff acting under delegated authority

d) adopted the recommendations therein.

Cram/Walker

4. Waiwhakaiho Upgrade 2024: Summary

4.1 C Vicars gave a PowerPoint presentation on the Waiwhakaiho River Control Scheme upgrade project that has been completed.

Resolved

That the Taranaki Regional Council:

a) received the report, Waiwhakaiho Upgrade 2024: Summary

Lean/McIntyre

There being no further business the Committee Chairperson, Councillor S W Hughes, declared the meeting of the Operations and Regulatory Committee closed at 9.54am.

Operations and Regulatory Committee Chairperson: _____

S W Hughes

Date: 3 September 2024

Subject: **Resource Consents Issued Under Delegated Authority and Applications in Progress**

Author: L Miller, Manager - Resource Consents

Approved by: A D McLay, Director - Resource Management

Document: 3299143

Purpose

1. The purpose of this memorandum is to advise the consents granted, consents under application and of consent processing actions since the last meeting. This information is summarised in attachments at the end of this report.

Executive summary

2. Memorandum to advise of recent consenting actions made under regional plans and the Resource Management Act 1991, in accordance with Council procedures and delegations.

Recommendation

That Taranaki Regional Council:

a) receives the schedule of resource consents granted and other consent processing actions, made under delegated authority.

Background

3. The attachments show resource consent applications, certificates of compliance and deemed permitted activities that have been investigated and officer decisions. They are activities having less than minor adverse effects on the environment, or having minor effects where affected parties have agreed to the activity. In accordance with sections 87BB, 104 to 108 and 139 of the Resource Management Act 1991, and pursuant to delegated authority to make these decisions, the Chief Executive or the Director—Resource Management, has allowed the consents, certificates of compliance and deemed permitted activities.
4. The exercise of delegations under the Resource Management Act 1991 is reported for Members' information. Under the delegations manual, consent processing actions are to be reported to the Operations and Regulatory Committee.

5. In addition to the details of the activity consented, the information provided identifies the Iwi whose rohe (area of interest) the activity is in. If the activity is in an area of overlapping rohe both Iwi are shown. If the activity is within, adjacent to, or directly affecting a statutory acknowledgement (area of special interest), arising from a Treaty settlement process with the Crown, that is also noted.
6. Also shown, at the request of Iwi members of the Council, is a summary of the engagement with Iwi and Hapū, undertaken by the applicant and the Council during the application process. Other engagement with third parties to the consent process is also shown. The summary shows the highest level of involvement that occurred with each party. For example, a party may have been consulted by the applicant, provided with a copy of the application by the Council, served notice as an affected party, lodged a submission and ultimately agreed with the consent conditions. In that case the summary would show only 'agreed with consent conditions', otherwise reporting becomes very complicated.
7. The attachment titled 'Consent Processing Information' includes the figure 'Consent Applications in Progress' which shows the total number of applications in the consent processing system over the last twelve months. The number of applications for the renewal of resource consents is also shown. The difference between the two is the number of new applications, including applications for a change of consent conditions. New applications take priority over renewal applications. Renewal applications are generally put on hold, with the agreement of the applicant, and processed when staff resources allow. A consent holder can continue to operate under a consent that is subject to renewal. The above approach is pragmatic and ensures there are no regulatory impediments to new activities requiring authorisation.
8. The attachment also includes:
    a. Applications in progress table - the number of applications in progress at the end of each month (broken down into total applications and the number of renewals in progress) for this year and the previous two years
    b. Potential hearings table outlining the status of applications where a hearing is anticipated and the decision maker(s) (e.g. a hearing panel) has been appointed
    c. Consents issued table - the number of consents issued at the end of each month for this year and the previous two years
    d. Breakdown of consents issued. This is the number of consents issued broken down by purpose – new, renewals, changes or review
    e. Types of consents issued, further broken down into notification types – non-notified, limited notified or public notified
    f. The length of time to issue decisions on applications broken down by month and the range of days it took to make the decision
    g. Applications received versus decisions made each year
    h. Number of times that the public and iwi were involved in an application process for the year so far
    i. Application processing time extensions compared to the previous years
    j. Consent type process shows the notification type including applications submitted on and the pre-hearing resolution numbers
    k. Applications that have been returned because they are incomplete.

Financial considerations—LTP/Annual Plan

9. This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

10. This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

11. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.

Community considerations

12. This memorandum and the associated recommendations have considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

13. This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

Document 3298834: List of non-notified consents

Document 3299016: Schedule of non-notified consents

Document 3298842: List of limited notified consents

Document 3299073: Schedule of limited notified consents

Document 3299585: Consents processing charts

Non-notified authorisations issued by the Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Discharge Permit						
Consent	**Holder**	**Subtype**	**Industry Primary**	**Industry Secondary**	**Purpose Primary**	**Activity Purpose**
R2/0584-3.0	ABH Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/0782-4.0	Willcox Farms Ltd	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/0951-4.0	TM & SC Hurley Family Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/1057-3.0	Kelbretar Trust Partnership	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/1214-3.0	Denham Trucking & Digging Limited	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/1869-4.0	MR Mills & Estate RA Mills	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/2239-3.0	Lynette Janet Gargan	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/2555-3.0	Mr Gordon John Glentworth	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/2816-3.0	FJ Mullan & JA Mullan Family Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/2964-3.0	Puketapu Partners	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3076-3.0	Cview Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3077-3.0	Pebble River Farms Limited	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3410-3.0	BLL Farm Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3489-3.0	Two J's and M. Le Prou Family Trust Partnership	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3575-3.0	Harold Thomspon Estate	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3755-3.0	Joyce Family Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/3943-3.0	Shaun Anthony Eichstaedt	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/4865-3.0	Hornby MacDonald Family Trust	Land - Animal Waste	Agriculture	Farming - Dairy	Effluent disposal	Replace
R2/5202-3.0	Fulton Hogan Limited - New Plymouth	Air - Industry	Manufacturing and Processing	Bitumen and Asphalt		Replace
R2/5892-3.0	Remediation (NZ) Limited	Land/Water Industry	Waste Management	Worm farm		Replace
R2/6217-2.1	Taranaki Bulk Storage Limited	Land/Water Industry	Storage and Distribution	Fertiliser Manufacturing		Change
R2/7995-3.0	Todd Petroleum Mining Company Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/7996-3.1	Todd Petroleum Mining Company Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/7997-3.1	Todd Petroleum Mining Company Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/9457-3.0	Todd Energy Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/9833-2.1	Todd Petroleum Mining Company Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/9835-2.1	Todd Petroleum Mining Company Limited	Land - Hydraulic Fracturing	Energy	Wellsite	Exploration and Production	Replace
R2/10773-3.1	Papa Rererangi i Puketapu Limited (NP Airport)	Land - Industry	Transport	Waste Management	Wastewater - Sewage	Change
R2/11255-1.0	Uhlenberg Properties Limited	Land/Water - Earthworks	Property Development		Commercial Development	New

Non-notified authorisations issued by the Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Land Use Consent						
Consent	**Holder**	**Subtype**	**Industry Primary**	**Industry Secondary**	**Purpose Primary**	**Activity Purpose**
R2/1227-2.0	Todd Energy Limited	Dam/Weir	Energy	Production Station	Exploration and Production	Replace
R2/5845-2.0	Fonterra Limited	Dam/Weir	Manufacturing and Processing	Dairy Processing		Replace
R2/7433-2.0	Haybarn Trust Partnership	Structure - Culvert	Agriculture	Farming - Dairy	Access	Replace
R2/11239-1.0	New Plymouth District Council	Structure - Culvert	Local Government	Transport	Roading	New
R2/11251-1.0	New Plymouth District Council	Dam/Weir	Local Government		Wastewater - Sewage	New
R2/11261-1.0	New Plymouth District Council	Structure - Pipeline	Local Government		Wastewater - Sewage	New
R2/11267-1.0	Manukorihi Golf Club Inc	Dam/Weir	Recreational		Irrigation - Golf Greens	New

Non-notified authorisations issued by the Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Water Permit						
Consent	**Holder**	**Subtype**	**Industry Primary**	**Industry Secondary**	**Purpose Primary**	**Activity Purpose**
R2/1721-4.0	Manukorihi Golf Club Inc	Take Surface Water	Recreational		Irrigation - Golf Greens	Replace
R2/7497-2.0	Te Rua O Te Moko Limited	Take Surface Water	Agriculture	Farming - Dairy	Stock water	Replace
R2/7540-2.0	AJ & DI Dravitzki Trusts Partnership	Take Groundwater	Agriculture	Farming - Dairy	Stock water	Replace
R2/7895-2.2	Ohawe Farm Limited	Take Surface Water	Agriculture	Farming - Dairy	Irrigation - Pasture	Replace
R2/11233-1.0	Todd Energy Limited	Dam	Energy	Production Station	Exploration and Production	New
R2/11262-1.0	New Plymouth District Council	Divert	Local Government		Wastewater - Sewage	New
R2/11264-1.0	Fonterra Limited	Dam	Manufacturing and Processing	Dairy Processing		New

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/0584-3.0

ABH Trust

Commencement Date: 25 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 216 Arawhata Road, Oaonui

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust

No return correspondence was received

R2/0782-4.0

Willcox Farms Ltd

Commencement Date: 04 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 852 Mid Kāhui Road, Rahotu

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust

No return correspondence was received

R2/0951-4.0

TM & SC Hurley Family Trust

Commencement Date: 17 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 635 Ngariki Road, Rahotu

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust

No return correspondence was received

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/1057-3.0

Kelbretar Trust Partnership

Commencement Date: 30 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 193 Rama Road, Otakeho

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/10773-3.1

Papa Rererangi i Puketapu Limited (NP Airport)

Commencement Date: 05 Aug 2024

Expiry Date: 01 Jun 2027

Activity Class: Discretionary

Location: 192 Airport Drive, New Plymouth

Application Purpose: Change

To discharge contaminants onto and into land after treatment via a septic tank

Change of consent conditions to increase the effluent discharge volume limit from 15 m^3/day to a running weekly average of 19 m^3/day

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Nga Kaitiaki O Puketapu Hapū Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Puketapu Hapu & Te Atiawa

Return correspondence was received on 24 July 2024 from Te Atiawa as follows:

- *The Te Atiawa Coastal Marine Statutory Acknowledgement area and the Waiongana Stream are in close proximity to the subject site. The NP airport property is located on Puketapu Pā, a site of significance to Puketapu hapū.*
- *Both Puketapu hapū and Te Kotahitanga are supportive of the applicant's ongoing investigation into a wastewater management solution for this site, and are supportive of the granting of this variation application until the connection of the airport facilities to the Waitara to New Plymouth septic main; which is the preferred waste management solution for the site for Iwi and hapū.*
- *Inclusion of a condition mandating that the airport is connected to the sewer main once this connection becomes available is also recommended.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Considerations during processing of the application

Council replied via email on 26 July 2024 (Council document: 3294883). An excerpt of the response is provided below:

"I have had regard to your request to consider adding in a condition requiring the connection of the NP Airport site to the main when it becomes available. As this is a variation application, we can only look specifically at the effects of the increased discharge volumes, so the connection of the airport to the main cannot be considered as part of this application. However, from the updates I have been receiving from Beca, connecting the airport to the reticulated NPDC system is the preferred option, and good progress is being made on finalising a solution for the site. We have granted Papa Rererangi i Puketapu Ltd a short consent term (June 2027 expiry) with the expectation that they prioritise implementing a new system as soon as practicable. If a solution has not been implemented by June 2027, we would at that stage consider more specific conditions regarding the system to be installed, and when it would need to be in place by."

The applicant has undertaken comprehensive consultation with Puketapu hapū, and their long-term plan to remove and replace the existing wastewater system has been informed by this ongoing engagement. On receipt of a copy of this change application, Raukura Salisbury, Consents Lead for Nga Kaitiaki o Puketapu Hapu Trust, commented that:

"Puketapu are comfortable with the wastewater discharge application as it aligns with the discussions we have had over the last few months".

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11233-1.0

Todd Energy Limited

Commencement Date: 15 Jul 2024

Expiry Date: 01 Jun 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Discretionary

Location: 1334 Otaraoa Road, Tikorangi

Application Purpose: New

To dam water in the Mangahewa Stream

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Rahiri Hapū Trust	Consulted by applicant
Otaraua Hapū Trust	Consulted by applicant
Pukerangiora Hapū	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Rūnanga o Ngāti Maru (Taranaki) Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

Return correspondence was received on 30 March 2023 from Te Atiawa noting that the applicant had engaged with Otaraua hapū prior to lodgement, and that the application had therefore been forwarded onto Otaraua hapū by Te Kotahitanga for further comment.

Considerations during processing of the application

Prior to lodgement of the suite of replacement consents, the applicant consulted with representatives from Te Atiawa Iwi, Ngāti Maru Iwi, Otaraua hapū, Pukerangiora hapū, and Ngāti Rahiri hapū. As part of this consultation process in-person and online meetings were held between March 2022 and January 2023, and site meetings arranged, which have informed the final proposal.

The applicant has committed to ongoing collaborative work with Tangata Whenua, including the implementation of a Mangahewa Stream enhancement project aiming to improve fish passage throughout the catchment and restore riparian vegetation along the banks of the stream.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11239-1.0

New Plymouth District Council

Commencement Date: 29 Jul 2024

Expiry Date: 01 Jun 2038

Review Dates: Jun 2026, Jun 2032

Activity Class: Discretionary

Location: 76 and 9 Surrey Hill Road, New Plymouth

Application Purpose: New

To use a culvert in the Wakamure Stream

Rohe:

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Tairi Hapū	Consulted by applicant
Te Kāhui o Taranaki Trust	Consulted by applicant
Te Kāhui o Taranaki Trust	No return correspondence was received

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R2/11251-1.0

New Plymouth District Council

Commencement Date: 31 Jul 2024

Expiry Date: 01 Jun 2034

Activity Class: Discretionary

Location: Sutherland Park, New Plymouth

Application Purpose: New

To install, use and remove temporary dams in two unnamed tributaries of the Huatoki Stream, to enable the installation of a sewer main

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Te Whiti Hapū	Consulted by applicant
Te Kāhui o Taranaki Trust	Consulted by applicant
Te Kāhui o Taranaki Trust	No return correspondence was received
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	No return correspondence was received
Ngāti Te Whiti Hapū	Response received

Comments from Ngāti Te Whiti Hapū

Return correspondence was received from Ngāti te Whiti (Te Atiawa Iwi) on 18 July 2024. A summary of the comments received is provided below:

- *The applicant has engaged with Ngā Mahanga, Ngāti Tairi and Ngāti te Whiti hapū (ngā hapū) from the initial planning stages. Whilst the works area is within the rohe of Te Atiawa Iwi, Taranaki Iwi also have historical associations with the area.*
- *Although not pertinent to this application, Ngāti te Whiti have not received sufficient information regarding the stormwater management infrastructure for the project.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *Ngāti te Whiti support the implementation of the following mitigations:*
  - *Cultural monitoring*
  - *Silt and sediment controls, including revegetation of slopes*
  - *Retention of pumped ground water on site*
  - *Collaborative planning and implementation of a stream planting/fencing plan*

Considerations during processing of the application

The applicant has undertaken comprehensive consultation with Te Atiawa Iwi, Taranaki Iwi and hapū, including multiple in person meetings and site visits.

Following consultation, Ngāti Te Whiti hapū and Te Kotahitanga o Te Atiawa provided an email response to the applicant stating that they were "comfortable with the response and the processes described to ensure a streamlined process for the future resource consents, including the engagement of the expert advice of tangata whenua" and that "Subject to the proposed resource consent conditions, including the provision of Ngāti Te Whiti cultural monitoring and silt and sediment control measures during earthworks, Ngāti Te Whiti are comfortable with the proposal."

R2/11255-1.0

Uhlenberg Properties Limited

Commencement Date: 17 Jul 2024

Expiry Date: 01 Jun 2029

Review Dates: Jun 2025, Jun 2026, Jun 2027, Jun 2028

Activity Class: Controlled

Location: 140 De Havilland Drive, Bell Block

Application Purpose: New

To discharge stormwater and sediment from earthworks to land and into the Waitaha Stream

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Puketapu Hapū	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11261-1.0

New Plymouth District Council

Commencement Date: 29 Jul 2024

Expiry Date: 01 Jun 2056

Review Dates: Jun 2032, Jun 2038, Jun 2044, Jun 2050

Activity Class: Discretionary

Location: Sutherland Park, New Plymouth

Application Purpose: New

To install and use a sewer main below the bed of two unnamed tributaries of the Huatoki Stream, including the associated vegetation clearance and disturbance of the stream bed

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Te Whiti Hapū	Consulted by applicant
Te Kāhui o Taranaki Trust	Consulted by applicant
Te Kāhui o Taranaki Trust	No return correspondence was received
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	No return correspondence was received
Ngāti Te Whiti Hapū	Response received

Comments from Ngāti Te Whiti Hapū

Return correspondence was received from Ngāti te Whiti (Te Atiawa Iwi) on 18 July 2024. A summary of the comments received is provided below:

- *The applicant has engaged with Ngā Mahanga, Ngāti Tairi and Ngāti te Whiti hapū (ngā hapū) from the initial planning stages. Whilst the works area is within the rohe of Te Atiawa Iwi, Taranaki Iwi also have historical associations with the area.*
- *Although not pertinent to this application, Ngāti te Whiti have not received sufficient information regarding the stormwater management infrastructure for the project.*

- *Ngāti te Whiti support the implementation of the following mitigations:*
  - *Cultural monitoring*
  - *Silt and sediment controls, including revegetation of slopes*
  - *Retention of pumped ground water on site*
  - *Collaborative planning and implementation of a stream planting/fencing plan*

Considerations during processing of the application

The applicant has undertaken comprehensive consultation with Te Atiawa Iwi, Taranaki Iwi and hapū, including multiple in person meetings and site visits.

Following consultation, Ngāti Te Whiti hapū and Te Kotahitanga o Te Atiawa provided an email response to the applicant stating that they were "comfortable with the response and the processes described to ensure a streamlined process for the future resource consents, including the engagement of the expert advice of tangata whenua" and that "Subject to the proposed resource consent conditions, including the provision of Ngāti Te Whiti cultural monitoring and silt and sediment control measures during earthworks, Ngāti Te Whiti are comfortable with the proposal."

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11262-1.0

New Plymouth District Council

Commencement Date: 29 Jul 2024

Expiry Date: 01 Jun 2034

Activity Class: Discretionary

Location: Sutherland Park, New Plymouth

Application Purpose: New

To temporarily dam and divert two unnamed tributaries of the Huatoki Stream to enable the installation of a sewer main

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Te Whiti Hapū	Consulted by applicant
Te Kāhui o Taranaki Trust	Consulted by applicant
Te Kāhui o Taranaki Trust	No return correspondence was received
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	No return correspondence was received
Ngāti Te Whiti Hapū	Response received

Comments from Ngāti Te Whiti Hapū

Return correspondence was received from Ngāti te Whiti (Te Atiawa Iwi) on 18 July 2024. A summary of the comments received is provided below:

- *The applicant has engaged with Ngā Mahanga, Ngāti Tairi and Ngāti te Whiti hapū (ngā hapū) from the initial planning stages. Whilst the works area is within the rohe of Te Atiawa Iwi, Taranaki Iwi also have historical associations with the area.*
- *Although not pertinent to this application, Ngāti te Whiti have not received sufficient information regarding the stormwater management infrastructure for the project.*

- *Ngāti te Whiti support the implementation of the following mitigations:*
  - *Cultural monitoring*
  - *Silt and sediment controls, including revegetation of slopes*
  - *Retention of pumped ground water on site*
  - *Collaborative planning and implementation of a stream planting/fencing plan*

Considerations during processing of the application

The applicant has undertaken comprehensive consultation with Te Atiawa Iwi, Taranaki Iwi and hapū, including multiple in person meetings and site visits.

Following consultation, Ngāti Te Whiti hapū and Te Kotahitanga o Te Atiawa provided an email response to the applicant stating that they were "comfortable with the response and the processes described to ensure a streamlined process for the future resource consents, including the engagement of the expert advice of tangata whenua" and that "Subject to the proposed resource consent conditions, including the provision of Ngāti Te Whiti cultural monitoring and silt and sediment control measures during earthworks, Ngāti Te Whiti are comfortable with the proposal."

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11264-1.0

Fonterra Limited

Commencement Date: 29 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: Jun 2028, Jun 2034, Jun 2040

Activity Class: Discretionary

Location: 339B South Road, Hāwera

Application Purpose: New

To dam water in the Tawhiti Stream for water intake purposes

Rohe:

Ngāti Ruanui

Engagement or consultation:

Te Korowai o Ngāruahine Trust	Applicant provided application
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	Applicant provided application

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/11267-1.0

Manukorihi Golf Club Inc

Commencement Date: 05 Aug 2024

Expiry Date: 01 Jun 2039

Review Dates: Jun 2027, Jun 2030, Jun 2033, Jun 2036

Activity Class: Discretionary

Location: 20 Wills Road, Waitara

Application Purpose: New

To use a weir structure within the Waipapa Stream for the purpose of golf course irrigation and general purposes

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Otaraua Hapū Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

Return correspondence was received from Te Atiawa on 1 July 2021 as follows:

- *Te Atiawa commended that the applicant had already commenced engagement with them in regards to the consent renewal, however they raised a number of matters for Council to consider with respect to impacts on cultural values as part of the consent process.*
- *Te Atiawa noted that the consent renewal application is not in accordance with a number of policies of Tai Tangata, Tai Whenua and Tai Ao and wished to be further engaged by the applicant around this consent renewal.*

Considerations during processing of the application

Prior to lodging the consent application in 2019, the applicant had begun consultation with Te Atiawa and associated hapū through Sarah Mako of Te Atiawa.

As part of this consultation, Sarah and the hapū outlined a number of questions they had to which the applicant subsequently provided answers to. These questions and answers were provided to Council as part of the original consent application. However, it was noted within the consent application, that consultation had not reached an end point and would continue post lodgement and be reported to Council. No further updates or reporting had been provided to Council post lodgement.

A Section 92 Request for Further Information (RFI) was issued on 6 December 2022. This RFI requested that the applicant provide an assessment of the effects that the water take would have on Māori cultural values, specifically those of Te Kotahitanga o Te Atiawa Trust (Te Atiawa). As part of the Section 92 process, the applicant began re-engagement with Te Atiawa through the Otaraua Hapū of Te Atiawa. As part of this, the applicant undertook a site visit with the hapū to understand their concerns and issues with the activity. The outcome from this was that the Otaraua Hapū would prepare an Otaraua Hapū Impact Assessment (OHIA) that clearly outlined how the activity impacts upon their cultural values.

This OHIA notes a number of consent conditions that the Otaraua Hapū want included into the consent conditions when the consent is granted. These are as follows:

- *That the renewal of the water take consent does not exceed 15 years.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *That the water take for this consent does not exceed the 190 m^3 per day at a maximum rate of 7 liters per second capacity from the unnamed tributary of the Waipapa stream.*
- *That the applicant prepare a Fish Passage Design Plan to prevent native fish from accessing the unnamed Waipapa stream tributary.*
  a. *If Condition 3 (the fish passage design plan) is satisfactory, we agree that the weir/dam does not need resource consent; and*
  b. *Otaraua Hapu are to be involved in the design plan process alongside the applicant.*
- *That the applicant creates a narrative explaining the rationale behind the fish passage design plan for when the permit is up for renewal in 15 years.*
- *Otaraua Hapū believes that an Assessment of Archaeological Effects needs to be produced to advise on the potential impact on the physical remnants of archaeological sites and to initiate the necessary procedures with Heritage New Zealand Pouhere Taonga (HNZPT).*
- *If any earthworks are required:*
  a. *the applicant shall provide Otaraua Hapu with the Earthworks Plan; and*
  b. *the applicant shall provide Otaraua Hapu with the Erosion and Sediment Control Plan.*
- *If Cultural and Environmental Monitoring is required:*
  a. *That the applicant shall engage with Otaraua to monitor the site(s) during any earthworks; and*
  b. *That the applicant accepts the Otaraua Accidental Discovery Protocols.*
- *If any Waahi Tapu are within the area of the site:*
  a. *A 50-meter buffer for any earthwork's exclusion zone shall be established around any Waahi Tapu (including Sites and Areas of Significance to Māori (SASM) and Significant of Natural Areas (SNA)).*
  b. *Provision for access to any Waahi Tapu will be secured as part of the proposal.*
  c. *In the event of any Historic Heritage that was unrecorded at [DATE OF CONSENT GRANT] is encountered through the construction/earthworks phase of the development, the re-discovery shall be discussed by the Kaitiaki Forum who shall certify how to proceed and how this information may be incorporated into the overall design, construction, and operation of any part of the site.*
- *That the Consent Holder provide design plans for any landscaping and/or planting that maybe planned to be done on site.*

Following the receipt of the OHIA, the applicant confirmed that there was no proposal to undertake any earthworks as part of this consent renewal and was uncertain as to where the basis for these proposed conditions came from. The applicant confirmed that they were happy with the 15 years consent duration and the noted abstraction rates and volumes. Additionally, the applicant noted that the requirement for fish passage was a matter for Council to confirm and the applicant to ensure that this is maintained. Council is satisfied that fish passage is currently provided for, nevertheless, Council standard consent condition wording would be applied to the newer weir structure consent.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/1214-3.0

Denham Trucking & Digging Limited

Commencement Date: 04 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: Rowan Road, Hawera

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/1227-2.0

Todd Energy Limited

Commencement Date: 15 Jul 2024

Expiry Date: 01 Jun 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Discretionary

Location: 1334 Otaraoa Road, Tikorangi

Application Purpose: Replace

To use a weir in the Mangahewa Stream

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Rahiri Hapū Trust	Consulted by applicant
Otaraua Hapū Trust	Consulted by applicant
Pukerangiora Hapū	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Rūnanga o Ngāti Maru (Taranaki) Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

Return correspondence was received on 30 March 2023 from Te Atiawa noting that the applicant had engaged with Otaraua hapū prior to lodgement, and that the application had therefore been forwarded onto Otaraua hapū by Te Kotahitanga for further comment.

Considerations during processing of the application

Prior to lodgement of the suite of replacement consents, the applicant consulted with representatives from Te Atiawa Iwi, Ngāti Maru Iwi, Otaraua hapū, Pukerangiora hapū, and Ngāti Rahiri hapū. As part of this consultation process in-person and online meetings were held between March 2022 and January 2023, and site meetings arranged, which have informed the final proposal.

The applicant has committed to ongoing collaborative work with Tangata Whenua, including the implementation of a Mangahewa Stream enhancement project aiming to improve fish passage throughout the catchment and restore riparian vegetation along the banks of the stream.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/1721-4.0

Manukorihi Golf Club Inc

Commencement Date: 05 Aug 2024

Expiry Date: 01 Jun 2039

Review Dates: Jun 2027, Jun 2030, Jun 2033, Jun 2036

Activity Class: Discretionary

Location: 20 Wills Road, Waitara

Application Purpose: Replace

To dam, take and use water from a reservoir on the Waipapa Stream for golf course irrigation and general purposes

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Otaraua Hapū Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

Return correspondence was received from Te Atiawa on 1 July 2021 as follows:

- *Te Atiawa commended that the applicant had already commenced engagement with them in regards to the consent renewal, however they raised a number of matters for Council to consider with respect to impacts on cultural values as part of the consent process.*
- *Te Atiawa noted that the consent renewal application is not in accordance with a number of policies of Tai Tangata, Tai Whenua and Tai Ao and wished to be further engaged by the applicant around this consent renewal.*

Considerations during processing of the application

Prior to lodging the consent application in 2019, the applicant had begun consultation with Te Atiawa and associated hapū through Sarah Mako of Te Atiawa.

As part of this consultation, Sarah and the hapū outlined a number of questions they had to which the applicant subsequently provided answers to. These questions and answers were provided to Council as part of the original consent application. However, it was noted within the consent application, that consultation had not reached an end point and would continue post lodgement and be reported to Council. No further updates or reporting had been provided to Council post lodgement.

A Section 92 Request for Further Information (RFI) was issued on 6 December 2022. This RFI requested that the applicant provide an assessment of the effects that the water take would have on Māori cultural values, specifically those of Te Kotahitanga o Te Atiawa Trust (Te Atiawa). As part of the Section 92 process, the applicant began re-engagement with Te Atiawa through the Otaraua Hapū of Te Atiawa. As part of this, the applicant undertook a site visit with the hapū to understand their concerns and issues with the activity. The outcome from this was that the Otaraua Hapū would prepare an Otaraua Hapū Impact Assessment (OHIA) that clearly outlined how the activity impacts upon their cultural values.

This OHIA notes a number of consent conditions that the Otaraua Hapū want included into the consent conditions when the consent is granted. These are as follows:

- *That the renewal of the water take consent does not exceed 15 years.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *That the water take for this consent does not exceed the 190 m^3 per day at a maximum rate of 7 liters per second capacity from the unnamed tributary of the Waipapa stream.*
- *That the applicant prepare a Fish Passage Design Plan to prevent native fish from accessing the unnamed Waipapa stream tributary.*
  a. *If Condition 3 (the fish passage design plan) is satisfactory, we agree that the weir/dam does not need resource consent; and*
  b. *Otaraua Hapu are to be involved in the design plan process alongside the applicant.*
- *That the applicant creates a narrative explaining the rationale behind the fish passage design plan for when the permit is up for renewal in 15 years.*
- *Otaraua Hapū believes that an Assessment of Archaeological Effects needs to be produced to advise on the potential impact on the physical remnants of archaeological sites and to initiate the necessary procedures with Heritage New Zealand Pouhere Taonga (HNZPT).*
- *If any earthworks are required:*
  a. *the applicant shall provide Otaraua Hapu with the Earthworks Plan; and*
  b. *the applicant shall provide Otaraua Hapu with the Erosion and Sediment Control Plan.*
- *If Cultural and Environmental Monitoring is required:*
  a. *That the applicant shall engage with Otaraua to monitor the site(s) during any earthworks; and*
  b. *That the applicant accepts the Otaraua Accidental Discovery Protocols.*
- *If any Waahi Tapu are within the area of the site:*
  a. *A 50-meter buffer for any earthwork's exclusion zone shall be established around any Waahi Tapu (including Sites and Areas of Significance to Māori (SASM) and Significant of Natural Areas (SNA)).*
  b. *Provision for access to any Waahi Tapu will be secured as part of the proposal.*
  c. *In the event of any Historic Heritage that was unrecorded at [DATE OF CONSENT GRANT] is encountered through the construction/earthworks phase of the development, the re-discovery shall be discussed by the Kaitiaki Forum who shall certify how to proceed and how this information may be incorporated into the overall design, construction, and operation of any part of the site.*
- *That the Consent Holder provide design plans for any landscaping and/or planting that maybe planned to be done on site.*

Following the receipt of the OHIA, the applicant confirmed that there was no proposal to undertake any earthworks as part of this consent renewal and was uncertain as to where the basis for these proposed conditions came from. The applicant confirmed that they were happy with the 15 years consent duration and the noted abstraction rates and volumes. Additionally, the applicant noted that the requirement for fish passage was a matter for Council to confirm and the applicant to ensure that this is maintained. Council is satisfied that fish passage is currently provided for, nevertheless, Council standard consent condition wording would be applied to the newer weir structure consent.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/1869-4.0

MR Mills & Estate RA Mills

Commencement Date: 31 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033
Activity Class: Controlled

Location: 1064 Auroa Road, Hawera

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/2239-3.0

Lynette Janet Gargan

Commencement Date: 12 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033
Activity Class: Controlled

Location: 330 Mangawhero Road, Auroa

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	Response received

Comments from Ngāruahine

On 8 May 2024 Ngāruahine commented the following:

- *There has been no pre-application consultation or communication from the applicant with Te Korowai or Ngāti Tu and Ngāti Haua.*
- *We acknowledge that Section 36A of the RMA does not require applicants to consult with anyone about resource consent applications.*
- *However, it is the expectation of Te Korowai that applicants and/or their consultants are following best practice and engaging early with hapū and Iwi to identify potential issues.*
- *The applicant has indicated in their application that the distance from their effluent discharge point from the Mangawhero Stream is 25 meters.*
- *The applicants AEE summarise the issues and mitigation measures they propose to manage those issues.*
- *This is especially important given there is no clear indication of where the effluent exclusion zone begins or ends*
- *While we are supportive of the equipment and storage improvements that are being made by the applicant, our first and most significant concern is the protection of the Mangawhero Stream and its tributaries.*
- *Te Korowai supports all findings and recommendations within the Dairy Effluent Systems Report.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *We would like the applicant to provide evidence of their Riparian Management Plan (if available). This will assist us in assessing the potential impact of the discharge activity.*

Considerations during processing of the application

On 22 May 2024 James Cookson responded to Ngāruahine with the following:

Firstly, I would like to acknowledge the time you have taken to consider application 23-02239-3.0, JP & LJ Gargan and provide Council with your comments.

As you are aware, almost every dairy discharge application received by council is a replacement of an existing activity and a controlled activity under the Regional Fresh Water Plan for Taranaki. Applications, which meet the standards/terms/conditions of a controlled activity must be granted.

However, the council sets the terms and conditions of a resource consent, granted under a controlled activity. When granted, the activity will be subject to the conditions reasonably necessary to avoid or mitigate adverse environmental effects in accordance with the Regional Freshwater Plan for Taranaki.

Each application received for the discharge of FDE, the information provided, is reviewed by council staff, which includes an on farm investigation with the applicant and individuals involved in the day-to-day operation of the dairy farm.

Also, all farm dairy effluent discharge (FDE) consent are subject to a monitoring programme, ensuring conditions of their consent are adhered to.

A number of those condition ensure, the FDE disposal system shall be designed, managed, operated and regularly maintained to ensure that the conditions of the consent are adhered to and no discharge of FDE occurs to surface water.

Also, the resource consent requires that no contaminants shall be discharged within:

- *25 metres of any surface water body; or*
- *25 metres of any fenced (or otherwise identified) urupa without the written approval of the relevant Iwi; or*
- *50 metres of any bore, well or spring used for water supply purposes; or*
- *100 metres of any wetland; or*
- *150 metres from any marae, unless the written approval of the marae Chair has been obtained to allow the discharge at a closer distance.*

This includes, a requirement for the consent holder and/or whoever operates the FDE disposal system to keep a record of effluent discharged to land including as minimum the:

- *date of discharge;*
- *depth, volume or rate of discharge of liquid effluent;*
- *volume of solid effluent;*
- *effluent type (e.g. liquid, slurry, solid);*
- *source of any solid effluent (e.g. anaerobic pond sludge, sand trap);*
- *the specific area that effluent was applied to (shown on a map, plan or aerial photograph); and*
- *the size (in ha or m^2) of the area that effluent was applied to*

This information shall be provided to the Taranaki Regional Council upon request, which is mostly requested during a monitoring inspection.

Thank you for your response and council will pass on your comments to the applicant.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/2555-3.0

Mr Gordon John Glentworth

Commencement Date: 04 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 1703 Eltham Road, Kaponga

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust — Response received

Comments from Ngāruahine

On 18 December 2023 Ngāruahine commented the following:

- *There has been no pre-application consultation or communication from the applicant with Te Korowai or Ngāti Tū and Ngāti Haūa hapū.*
- *We acknowledge that Section 36A of the RMA does not require applicants to consult with anyone about resource consent applications.*
- *However, it is the expectation of Te Korowai that applicants and/or their consultants are following best practice and engaging early with hapū and Iwi to identify potential issues.*
- *The applicant has indicated in their application that the distance from their effluent discharge point is 25 metres.*
- *The applicants AEE summarise the issues and mitigation measures they propose to manage those issues.*
- *This is especially important given there is no clear indication of where the effluent exclusion zone begins or ends*
- *While we are supportive of the equipment and storage improvements that are being made by the applicant, our first and most significant concern is the protection of the Mangawhero and Mangawheroiti Stream and their tributaries.*
- *Te Korowai supports all findings and recommendations within the Diary Effluent Systems Report*
- *We would like the applicant to provide evidence of their Riparian Management Plan (if available). This will assist us in assessing the potential impact of the discharge activity.*

Considerations during processing of the application

On 20 December 2023 Council requested permission from the applicant to release the riparian plan.

On 7 June 2024 James Cookson responded to Ngāruahine with the following:

Firstly, I would like to acknowledge the time you have taken to consider application 23-02555-3.0, Gordon John Glentworth and provide Council with your comments,

As you are aware, almost every dairy discharge application received by council is a replacement of an existing activity and a controlled activity under the Regional Fresh Water Plan for Taranaki. Applications, which meet the standards/terms/conditions of a controlled activity must be granted.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

However, the council sets the terms and conditions of a resource consent, granted under a controlled activity. When granted, the activity will be subject to the conditions reasonably necessary to avoid or mitigate adverse environmental effects in accordance with the Regional Freshwater Plan for Taranaki.

Each application received for the discharge of farm dairy effluent discharge (FDE), the information provided, is reviewed by council staff, which includes an on farm investigation with the applicant and individuals involved in the day-to-day operation of the dairy farm.

Also, all FDE consent are subject to a monitoring programme, ensuring conditions of their consent are adhered to.

A number of those condition ensure, the FDE disposal system shall be designed, managed, operated and regularly maintained to ensure that the conditions of the consent are adhered to and no discharge of FDE occurs to surface water.

Also, the resource consent requires that no contaminants shall be discharged within:

- *25 metres of any surface water body; or*
- *25 metres of any fenced (or otherwise identified) urupa without the written approval of the relevant Iwi; or*
- *50 metres of any bore, well or spring used for water supply purposes; or*
- *100 metres of any wetland; or*
- *150 metres from any marae, unless the written approval of the marae Chair has been obtained to allow the discharge at a closer distance.*

This includes, a requirement for the consent holder and/or whoever operates the FDE disposal system to keep a record of effluent discharged to land including as minimum the:

- *date of discharge;*
- *depth, volume or rate of discharge of liquid effluent;*
- *volume of solid effluent;*
- *effluent type (e.g. liquid, slurry, solid);*
- *source of any solid effluent (e.g. anaerobic pond sludge, sand trap);*
- *the specific area that effluent was applied to (shown on a map, plan or aerial photograph); and*
- *the size (in ha or m^2) of the area that effluent was applied to*

This information shall be provided to the Taranaki Regional Council upon request, which is mostly requested during a monitoring inspection.

In short, council encourage farmers to use as much of the dairy farm as practically possible when discharging FDE to land in all its forms, while complying with resource consent condition and observing industry best practiced.

Thank you for your response and council will pass on your comments to the applicant.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/2816-3.0

FJ Mullan & JA Mullan Family Trust

Commencement Date: 06 Aug 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 435 Kina Road, Oaonui

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust	No return correspondence was received

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R2/2964-3.0

Puketapu Partners

Commencement Date: 19 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 140 Puketapu Road, Pihama

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust	No return correspondence was received
Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/3076-3.0

Cview Trust

Commencement Date: 12 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 265 Manaia Road, Manaia

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/3077-3.0

Pebble River Farms Limited

Commencement Date: 05 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 544 Eltham Road, Mangatoki

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	Response received

Comments from Ngāruahine

Return correspondence was received on 25 January 2024 from Taela O'Shea-Herewini (Pou Whirinaki Taiao – Environmental Planner) at Te Korowai o Ngāruahine Trust on behalf of Ōkahu-Inuāwai and Kanihi-Umutahi hapū as follows:

- *Ōkahu-Inuāwai and Kanihi-Umutahi opposes any discharge consents to the whenua that affect groundwater, discharges that impact streams, waterways, tributaries that feed the streams and rivers.*
- *Protection of Waingongoro River is urgent due to heavy pollutants from the activity that surrounds the Waingongoro and streams/tributaries that feed into Waingongro Awa that have rendered it one of the most polluted waterways in Aotearoa.*
- *This is their current stance on discharge consents until further notice. Please note that a formal response will be developed in the coming weeks regarding all consents in the ŌkahuInuāwai and Kanihi-Umutahi takiwā.*

Considerations during processing of the application

On 4 March 2024 James Cookson, Programme Lead – Primary Industry, responded to Te Korowai o Ngāruahine Trust with the following:

We would like to acknowledge the time taken to consider these applications and for providing the Council with comments on behalf of Ōkahu-Inuāwai and Kanihi-Umutahi hapū.

We acknowledge hapū have commented in opposition to any discharges to the whenua that affect groundwater, discharges that impact streams, waterways and tributaries that feed the streams and rivers. We recognise the historical, spiritual and cultural connection of Okahu-Inuawai and Kanahi-Umutahi hapū to the whenua, and waterways within their takiwa.

In response to the comments received, these applications are replacements of an existing activity and a controlled activity under the Regional Fresh Water Plan for Taranaki (RFWP). In practical terms this means that if applications we receive can meet the standards/terms/conditions of a controlled activity then they must be granted.

However, the Council does set the terms and conditions of a resource consent granted under a controlled activity. When granted, the activity will be subject to the conditions reasonably necessary to avoid or mitigate adverse environmental effects in accordance with the Regional Freshwater Plan for Taranaki. Resource consent conditions require that the consent holder shall, at all times, manage effluent irrigation so that, while complying with the other requirements of the consent, the storage available in the effluent disposal system is maximised.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

A number of conditions are set so that the farm dairy effluent (FDE) disposal system shall be designed, managed, operated and regularly maintained to ensure that the conditions of the consent are adhered to and no unauthorised discharge of FDE occurs to surface water.

There is also a requirement for the consent holder and/or whoever operates the FDE disposal system, to keep a record of effluent discharged to land, including as minimum the:

a) date of discharge;
b) depth, volume or rate of discharge of liquid effluent;
c) volume of solid effluent;
d) effluent type (e.g. liquid, slurry, solid);
e) source of any solid effluent (e.g. anaerobic pond sludge, sand trap);
f) the specific area that effluent was applied to (shown on a map, plan or aerial photograph); and
g) the size (in ha or m2) of the area that effluent was applied to.

This information shall be provided to the Taranaki Regional Council upon request, which is generally requested during a monitoring inspection.

I appreciate the concern raised by hapū regarding the protection the Waingongoro river from pollutants and the current state of the awa. Our Council is in the process of developing a new Land and Freshwater Plan for Taranaki which will replace our current Regional Freshwater Plan. Key to this is kōrero about how we manage freshwater. Your comments and feedback are valued as part of this process, and your concerns relating to this matter have been shared with the policy team. Councils policy team are working closely with Ngāruahine Pou Taiao in the development of policy and through this relationship have offered the opportunity to discuss anything further with hapū. Please let the team know if you would like to do so.

I would like to again thank you for your comments as they provide valuable insight to both the Council and the applicant. We will continue to encourage early engagement from applicants and will be sharing your comments with them. If you have any further comments, or queries, please do not hesitate to contact me.

R2/3410-3.0

BLL Farm Trust

Commencement Date: 04 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 127 Lower Inaha Road, Manaia

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/3489-3.0

Two J's and M. Le Prou Family Trust Partnership

Commencement Date: 25 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 512 Patiki Road, Pihama

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Taranaki (Statutory Acknowledgement)

Engagement or consultation:

Te Kāhui o Taranaki Trust	No return correspondence was received
Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/3575-3.0

Harold Thomspon Estate

Commencement Date: 05 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 1527 Opunake Road, Mahoe

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/3755-3.0

Joyce Family Trust

Commencement Date: 30 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 436 Manaia Road, Hawera

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/3943-3.0

Shaun Anthony Eichstaedt

Commencement Date: 08 Aug 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033
Activity Class: Controlled

Location: 24 Windsor Road, Inglewood

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Te Kotahitanga o Te Atiawa Trust	No return correspondence was received

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R2/4865-3.0

Hornby MacDonald Family Trust

Commencement Date: 05 Jul 2024

Expiry Date: 01 Sep 2039

Review Dates: Jun 2027, Jun 2033
Activity Class: Controlled

Location: 828 Fraser Road, Hawera

Application Purpose: Replace

To discharge farm dairy effluent onto land

Rohe:

Ngāti Ruanui

Engagement or consultation:

Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/5202-3.0

Fulton Hogan Limited - New Plymouth

Commencement Date: 08 Aug 2024

Expiry Date: 01 Jun 2044

Review Dates: Jun 2032, Jun 2038

Activity Class: Discretionary

Location: Various locations throughout the Taranaki region

Application Purpose: Replace

To discharge emissions into the air from a mobile asphalt plant at various locations throughout the Taranaki region

Rohe:

Ngaa Rauru Kiitahi

Ngāruahine (Statutory Acknowledgement)

Ngāti Maru

Ngāti Mutunga

Ngāti Ruanui

Ngāti Tama

Taranaki (Statutory Acknowledgement)

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Te Kaahui o Rauru	No return correspondence was received
Te Kāhui o Taranaki Trust	No return correspondence was received
Te Rūnanga o Ngāti Maru (Taranaki) Trust	No return correspondence was received
Te Rūnanga o Ngāti Mutunga	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received
Te Rūnanga o Ngāti Tama	No return correspondence was received
Te Korowai o Ngāruahine Trust	Response received
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Ngāruahine

On 14 January 2020 Ngāruahine provided feedback in which they noted that, as this is a mobile plant, it is not possible to consider specific sites. Te Korowai o Ngāruahine Trust ('Te Korowai') are interested in the impacts on those in the vicinity of the sites at which the plant will discharge, and want to ensure that the plant is not sited in an inappropriate location.

Te Korowai commented that they do not oppose this application, contingent on the consent including the following conditions:

- *The mobile asphalt plant will not be operated within 300 metres of a dwelling house (including but not limited to papakāinga) or place of public assembly (including but not limited to marae and urupa).*
- *The mobile plant will only be operated in areas zoned industrial.*
- *All crusher dust and aggregate will be kept damp while on site prior to processing.*
- *All properties within 150 m of the site will be notified of the mobile asphalt plant prior to initiating operations.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Considerations during processing of the application

The agent's assessment of environmental effects adequately demonstrated that discharges of hazardous air pollutants are likely to be less than the relevant human health-based criteria at all locations beyond the boundary of the site the plant is located on. Based on this assessment, the 150 m separation distance will be adequate to minimise the effects of the discharges. A greater separation distance would provide only a very marginally higher level of protection for human health, and would restrict the possible site locations available to the applicant.

Special conditions have been recommended that prohibit any discharge beyond the boundary of the site which will cause, or be likely to cause, an exceedance of human health based criteria, or cause an offensive or objectionable effect (i.e. from dust, odour, smoke).

It is considered that, with the conditioned 150 m setback, it is not necessary to restrict the site location to industrially zoned areas. As the applicant may wish to operate within a rural zoned area, depending on the project location, the restriction to industrial zones could be unnecessarily restrictive.

As the 150 m separation distance is being retained, there will be no residential properties located within a 150 m setback of the site to notify. The applicant has confirmed that they will consult with anyone in the wider neighbourhood prior to commencing operations in a new location. Special Condition 1 requires that the applicant undertake the activity in general accordance with the application documentation.

In regards to dust management, it is considered that the proposed consent conditions are adequate to manage potential adverse effects. Special Condition 18 has been recommended, which requires that all stockpiles of aggregate that are liable to produce windblown dust shall be treated or shielded (as far as practicable) to minimise dust emissions, including dampening if required. Special Condition 8 prohibits the discharge of dust to air which causes a hazardous, noxious, dangerous, offensive or objectionable effect at, or beyond the boundary of the property.

Comments from Te Atiawa

The application site is located within the rohe of Te Atiawa, and is approximately 1.6 km east of Muru Raupatu Marae. On 28 May 2021 Te Atiawa commented the following:

- *Te Kotahitanga o Te Atiawa Trust should be identified as affected parties under Section 95E of the Resource Management Act 1991 and limited notified of the application under Section 95B of the Resource Management Act 1991. We were not engaged on the original application, which consented air discharges throughout the Te Atiawa rohe. This has and will continue to have the potential to result in adverse effects on cultural values and interests, and on general health and wellbeing.*
- *We oppose the issue of blanket/global consents, which may adversely affect Te Atiawa values and interests (Pol. TTOM3.6, TTOT3.3). We have significant concerns for the health and well-being of the environment, and for people living and working near where the mobile asphalt plant may operate.*
- *There is no monitoring data provided that demonstrates there compliance with the existing consent conditions, and we have not been notified of any non-compliances. We require regular monitoring, and the results shall be sent to Ngā Hapū o Te Atiawa and Te Kotahitanga o Te Atiawa Trust.*
- *We would require the applicant to operate the asphalt plant from a pre-determined, fixed location. Air dispersing modelling shall demonstrate that the anticipated discharges from the asphalt plant in this fixed, pre-determined location do not exceed New Zealand air quality standards.*
- *It is also noted that air dispersion modelling is modelling, it is not measuring the actual levels of pollutants in the atmosphere from the operation of the asphalt plant. We have concerns regarding the operation of the asphalt plant from the Fulton Hogan site on Corbett Road, given its proximity to muru raupatu marae, the Waitaha and Mangati Streams, and residences.*
- *Regular air quality monitoring shall be undertaken, and the results sent to Te Atiawa. Where monitoring shows that air quality within the receiving environment is deteriorating due to the activity, discharges to air from the activity shall cease until this is rectified.*

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *We require the adoption of clean technologies which reduce adverse effects on the discharge of contaminants on air and atmosphere quality (Pol. TTAR1.2). We support the use of the baghouse filter system to control air pollution from the asphalt plant.*
- *We require as far as practicable that applicants manage air and atmosphere discharges on-site (Pol. TTAR1.5). We require the use of site-specific native planting programmes to off-set the effects resulting from air and atmosphere discharges (Pol. TTAR1.4), particularly where the discharges cannot be managed on-site.*
- *The consent holder shall contribute funds to support Te Kotahitanga o Te Atiawa Trust and Ngā Hapū o Te Atiawa in environmental restoration.*

<u>Considerations during processing of the application</u>

Due to the nature of the activity, the consent holder needs to be able to move the plant throughout the region depending on the roading project location. While the modelling undertaken by the agent only assessed the off-site effects of discharges from the applicant's site, given the conservative modelling parameters it is considered that the results are generally applicable. Additionally, mandatory setback distances from residences and sensitive sites (including medical facilities, educational facilities, marae and urupā) have been recommended as a condition of consent.

The dispersion of contaminants in air is a complex process due to turbulence in the atmosphere and the physical characteristics of different contaminants. Instrumental monitoring of contaminants would require the deployment of multiple expensive instruments over a long time period in order to capture data in all wind conditions. This is not practical, nor is it as cost effective as modelling. The conservatisms built into the model ensure that offsite contaminant concentrations are overestimated to account for uncertainty. A stack emission concentration limit, based on the model, has been recommended to ensure that offsite concentrations remain within acceptable limits.

The deposition of dust onto vegetation and waterways can have detrimental effects at high loadings (Good Practice Guide for Assessing and Managing Dust, MfE, 2016). The set of proposed conditions includes a limit on deposited dust beyond the boundary, which will be sufficient to avoid or minimise adverse ecosystem effects. The proposed dust management measures will further minimise dust discharges from the site.

The consent sets a limit on the concentration of particulate emitted from the baghouse stack but does not require testing to demonstrate compliance. Typically, stack emissions testing of an asphalt plant would be required to ensure compliance with the emission concentration limit, however, given the infrequency with which the plant operates and that there are no Taranaki-based testing companies, it is considered that any routine testing condition would be impractical. A consent condition has been recommended requiring stack testing at the Council's request. Additionally, any compliance inspection undertaken during operation will include instrumental monitoring using a handheld device. The plant will remain on an annual inspection frequency, subject to the plant being operational.

A standard condition will be included which prohibits discharges which will cause, or be likely to cause, an exceedance of human health based criteria.

Given the above, and compliance with the recommended consent conditions, it is considered that any adverse effects can be sufficiently avoided and mitigated such that adverse effects on the environment and all persons would be less than minor.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/5845-2.0

Fonterra Limited

Commencement Date: 29 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: Jun 2028, Jun 2034, Jun 2040

Activity Class: Discretionary

Location: 339B South Road, Hāwera

Application Purpose: Replace

To use a gabion weir and associated fish pass on the Tawhiti Stream for water intake purposes

Rohe:

Ngāti Ruanui

Engagement or consultation:

Te Korowai o Ngāruahine Trust	Applicant provided application
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	Applicant provided application

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R2/5892-3.0

Remediation (NZ) Limited

Commencement Date: 04 Jul 2024

Expiry Date: 01 Jun 2038

Review Dates: Jun 2026, Jun 2032

Activity Class: Controlled

Location: 96 Waitara Road, Brixton

Application Purpose: Replace

To discharge stormwater from greenwaste processing, composting and worm farming operations onto and into land and into an unnamed tributary of the Waiongana Stream

Rohe:

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

On 10 March 2021 Te Atiawa commented the following:

Thank you for providing a copy of the application. The application has been reviewed by Pukerangiora Hapū, the Te Atiawa hapū with mana whenua over the application site and Te Kotahitanga o Te Atiawa Trust.

The proposed renewal activity could affect the unnamed tributary of the Waiongana River that traverses the application site. The Waiongana River and its tributaries form statutory acknowledgement to Te Atiawa under the Te Atiawa Claims Settlement Act 2016. Statutory acknowledgement is a recognition of the cultural, traditional, historical and spiritual relationship Te Atiawa has with those areas.

We have aligned the proposed renewal activity with the Te Atiawa iwi environmental management plan Tai Whenua, Tai Tangata, Tai Ao. The application is considered to be lacking in a number of areas and we specifically make the following comments:

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

- *Pukerangiora and Te Kotahitanga were not engaged to inform the application.*
- *A copy of the extant resource consent has not been provided.*
- *It is unclear from the application what resource consent is required for.*
- *It is understood that the consent holder has been subject to enforcement action with a 'need improvement' status. It is unclear in the application how this has been addressed. The existing consent conditions are insufficient to avoid, remedy or mitigate the existing activity effects.*
- *No details of the weirs and the settling ponds have been provided.*
- *We do not consider 'Stormwater from site has to be discharged' is a reason justifying no consideration of alternatives.*
- *No justification or details provided for monitoring during heavy rainfall events.*
- *No Part 2 of the Resource Management Act 1991 assessment undertaken. We consider sections 6(e), 7(a) and 8 to be relevant in this instance. The Regional Freshwater Plan for Taranaki was made operative over 20 years ago, we consider it does not align with Part 2 currently.*
- *Disagree with the statement that no parties are potentially affected by this proposal. Pukerangiora and Te Kotahitanga will be affected by the proposed stormwater discharge. It will have unacceptable effects on the relationship we are able to have with our ancestral lands, water and other sites.*
- *No assessment of:*
  - *The relevant objectives and policies of the Regional Freshwater Plan for Taranaki.*
  - *The Regional Policy Statement for Taranaki or the National Policy Statement for Freshwater Management including the requirement to give effect to Te Mana o te Wai.*
  - *The Operative and Proposed New Plymouth District Plan. Is there a requirement for territorial authority resource consent? The application should be placed on hold under section 91 of the Resource Management Act 1991.*
  - *Tai Whenua, Tai Tangata, Tai Ao. This assessment can assist the Taranaki Regional Council is assessing the relevant requirements under their policy and Part 2 of the Resource Management Act 1991.*
- *The direct discharge of stormwater into our receiving waters will have an effect on our cultural, traditional and spiritual relationship with the waterbody. It impedes our ability to exercise kaitiakitanga. This conflicts with the objectives and policies of Tai Whenua, Tai Tangata, Tai Ao.*
- *We have not been engaged by the consent holder or the Taranaki Regional Council to undertake our own cultural health index monitoring to inform the extant resource consent monitoring or to inform the proposed renewal.*

For the Taranaki Regional Council to recognise and provide for the values of Pukerangiora and Te Kotahitanga o Te Atiawa, we recommend the following:

- *Further information is requested in accordance with section 92 of the Resource Management Act 1991 processes.*
- *The application is placed on hold under section 91 of the Resource Management Act 1991 processes.*
- *Pukerangiora Hapū and Te Kotahitanga o Te Atiawa are identified as affected parties in accordance with section 95 of the Resource Management Act 1991 processes.*

<u>Considerations during processing of the application</u>

While cultural effects are not a matter of control for this application, we have carefully considered the comments provided by Te Kotahitanga o Te Atiawa Trust. In respect of these, we have conducted an assessment of the proposed activity against the Tai Whenua, Tai Tangata, Tai Ao – Iwi Environmental Management Plan.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/6217-2.1

Taranaki Bulk Storage Limited

Commencement Date: 22 Jul 2024

Expiry Date: 01 Jun 2038

Review Dates: Jun 2024, Jun 2026, Jun 2028, Jun 2030, Jun 2032, Jun 2034, Jun 2036

Activity Class: Discretionary

Location: 4 Monmouth Road, Stratford

Application Purpose: Change

To discharge stormwater from a fertiliser storage and distribution facility onto and into land in circumstances where it may enter an unnamed tributary of the Kahouri Stream

Change of consent conditions in order for the conditions of consent to better represent the scale and significance of the activity, due to errors in the initial application documentation, and to update the purpose

Rohe:

Ngāruahine (Statutory Acknowledgement)

Ngāti Maru

Ngāti Ruanui

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received
Te Rūnanga o Ngāti Maru (Taranaki) Trust	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received

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R2/7433-2.0

Haybarn Trust Partnership

Commencement Date: 10 Jul 2024

Expiry Date: 01 Jun 2042

Review Dates: Jun 2030, Jun 2036

Activity Class: Discretionary

Location: 243 Auroa Road, Hawera

Application Purpose: Replace

To use a culvert in the Taikatu Stream for farm access purposes

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Te Korowai o Ngāruahine Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/7497-2.0

Te Rua O Te Moko Limited

Commencement Date: 06 Aug 2024

Expiry Date: 01 Jun 2041

Review Dates: Jun 2029, Jun 2032, Jun 2035, Jun 2038

Activity Class: Discretionary

Location: 301 Austin Road, Normanby

Application Purpose: Replace

To take and use water from the Waingongoro River for stock drinking and general farm use

Rohe:

Ngāruahine (Statutory Acknowledgement)

Ngāti Ruanui

Engagement or consultation:

Okahu-Inuawai (me etehi atu) Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received

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R2/7540-2.0

AJ & DI Dravitzki Trusts Partnership

Commencement Date: 06 Aug 2024

Expiry Date: 01 Jun 2039

Review Dates: Jun 2027, Jun 2033

Activity Class: Controlled

Location: 760 Tariki Road South, Inglewood

Application Purpose: Replace

To take and use groundwater for stock and farm supply purposes

Rohe:

Ngāti Maru

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Te Rūnanga o Ngāti Maru (Taranaki) Trust	No return correspondence was received
Te Kotahitanga o Te Atiawa Trust	Response received

Comments from Te Atiawa

On 11 December 2020 Te Atiawa provided feedback in which they noted that the property whereby the groundwater bores is located is traversed by numerous unnamed tributaries of the Manganui River. Here Te Atiawa noted that the Manganui River and its tributaries are of statutory acknowledgment to Te Atiawa under the Te Atiawa Claims Settlement Act 2016.

In addition to this, Te Atiawa aligned the consent activity with the objectives and policies of both the Regional Freshwater Plan for Taranaki (RFWP), as well as Te Atiawa's environmental management plan Tai Whenua, Tai Tangata, Tai Ao.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Following this, Te Atiawa noted the following points:

- *Pukerangiora Hapū and Te Kotahitanga o Te Atiawa have not been engaged to inform the renewal;*
- *If water abstraction is required in this locality, this is a clear indication that the land use is unacceptable;*
- *No details of the original bore well have been provided with the application;*
- *Cultural monitoring does not form part of the groundwater monitoring;*
- *There is an on-going adverse cultural effect from the abstraction of water from the well that is unacceptable (section 6.2 and 6.6); and*
- *It is unclear from the application documents where the existing well was drilled. Taranaki Regional Council will be aware that the landscape is of significance to Pukerangiora with a number of scheduled and known sites and areas of significance to Māori on and within the application site's locality.*

Upon conclusion of the above, Te Atiawa noted the following points as being required for Council to progress the consent application:

- *Request further information in accordance with section 92 of the Resource Management Act 1991; and*
- *Identify Pukerangiora and Te Kotahitanga o Te Atiawa Trust as affected parties in accordance with section 95 of the Resource Management Act 1991.*

<u>Considerations during processing of the application</u>

While cultural effects are not a matter of control for this application, we have carefully considered the comments provided by Te Kotahitanga o Te Atiawa Trust. In respect of these, we have conducted an assessment of the proposed activity against the Tai Whenua, Tai Tangata, Tai Ao – Iwi Environmental Management Plan.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/7895-2.2

Ohawe Farm Limited

Commencement Date: 11 Jul 2024

Expiry Date: 01 Jun 2041

Review Dates: Jun 2029, Jun 2032, Jun 2035, Jun 2038

Activity Class: Discretionary

Location: South Road, Tokaora

Application Purpose: Replace

To take and use surface water from a reservoir adjacent to the Waingongoro River for pasture irrigation purposes

Rohe:

Ngāruahine (Statutory Acknowledgement)

Ngāti Ruanui

Engagement or consultation:

Department of Conservation - Crown	Consulted by applicant
Fish & Game New Zealand	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received
Te Rūnanga o Ngāti Ruanui Trust	Consulted by applicant
Te Rūnanga o Ngāti Ruanui Trust	No return correspondence was received
Okahu Hapū	Response received

Comments from Okahu Hapū

On 28 February 2024 Okahu Hapū commented the following:

"Due to the dire and polluted state of our Waingongoro River Our Okahu Hapū via our Environmental Team have not supported any further requests/applications that permits discharges either directly or indirectly to Waingongoro River."

Considerations during processing of the application

Subsequent to the above feedback, a further email was sent to hapū to check if there was any feedback regarding the taking of water adjacent to the Waingongoro River. Noting that the take is disconnected from the Waingongoro River, with water being primarily derived from springs, groundwater seepage and rainfall. No further feedback was received from hapū.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/7995-3.0

Todd Petroleum Mining Company Limited

Commencement Date: 05 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: June annually
Activity Class: Discretionary

Location: KA-1/7/19/20 wellsite, 360 Palmer Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 2900 mTVDss beneath the KA-1/7/19/20 wellsite

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Manuhiakai Hapū	Consulted by applicant
Ngāti Tu Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/7996-3.1

Todd Petroleum Mining Company Limited

Commencement Date: 09 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: June annually
Activity Class: Discretionary

Location: KA-4/14 wellsite, 598 Palmer Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 2900 mTVDss beneath the KA-4/14 wellsite

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Manuhiakai Hapū	Consulted by applicant
Ngāti Tu Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received

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Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/7997-3.1

Todd Petroleum Mining Company Limited

Commencement Date: 11 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: June annually
Activity Class: Discretionary

Location: KA-8/12/15/18 wellsite, 939 Eltham Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 2900 mTVDss beneath the KA-8/12/15/18 wellsite

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Manuhiakai Hapū	Consulted by applicant
Ngāti Tu Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/9457-3.0

Todd Energy Limited

Commencement Date: 11 Jul 2024

Expiry Date: 01 Jun 2044

Review Dates: June annually

Activity Class: Discretionary

Location: Mangahewa-E wellsite, 371 Tikorangi Road East, Waitara

Application Purpose: Replace

To discharge water-based hydraulic fracturing fluids into land at depths greater than 3,200 mTVDss beneath the Mangahewa-E wellsite

Rohe:

Ngāti Mutunga

Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Rahiri Hapū Trust	Consulted by applicant
Otaraua Hapū Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	No return correspondence was received
Te Rūnanga o Ngāti Mutunga	Response received

Comments from Ngāti Mutunga

On 22 November 2022 Ngāti Mutunga commented the following:

- *Ngāti Mutunga oppose all applications for hydraulic fracturing activities within their rohe.*
- *Any hydraulic fracturing activities must be monitored using both western and cultural health indicators that are relevant to Ngāti Mutunga.*
- *Waste produced by Hydraulic fracturing activities are disposed of according to the best industry standards and cultural health indices relevant to Ngāti Mutunga.*

Considerations during processing of the application

Prior to lodgement the applicant contacted representatives of Te Kotahitanga o Te Atiawa, Ngati Rahiri and Otaraua hapū. The applicant has stated they will continue engagement with these groups after the submission of the application. The Council has recommended to the applicant that on-going engagement is to include Ngāti Mutunga.

Non-notified authorisations issued by Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/9833-2.1

Todd Petroleum Mining Company Limited

Commencement Date: 08 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: June annually
Activity Class: Discretionary

Location: KA-2 wellsite, 140 Palmer Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 3000 mTVDss beneath the KA-2 wellsite

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Manuhiakai Hapū	Consulted by applicant
Ngāti Tu Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received

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R2/9835-2.1

Todd Petroleum Mining Company Limited

Commencement Date: 09 Jul 2024

Expiry Date: 01 Jun 2046

Review Dates: June annually
Activity Class: Discretionary

Location: KA-5/10 wellsite, 992 Skeet Road, Kapuni

Application Purpose: Replace

To discharge water based hydraulic fracturing fluids into land at depths greater than 3000 mTVDss beneath the KA-5/10 wellsite

Rohe:

Ngāruahine (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Manuhiakai Hapū	Consulted by applicant
Ngāti Tu Hapū	Consulted by applicant
Te Korowai o Ngāruahine Trust	Consulted by applicant
Te Korowai o Ngāruahine Trust	No return correspondence was received

---

Limited Notified authorisations issued by the Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

Coastal Permit						
Consent	**Holder**	**Subtype**	**Industry Primary**	**Industry Secondary**	**Purpose Primary**	**Activity Purpose**
R2/0197-3.0	Port Taranaki Limited	Discharge (Coastal)	Transport	Port Activity		Replace

Limited Notified authorisations issued by the Taranaki Regional Council between 04 Jul 2024 and 09 Aug 2024

R2/0197-3.0

Port Taranaki Limited

Commencement Date: 16 Aug 2024

Expiry Date: 01 Jun 2050

Review Dates: March Annually

Activity Class: Discretionary

Location: Port Taranaki, Breakwater Road, New Plymouth

Application Purpose: Replace

To discharge treated stormwater from the Port Taranaki facility and environs and washdown water from the wharves, equipment and surrounding areas, into the Tasman Sea

Rohe:

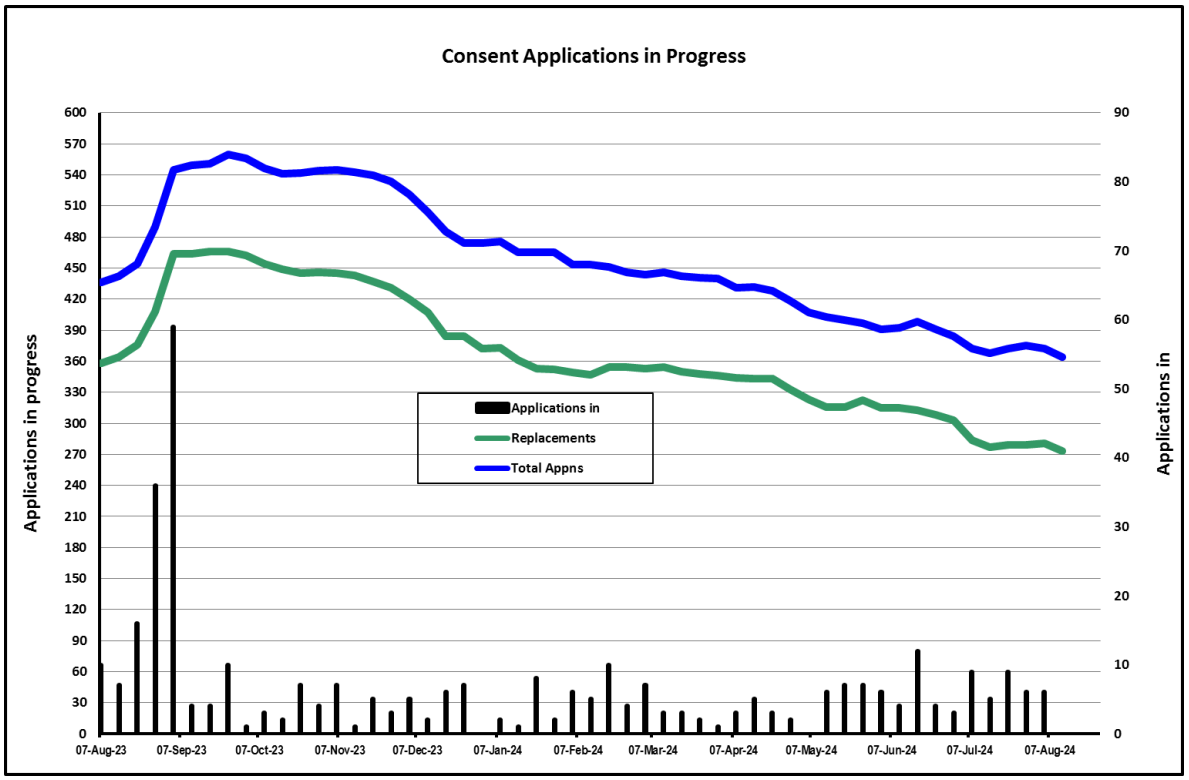
Te Atiawa (Statutory Acknowledgement)

Engagement or consultation:

Ngāti Te Whiti Hapū	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Consulted by applicant
Te Kotahitanga o Te Atiawa Trust	Submitter - withdrawn

Consent Processing Information

1) Applications in progress



2) Month Ending – Number of applications in progress

	July		Aug		Sept		Oct		Nov		Dec		Jan		Feb		Mar		Apr		May		Jun	
	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R	Total	R
2024/2025	372	281																						
2023/2024	431	351	545	464	556	462	542	445	544	446	474	372	465	352	444	353	440	346	418	333	391	315	378	303
2022/2023	540	479	520	453	490	430	499	435	482	417	459	391	431	342	448	371	448	364	444	365	452	379	462	383

R = Replacements

3) Potential Hearings

Nil

4) Consents Issued (running totals)

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June
2024-2025	48											
2023-2024	39	49	57	75	114	178	212	240	250	282	331	361
2022-2023	7	53	82	86	139	171	211	228	249	261	283	307

5) Breakdown of consents processed

	New	Replace	Change	Review	Totals
2024-2025 - to end July	7	40	1	0	**48**
2023-2024 Total	97	249	13	2	**361**
2022-2023 Total	65	227	10	5	**307**

6) Types of consents issued - year to date comparison

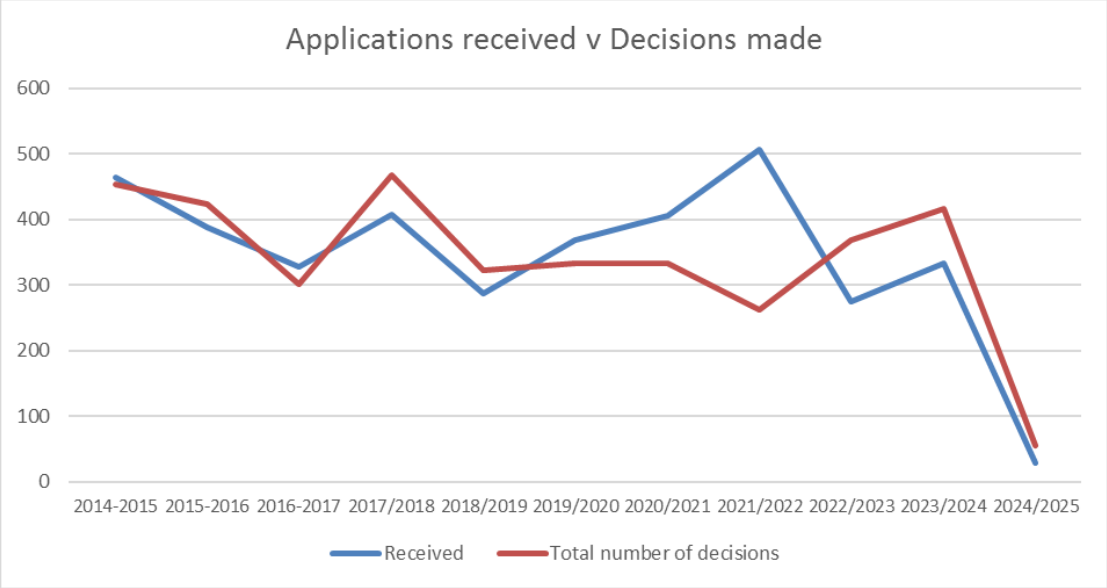
	Agricultural	Central/Local Government	Energy	Forestry	Other	Total publically notified		Agricultural	Central/Local Government	Energy	Forestry	Other	Total Limited Notified		Agricultural	Central/Local Government	Energy	Forestry	Other	Total Non-notified		Grand Total
	Publically Notified					%		Limited					%		Non Notified					%		
July 2022 to June 2023	0	0	0	0	0	**0.0%**	**0**	1	1	0	0	0	**0.7%**	**2**	222	16	26	0	41	**99.3%**	**305**	**307**
July 2023 to June 2024	**0**	**0**	**0**	**0**	**0**	**0.0%**	**0**	**1**	**0**	**0**	**0**	**5**	**1.7%**	**6**	**211**	**45**	**66**	**4**	**29**	**98.3%**	**355**	**361**
July 2024	**0**	**0**	**0**	**0**	**0**	**0.0%**	**0**	**0**	**0**	**0**	**0**	**1**	**2.1%**	**1**	**28**	**4**	**9**	**0**	**6**	**97.9%**	**47**	**48**

7) Length of time to issue decisions on applications

	No of consent decisions	Number of days decision made in			
		less than 40	40-90	90-200	200+
July	56	18	4	15	19
August					
September					
October					
November					
December					
January					
February					
March					
April					
May					
June					
	56	**18**	**4**	**15**	**19**

Note: Decisions include issuing, withdrawing, returning or DPA applications

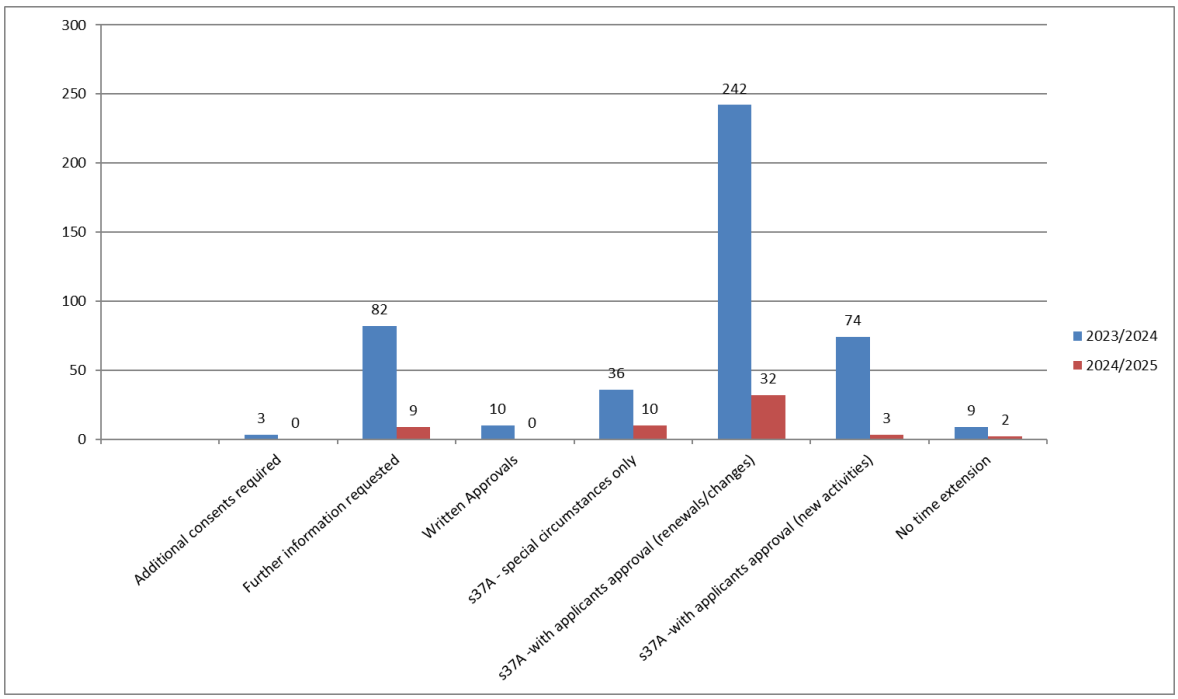
8) Applications received v Decisions made



9) Involvement with third parties for applications processed year to date

	Consultation/ Involved (number of parties)	Number of Affected Party Approvals (written)	Totals
Councils	0	0	0
DOC	1	0	1
Environmental/Recreational Groups	0	0	0
Fish & Game	1	0	1
Individuals/Neighbours/Landowners	0	1	1
Network Utilities	0	0	0
Non Govt Organisations	0	0	0
Other Govt Departments	0	0	0
Iwi/hapu	94	0	94
Totals -2024/2025	96	1	97

10) Application processing time extensions used 2022/2023 versus 2023/2024



11) Consent type process

	Last 10 year average 2015 - 2024	July 2023 to June 2024	July 2024 to June 2025
Total consents granted	306	361	48
Publically Notified	9	0	0
Limited-notified	6	6	1
Non-notified	293	355	47
Applications submitted on (in opposition and to be heard)	12	6	1
Application Pre-hearing resolution (%)	6 82%	6 100%	1 100%
Hearings (no. of applications)	1 (6)	0 (0)	0 (0)
Appeals (no. of applications)	1 (6)	0 (0)	0 (0)
Total current consents	4632	4278	4286

12) Applications returned incomplete under Section 88

For the 2024-2025 financial year, 4 applications have been returned incomplete under S88 of the RMA for insufficient information. One application has since been resubmitted and accepted.

13) Deemed Permitted Activities issued

Date Issued	DPA No	Holder	Activity	Plan	Rule
31-Jul-24	R2/11260-1.0	New Plymouth District Council	Excavate	RFWP - Rules	46
31-Jul-24	R2/11263-1.0	New Plymouth District Council	Take Groundwater	RFWP - Rules	48

14) Fast track consents issued by Expert Consenting Panel

Unit record identifier	Consent Holder	Project	Type of resource consent	Consent sub-type	Description of activity	Date Lodged	Decision Date
R2/11272-1.0	Energy Farms Ltd	Ōpunake Solar Farm	Land Use Consent	Earthworks	To remove vegetation and undertake earthworks within or within 10m of a	18 Oct 2023	09 Jul 2024
R2/11273-1.0	Energy Farms Ltd	Ōpunake Solar Farm	Discharge Permit	Land/Water - Earthworks	To discharge stormwater and sediment from earthworks	18 Oct 2023	09 Jul 2024
R2/11214-1.0	Energy Farms Ltd	Ōpunake Solar Farm	Land Use Consent	Structure - Culvert	To install culverts that may not comply with the NES requirements	18 Oct 2023	09 Jul 2024

Date: 3 September 2024

Subject: **Incidents, Compliance Monitoring Non-Compliances and Enforcement Summary – 1 July 2024 to 8 August 2024**

Author: M Churchill, Enforcement and Compliance Coordinator

Approved by: A D McLay, Director - Resource Management

Document: 3299133

Purpose

1. The purpose of this memorandum is to consider and receive the summary of the incidents, compliance monitoring non-compliances and enforcement for the period 1 July 2024 to 8 August 2024.

Executive summary

Incidents

2. There are forty three (43) incidents reported.
3. Nineteen (19) of the incidents were found to be compliant and fifteen (15) were found to be non-compliant. Nine (9) of the incidents reported relate to non-compliances from previous periods (updates). The action taken on the incidents is set out for members' information.

Compliance monitoring non-compliance

4. There are nine (9) compliance-monitoring non-compliances reported. Nine (9) of the compliance monitoring non-compliances reported are updates from previous periods.
5. One (1) of the non-compliances reported are as a result of the annual dairy inspection round.

Recommendations

That Taranaki Regional Council:

a) receives this memorandum Incident, Compliance Monitoring Non-Compliances and Enforcement Summary – 1 July 2024 to 8 August 2024

b) receives the summary of the incidents, compliance monitoring non-compliances and enforcement for the period from 1 July 2024 to 8 August 2024

c) notes the action taken by staff acting under delegated authority

d) adopts the recommendations therein.

Background

6. The annual inspection for farm dairy effluent monitoring programme commences in September each year and usually finishes around March, however follow up inspections and winter milking inspections are also carried out during the rest of the year.
7. We receive and respond to pollution events and public complaints throughout the year. Consent compliance monitoring undertaken can also identify non-compliance. This information is recorded in the IRIS database together with the results of investigations and any follow-up actions. Such incidents and non-compliances are publicly reported through the Consents and Regulatory Committee via the Incidents, Compliance Monitoring Non-compliances and Enforcement Report or the Annual Compliance Monitoring Reports.
8. Attached is the summary of the Incidents, Compliance Monitoring Non-compliances and Enforcement for the period from 1 July 2024 to 8 August 2024.
9. Staff have been delegated to undertake enforcement actions. The enforcement policy and procedures are consistently implemented and reported on.

Disclosure Restrictions

10. The incident register information presentation was reviewed in 2014-2015 to increase reader understanding in this complex area. The first section addresses compliant incidents and can be publicly discussed. The second section provides an update on non-compliant incidents from previous meetings and where an incident has been resolved it can be publicly discussed. The third and fourth sections provide information on non-compliant incidents and non-compliances found during compliance monitoring during the period that are still under investigation and staff are limited in terms of public disclosure of information, while the investigation is ongoing and enforcement responses have not been determined. The incident flow chart and definition of terms provide further operational detail.

Discussion

11. We respond to complaints received generally within four hours. This usually involves a site visit. Responses to complaints and non-compliances with rules in regional plans, resource consents and the Resource Management Act 1991 are recorded in the IRIS database. Where necessary, appropriate advisory or enforcement actions are undertaken. The latter may include issuing an inspection, abatement or infringement notice, or initiating a prosecution. Where an infringement notice or prosecution is possible, details of the information in the Incidents, Compliance Monitoring Non-compliances and Enforcement agenda item and staff comment will be restricted for legal disclosure reasons. Further information will be provided at a later and for prosecutions a detailed report will be provided for information purposes, in the confidential section of the agenda.
12. A summary of Incidents, Compliance Monitoring Non-compliances and Enforcement for the period 1 July 2024 to 8 August 2024 is attached. The 'compliant' incidents are presented first in a table and the 'non-compliant' incidents are presented after in a more detailed summary, followed by the compliance monitoring non-compliances.
13. Generally, incidents in the ‘compliant’ table have a recommendation of ‘no further action’. However, an incident is considered ‘compliant’ until such time as a non-compliance is found. Therefore, occasionally an incident in the ‘compliant’ table will have a recommendation of ‘investigation continuing’, if an ongoing investigation is still underway to confirm compliance.
14. A series of graphs are also attached comparing the number of incidents between 2016/17 and 2021/22, and also showing how the incidents are tracking in 2021/22 in relation to environment type and compliance status. There is a graph showing the non-compliances found during compliance monitoring. There is also a graph showing enforcement action taken to date during 2021/22.

15. The data in the graphs for 2021/22 to date is showing that there are more incidents but less compliance monitoring non-compliances. Although in the first month of this period, there is limited data.

Decision-making considerations

16. Part 6 (Planning, decision-making and accountability) of the *Local Government Act 2002* has been considered and documented in the preparation of this agenda item. The recommendations made in this item comply with the decision-making obligations of the *Act*.

Financial considerations—LTP/Annual Plan

17. This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

18. This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

19. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.

Community considerations

20. This memorandum and the associated recommendations have considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

21. This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

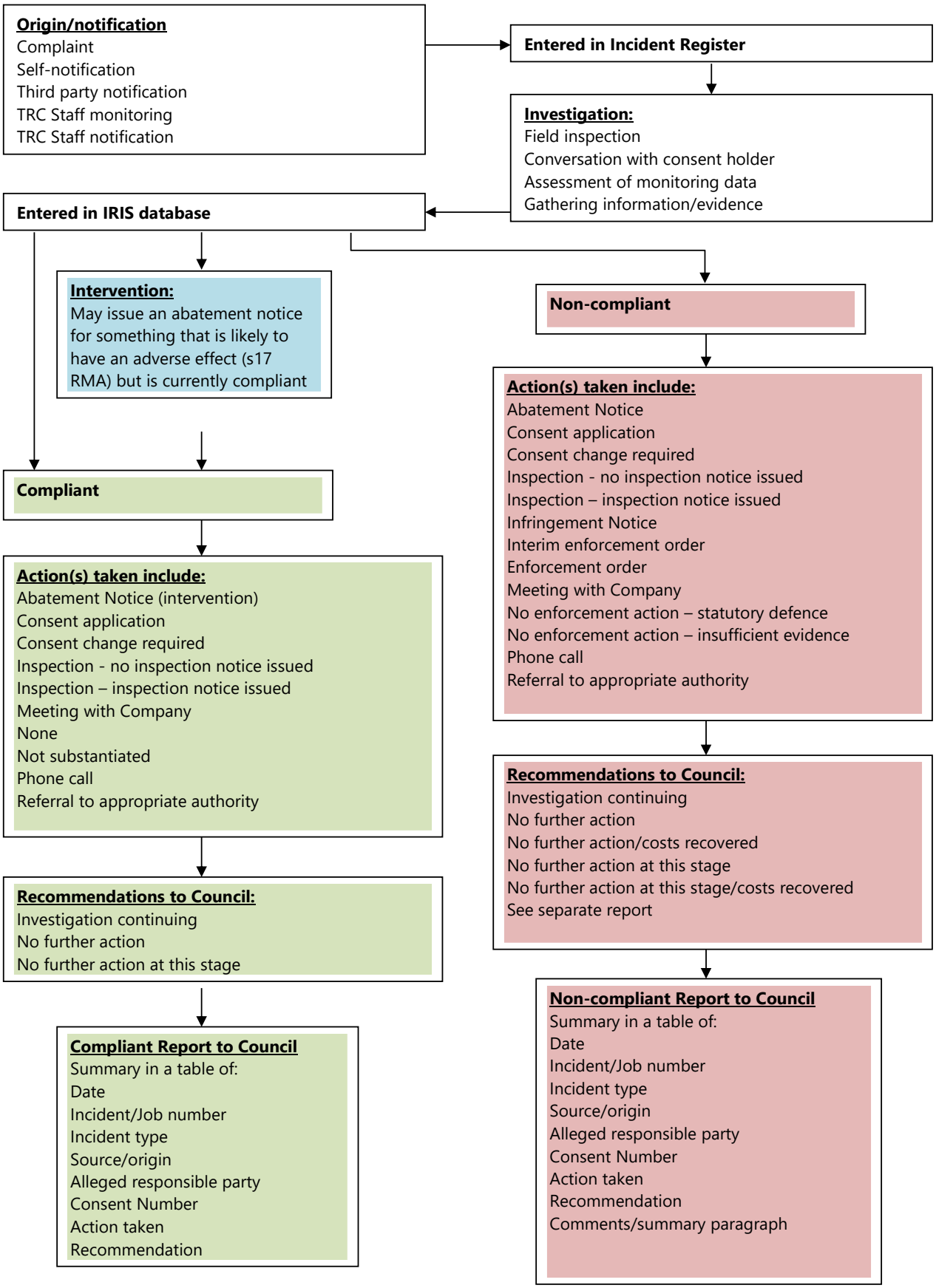
Document 1081324: Incident flowchart and terms explained

Document 3299132: Incident and Enforcement Graphs to 31 August 2024

Document 3299555: Incidents, Compliance Monitoring and Enforcement Summary 1 July 2024 to 8 August 2024

Incident flow chart

Doc # 1081324



Terms explained

Compliance rating

Compliant	After investigation the incident was found to be compliant with environmental standards or other regulations, permitted rules in a regional plan (e.g. RFWP, RAQP, RCP allowed), a resource consent and/or the Resource Management Act 1991.
Non-compliant	After investigation the incident was found to be non-compliant with environmental standards or other regulations, rules in a regional plan, a resource consent and/or the Resource Management Act 1991

Origin/Notification:

Complaint	Notification of incident received from public.
Self notification	Notification of incident received from the responsible party.
Third Party Notification	Notification of incident received from third party such as New Zealand Fire, District Council etc.
TRC Staff monitoring	Notification of incident found during routine compliance monitoring.
TRC Staff notification	Notification of incident found during unrelated monitoring/field work.

Action/s Taken:

14 day Letter	A letter was sent requesting an explanation for the non-compliance and why enforcement action should not be considered. The recipient is given 14 days to reply.
Abatement Notice	A notice was issued requiring something to be undertaken or something to cease to ensure compliance with Rules in the regional plans, resource consent or Resource Management Act 1991. Notice must be complied with or further enforcement action can be considered.
Consent application	A consent application has been received as a result of the investigation.
Consent change required	During the investigation it was found that a consent change was required.
Emergency Works	Emergency works was allowed under section 330 of the RMA. Often a subsequent resource consent is required.
Enforcement Order	An enforcement order has been issued by the Environment Court requiring action to be undertaken or something to cease. Notice must be complied with or further enforcement action can be considered.
Infringement Notice ($xxx.xx)	An infringement notice was issued under Section 338(1)(a) of the Resource Management Act 1991 and Councils delegated authority.
Inspection Notice	An inspection was undertaken and a notice of advice/instruction was issued to landowner/alleged offender.
Inspection/no notice	An inspection was undertaken, however no inspection notice was issued as

issued	there was no alleged offender/landowner to issue one to (natural event, unsourced etc).
Interim Enforcement Order	An interim enforcement order has been issued by the Environment Court requiring action to be undertaken or something to cease. Notice must be complied with or further enforcement action can be considered.
Meeting with Company	A meeting was held with the Company to discuss the incident and ways to resolve any issues.
None	No action was required.
Not Substantiated	The incident could not be substantiated (i.e. it is not likely/possible/probable that the alleged incident could have taken place).
Phone call	A phone call was made to the alleged offender/authority.
Prosecution	A prosecution is being initiated for this incident.
Referral to Appropriate Authority	The incident was referred to the appropriate authority (District Council, Department of Conservation etc).

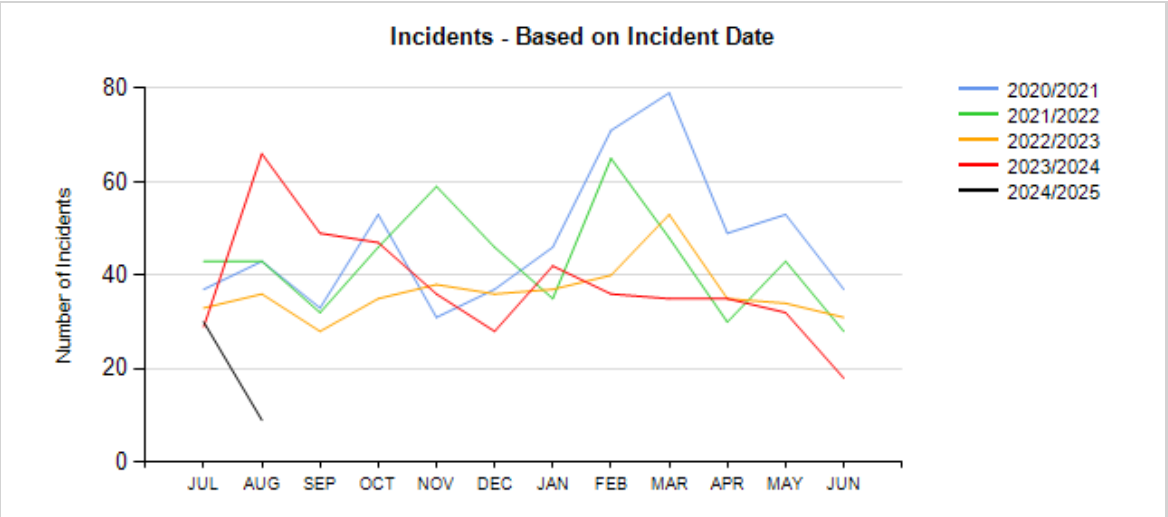
Recommendations to Council

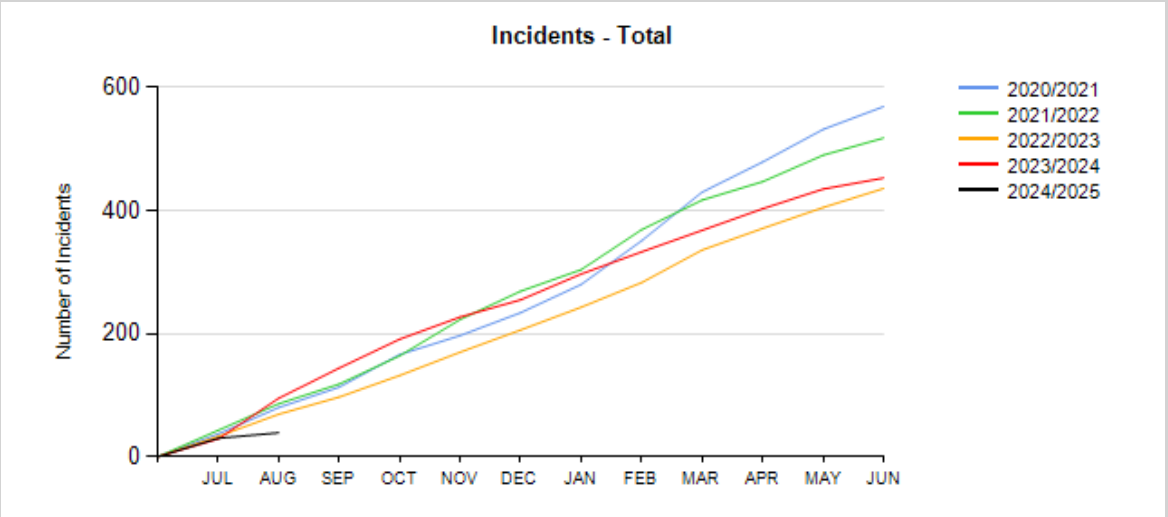
Investigation continuing	Outcome has not been finalised. Investigation is continuing on this incident, information/evidence still being gathered. Further action, including enforcement are being considered and therefore legally all information cannot be reported on this incident at this stage. These incidents will continue to be reported as updates in the following agendas.
No Further Action	Investigation is completed, any required enforcement action has been undertaken and no further action is required.
No Further Action At This Stage	Investigation is completed, any required enforcement action has been undertaken and further action may be required at a later date.
No Further Action/Costs Recovered	Investigation is completed, any required enforcement action has been undertaken and no further action is required. Costs will be recovered from the alleged offender for the investigation.
No further Action at this Stage/Costs Recovered	Investigation is completed, any required enforcement action has been undertaken and further action may be required at a later date (reinspection of Abatement Notice etc). Costs will be recovered from the alleged offender for the investigation.

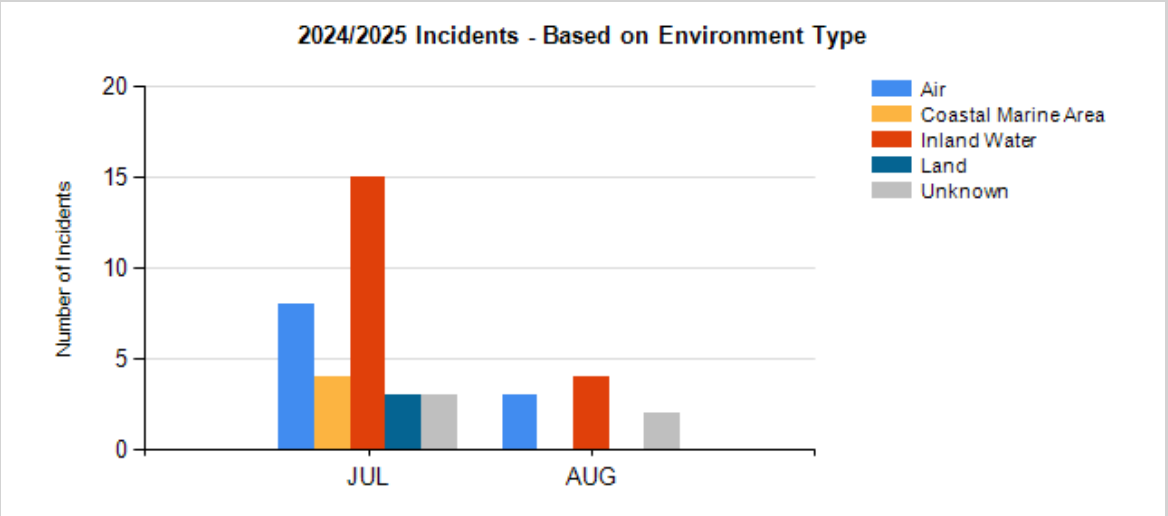
Defences under Sections 340 and 341 of the Resource Management Act 1991

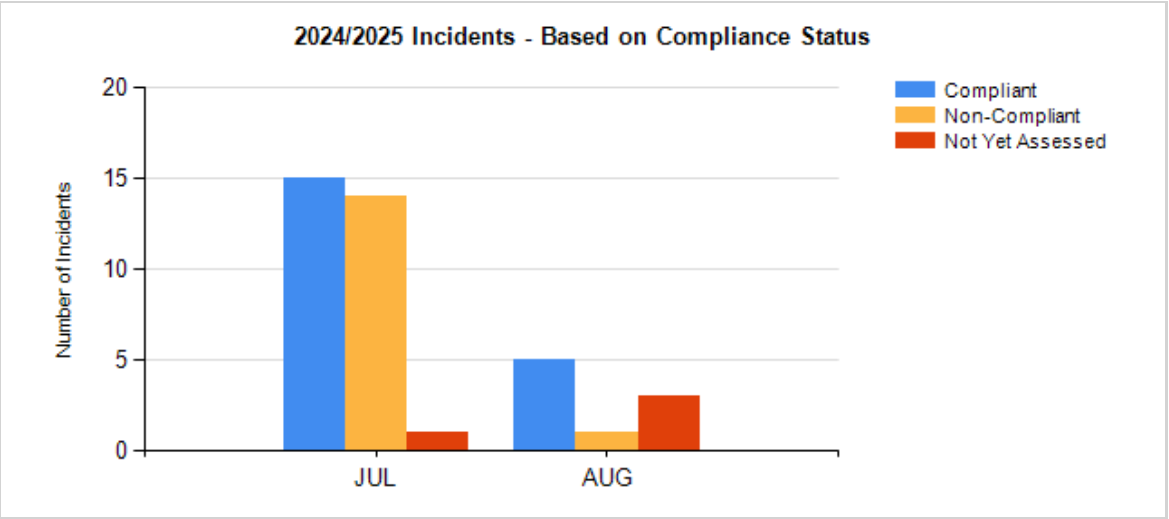
Sometimes no enforcement action is undertaken against an alleged offender for a non-compliant incident as they have a defence under Section 340 of the Resource Management Act 1991 including reasons such as:

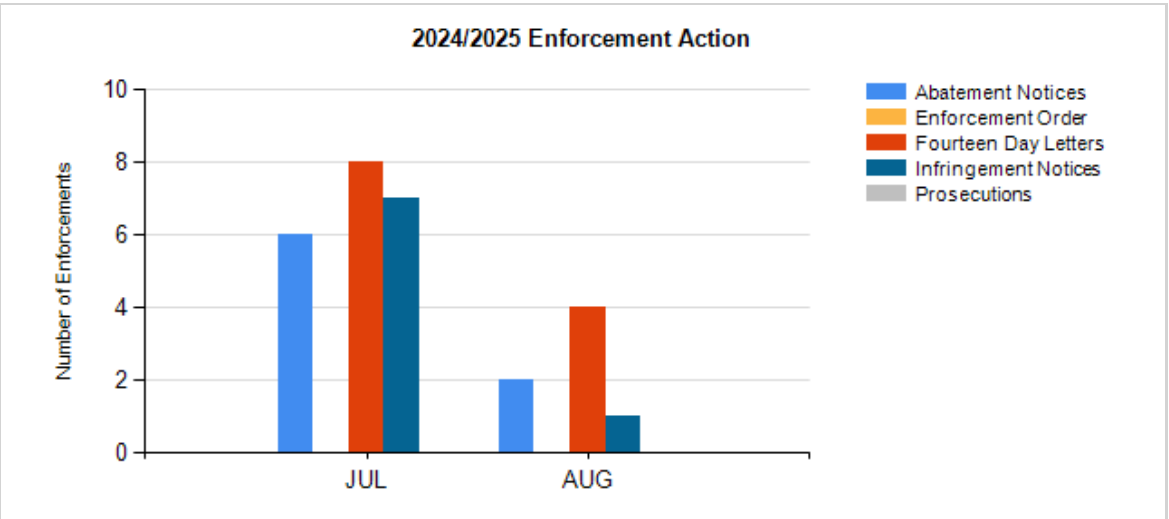
- the defendant can prove that he or she did not know, and could not reasonably be expected to have known that the offence was to be or was being committed, or
- that he or she took all reasonable steps to prevent the commission of the offence, or
- the action or event could not reasonably have been foreseen or been provided against by the defendant.

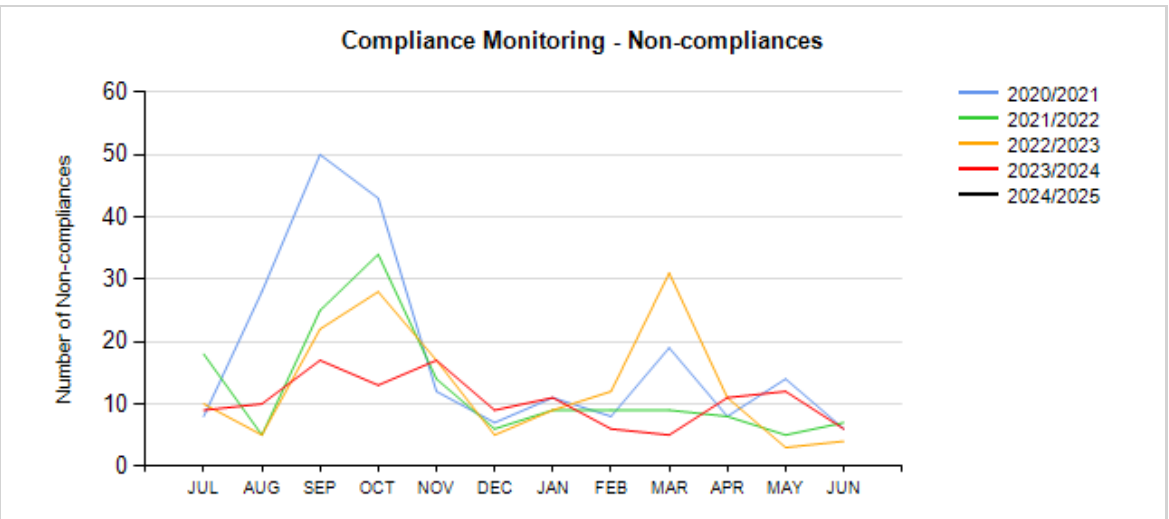

Incidents - Based on Incident Date
Number of Incidents
0
20
40
60
80
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
2020/2021
2021/2022
2022/2023
2023/2024
2024/2025

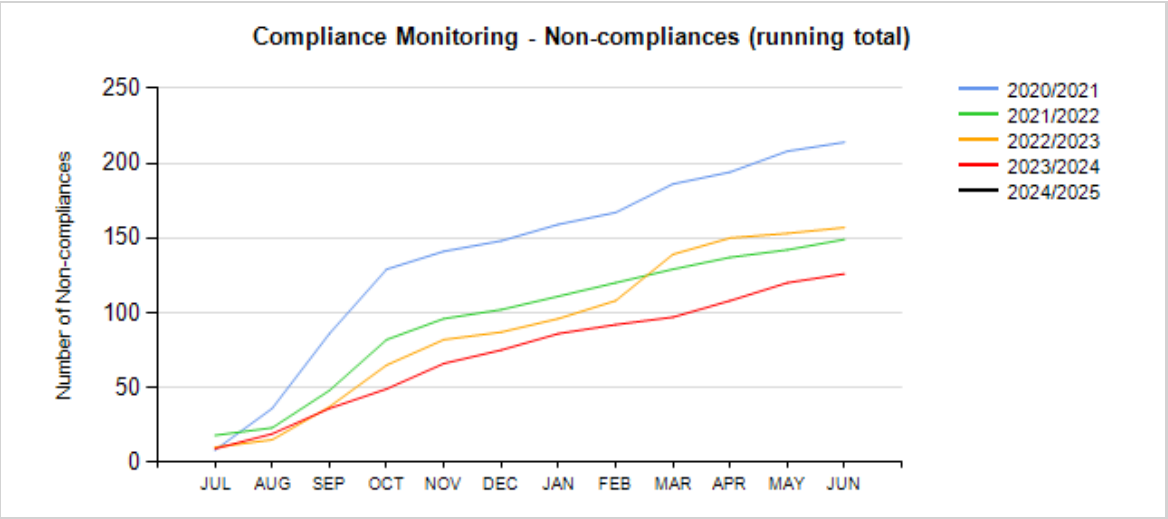

Incidents - Total
Number of Incidents
0
200
400
600
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
2020/2021
2021/2022
2022/2023
2023/2024
2024/2025


2024/2025 Incidents - Based on Environment Type
Number of Incidents
0
5
10
15
20
JUL
AUG
Air
Coastal Marine Area
Inland Water
Land
Unknown


2024/2025 Incidents - Based on Compliance Status
Number of Incidents
20
15
10
5
0
JUL
AUG
Compliant
Non-Compliant
Not Yet Assessed


2024/2025 Enforcement Action
Number of Enforcements
10
8
6
4
2
0
JUL
AUG
Abatement Notices
Enforcement Order
Fourteen Day Letters
Infringement Notices
Prosecutions


Compliance Monitoring - Non-compliances
Number of Non-compliances
60
50
40
30
20
10
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
2020/2021
2021/2022
2022/2023
2023/2024
2024/2025


Compliance Monitoring - Non-compliances (running total)
Number of Non-compliances
250
200
150
100
50
0
JUL
AUG
SEP
OCT
NOV
DEC
JAN
FEB
MAR
APR
MAY
JUN
2020/2021
2021/2022
2022/2023
2023/2024
2024/2025

Compliant Incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Compliance Status	Recommendation
1 Jul 2024	330125-001 IN/50382	Alleged washwater discharge - Curry Lane, New Plymouth.	Complaint	Chopstix Restaurant & Bar New Plymouth		Not Applicable/Natural Event	No Further Action
2 Jul 2024	330125-004 IN/50418	Alleged green stream - Komene Road, Okato.	Complaint	Unsourced		RFWP Allowed	No Further Action
3 Jul 2024	330125-002 IN/50392	Alleged washwater discharge - Maire Street, Inglewood.	Complaint	Charlie Herd*Manor Properties Limited		RFWP Allowed	No Further Action
3 Jul 2024	330125-005 IN/50419	Alleged rubbish dump - Egmont Road, Egmont Village.	Complaint	Unsourced		RFWP Allowed	No Further Action
7 Jul 2024	330125-008 IN/50427	Alleged burning - Manutahi Road, Lepperton.	Complaint	David Johns		RAQP Allowed	No Further Action
8 Jul 2024	330124-009 IN/50462	Alleged burning - Egmont Street, Hawera.	Complaint	Paul Laing		RAQP Allowed	No Further Action
10 Jul 2024	330125-010 IN/50451	Alleged wastewater discharge - Dillon Drive, Bell Block.	Self-Notification	New Plymouth District Council	R2/0882-4.1*R2/10406-1.0	Consent Compliance	No Further Action
12 Jul 2024	330125-029 IN/50588	Alleged quarry operation - Upper Puniho Road, Okato.	Complaint	Stephen Gibson		RFWP Allowed	No Further Action
14 Jul 2024	330125-014 IN/50503	Alleged odour - Paraite Road, Bell Block.	Complaint	Cloverview Limited Partnership*Shane McDonald		RAQP Allowed	No Further Action

Compliant Incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Compliance Status	Recommendation
15 Jul 2024	330125-012 IN/50466	Alleged discoloured stream, Patea River - Celia Street, Stratford.	Complaint	Unsourced		Not Applicable/Natural Event	No Further Action
18 Jul 2024	330125-016 IN/50493	Alleged odour - Mokau Road, Uruti.	Complaint	Remediation (NZ) Limited	R2/5839-2	Consent Compliance	No Further Action
19 Jul 2024	330125-017 IN/50494	Alleged discoloured stream - Pukearuhe Road, Urenui.	Complaint	Unsourced		Not Applicable/Natural Event	No Further Action
19 Jul 2024	330125-020 IN/50512	Alleged earthworks within a stream - George Street, Eltham.	Third Party Notification	John Menzies Burling & Yvonne Annette Burling		RFWP Allowed	No Further Action
22 Jul 2024	330125-018 IN/50506	Alleged discoloured stream - Rewa Street, Inglewood.	Complaint	Unsourced		Not Applicable/Natural Event	No Further Action
24 Jul 2024	330125-021 IN/50527	Alleged burst main water pipe - Centennial Drive, New Plymouth.	Complaint	New Plymouth District Council		RFWP Allowed	No Further Action
3 Aug 2024	330125-030 IN/50574	Alleged burning - Cornwall Street, Patea.	Complaint	Unsourced		Not Applicable/Natural Event	No Further Action
4 Aug 2024	330125-031 IN/50575	Alleged odour - Mountain Road, Lepperton.	Complaint	Unsourced		RAQP Allowed	No Further Action
5 Aug 2024	330125-032 IN/50581	Alleged burning - Papawhero Drive, Bell Block.	Complaint	Tony Smith		RAQP Allowed	No Further Action

Compliant Incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Compliance Status	Recommendation
8 Aug 2024	330125-034 IN/50600	Alleged discoloured stream - Rangitake Drive, New Plymouth.	Complaint	Unsourced		Not Applicable/Natural Event	No Further Action

Updates of Non-Compliant incidents from previous agendas

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
26 Mar 2024 Update	330124-418 IN/49743	Odour - Palmer Road, Kapuni.	Self-Notification	Ballance Agri-Nutrients (Kapuni) Limited (9706)	R2/4046-3	EAC-25855 - Explanation Requested - Letter	No Further Action At This Stage/Costs Recovered

Comments: Self-notification was received regarding an ammonia discharge to air at the Ballance Argi-Nutrients facility at Palmer Road, Kapuni. An investigation found that during a pressure test, a valve had failed to automatically reclose as expected. This resulted in a sudden flow of ammonia-rich reactor fluid into the facility's main vent system. The ammonia continued to vent off for some time after the emergency was abated, resulting in high concentrations of ammonia at the site boundary. It was found after reviewing and accepting the information provided by Ballance Kapuni (in relation to the 14 day letter response) that the unauthorised ammonia discharge was a result of mechanical failure. This could not have been reasonably foreseen and actions taken directly after the event adequately mitigated the discharge. No further action.

16 Apr 2024 Update	330124-391 IN/49869	Burning - Frankley Road, New Plymouth.	Complaint	John Douglas McCullough (36083)		EAC-25865 - Infringement Notice ($300)	No Further Action

Comments: A complaint was received regarding smoke being discharged from a fire on a horticultural land block at Frankley Road, New Plymouth. An investigation found a large vegetation fire had been lit on the property resulting in thick black smoke discharging across a residential area of New Plymouth. The responsible party was spoken to and advised of the adverse effects on the community as a result of his activities. An infringement notice was subsequently issued. No further action.

Updates of Non-Compliant incidents from previous agendas

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
13 May 2024 Update	330124-423 IN/50070	Earthworks with and within 10 metres of a wetland - Mokau Road, Uruti.	Complaint	Eilish Wilson (76320)*Stephen Wilson (76327)		EAC-25784 - Abatement Notice*EAC-25787 - Explanation Requested - Letter*EAC-25788 - Abatement Notice*EAC-25790 - Explanation Requested - Letter*EAC-25870 - Infringement Notice ($300)	No Further Action

Comments: A complaint was received regarding a digger operating in a wetland at Mokau Road, Urenui. An investigation found a digger had cleaned out debris and vegetation from land drainage channels on the property. The Council wetland ecologist assessed the area and determined that a natural inland wetland was present on the property and some of the earthworks were within and within 10 metres of a natural inland wetland in contravention of Regulations within the Resource Management (National Environmental Standards for Freshwater) Regulations 2020. Abatement notices were issued to the responsible parties requiring all earthworks to cease. Letters requesting an explanation have been sent and explanations were received and accepted. No further action.

15 May 2024 Update	330124-424 IN/50092	Earthworks within 10 metres of a wetland - Manawapou Road, Manutahi.	Complaint	Alastair Geary (16166)		EAC-25791 - Abatement Notice*EAC-25819 - Explanation Requested - Letter*EAC-25876 - Infringement Notice ($300)	No Further Action

Comments: A complaint was received regarding earthworks being undertaken in a wetland at Manawapou Road, Manutahi. An investigation found earthworks had been undertaken with vegetation being cleared within a 10 metre setback from a natural inland wetland in contravention of Regulations within the Resource Management (National Environmental Standards for Freshwater) Regulations 2020. An abatement notice was sent, and a letter of explanation was received and accepted. Further works were undertaken to ensure sufficient silt and sediment controls were in place. A follow-up inspection confirmed that the abatement notice was being complied with. An infringement notice was issued. No further action.

Updates of Non-Compliant incidents from previous agendas

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
17 May 2024 Update	330124-430 IN/50171	Dumping complaint - Frankley Road, New Plymouth.	Complaint	Department of Conservation - Crown (9912)			Investigation Continuing

Comments: A complaint was received regarding a large rubbish hole having been established at the Department of Conservation (DOC) managed Ian Allan Reserve at Frankley Road, New Plymouth. An inspection found a large offal trench had been dug at the site. The trench was used to dispose of pest fish carcasses (koi carp), sludge/mud and aquatic pest plants (water hyacinth, water lettuce) from a residential property within the region. The trench was located approximately 300 metres from the nearest surface water body and was immediately backfilled upon completion of the disposal operation. The operation to remove and dispose of the pest fish and plants was overseen by the Department of Conservation and the Ministry for Primary Industries. Investigation is still continuing.

27 May 2024 Update	330124-440 IN/50162	Wastewater discharge - Lawry Street, New Plymouth.	Complaint	Susan Johnston (76354)		EAC-25818 - Explanation Requested - Letter*EAC-25852 - Abatement Notice	Investigation Continuing

Comments: Third party notification was received regarding the discharge of wastewater from a residential property at Lawry Street, New Plymouth. An inspection found that a small volume of wastewater was discharging at the front of the property as a result of damaged pipe work. New Plymouth District Council contractors undertook work to bund the area to prevent any unauthorised discharges to surface water. An abatement notice was issued to the responsible party to undertake works to ensure compliance with the rules in the Regional Freshwater Plan for Taranaki. A re-inspection was undertaken in July 2024. Matter referred to New Plymouth District Council to seek resolution.

Updates of Non-Compliant incidents from previous agendas

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
6 Jun 2024 Update	330124-451 IN/50270	Earthworks - Surrey Road, Tariki.	TRC Staff Notification	Colin Boyd (3013)*Mile Square Farms Limited (3884)	R2/9906-1.0	EAC-25839 - Abatement Notice*EAC-25841 - Abatement Notice*EAC-25842 - Abatement Notice*EAC-25843 - Abatement Notice	Investigation Continuing

Comments: During unrelated compliance monitoring, it was found that earthworks were being undertaken in contravention of rules in the Regional Freshwater Plan for Taranaki at Surrey Road, Tariki. An inspection found that earthworks had been undertaken adjacent to the Mangatengehu Stream without appropriate silt and sediment controls in place. The inspection also found that a small section of the stream had been dewatered and infilled in contravention of resource consent conditions. An abatement notice was issued requiring works within the stream to cease and for works to be undertaken to install erosion and sediment controls at the site. An inspection was undertaken and it was found the abatement notices are being complied with. Taranaki Regional Council are currently drafting plans to remediate the area. Once a plan is agreed a new abatement notice will be issued to remediate the old stream bed and comply with resource consent conditions. Investigation continuing.

11 Jun 2024 Update	330124-450 IN/50266	Unauthorised discharge to surface water - Collingwood Street, Eltham.	Self-Notification	Fonterra Co-Operative Group Limited (28692)	R2/1969-3	EAC-25844 - Explanation Requested - Letter*EAC-25880 - Infringement Notice ($750)	No Further Action

Comments: Self-notification was received regarding an unauthorised discharge to surface water from a cheese processing facility at Collingwood Street, Eltham. An inspection found that approximately 50-100 litres of sulphuric acid had discharged into the Mangawharawhara Stream from the facilities stormwater network in contravention of resource consent conditions. Absorbent pads were utilised to recover the spilt acid from the stormwater network and a bund was placed within the stream to prevent the acid from discharging further downstream. Sucker trucks were utilised to recover the spilt acid from the receiving environment. The discharge resulted in the sudden drop of pH within the receiving environment and as a result some eels were observed to have died. The stream was monitored for a number of days following the spill and no further eel deaths were observed following the initial discovery. A meeting has been held with representatives of the company, members of the Ngaruahine, Ngati Ruanui and the Taranaki Regional Council regarding a plan to mitigate similar incidents in the future. A letter requesting an explanation has been sent and a response received. No further action.

Updates of Non-Compliant incidents from previous agendas

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
23 Jun 2024 Update	330124-461 IN/50347	Wastewater discharge - Rifle Range Road, New Plymouth.	Self-Notification	New Plymouth District Council (9565)	R2/0882-4.1*R2/10406-1.0	EAC-25899 - Explanation Requested - Letter	Investigation Continuing

Comments: Self notification was received regarding the discharge of wastewater from the New Plymouth District Council Wastewater Treatment Plant at Rifle Range Road, New Plymouth. Inspection found that due to a high intensity rainfall event, the inflow of wastewater to the plant (1000 l/s) exceeded the capacity of the plant to process the waste. The wastewater by-pass was activated resulting in chlorinated but untreated wastewater being discharged out of the marine outfall. The by-pass was unable to keep up with the inflows and as a result untreated wastewater overflowed from the facility and discharged into the onsite stormwater system and into an unnamed tributary of the Waiwhakaiho River. The contingency plan was followed and warning signs erected. An inspection of the receiving environment found that the river was in flood and no adverse effects were observed as a result of the discharge. An incident report was provided and further details are being sought in relation to the discharge into the Waiwhakaiho River. Investigation continuing.

Non-compliant incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
26 Mar 2024	330124-368 IN/49650	Failure to comply with an enforcement order - Surrey Road, Inglewood.	TRC Staff Compliance Monitoring	Colin Boyd (3013)		EAC-25745 - Explanation Requested - Letter	See Separate Report
Comments: On 22 July 2022, the alleged offender was convicted in the District Court in New Plymouth on four charges relating to illegal stream works on a dairy farm at Surrey Road, Tariki. On 4 October 2022, Judge Dickey issued her judgement (sentencing decision) for the offending and also issued the offender with an Enforcement Order (CRI-2020-043-000553) requiring him to undertake a number of actions to remediate the area where the works had occurred. These works were required to be completed within one year of the date of issue of the order. Council engaged with the alleged offender during this 12 month period, however no attempt was made to comply with the order. On 26 March 2024, an inspection was undertaken on the subject property to assess the likely and/or actual adverse effects upon the environment as a result of failing to complete the remedial works as required by the Enforcement Order. Further enforcement action is being considered.							
3 Jul 2024	330125-003 IN/50394	Dead cow on beach - East Beach, Waitara.	Complaint	Unsourced (9768)			No Further Action
Comments: A complaint was received regarding a dead cow in the Waitara River at East Beach, Waitara. An investigation located the animal carcass on the beach. The owner could not be identified. A contractor was contacted to remove and dispose of the carcass. No further action.							

Non-compliant incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
6 Jul 2024	330125-006 IN/50425	Burning - Thomason Road, Egmont Village.	Complaint	James Mannex (74060)		EAC-25869 - Explanation Requested - Letter*EAC-25871 - Abatement Notice*EAC-25881 - Infringement Notice ($300)	No Further Action

Comments: A complaint was received regarding black smoke discharging from a rural property at Thomason Road, Egmont Village. An investigation found a fire had been lit at the lifestyle property with the burn pile smoldering during the inspection. Smoke from the activity was observed to be rising before leaving the boundary, with no offensive odour off-site. An inspection of the burn pile found a number of unauthorised items being burnt, including but not limited to, whiteware, a couch, various metals, plastics and other combustible materials. The decision was made to leave the pile burning as disturbing it would create more smoke and possible odour. An abatement notice was issued to ensure no further unauthorised burning occurs at the property. A letter requesting an explanation was sent, and an explanation received. An infringement notice was issued. No further action.

6 Jul 2024	330125-007 IN/50426	Dead stock - East Beach, Waitara.	Complaint	Unsourced (9768)			No Further Action

Comments: A complaint was received regarding a dead cow and sheep at East Beach, Waitara. An inspection located the carcasses, however the owner was unable to be identified. A New Plymouth District Council contractor removed and disposed of the carcasses in an appropriate manner. No further action.

10 Jul 2024	330125-011 IN/50463	Dead calf in stream - Paora Road, Okato.	Complaint	Unsourced (9768)			No Further Action

Comments: A complaint was received regarding a dead calf in the Matanehunehu Stream at Paora Road, Okato. An inspection located the animal carcass which was removed and disposed of by the officer at the time of the inspection. No further action.

Non-compliant incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
18 Jul 2024	330125-013 IN/50490	Stormwater discharge - Gill Street, New Plymouth.	Third Party Notification	Max Pennington's AutoCity (76487)			No Further Action
Comments: A complaint was received regarding hydrocarbons discharging into the New Plymouth District Council stormwater system from a vehicle service center on Gill Street, New Plymouth. An investigation found there was a significant delay from incident to notification and any signs of hydrocarbon discharges had been washed away with overnight rain. There was insufficient evidence to determine the nature, quantity or source of any hydrocarbon discharge, however the opportunity was taken to inform the nearby business of the spill and review their spill preparedness. No further action.							
18 Jul 2024	330125-015 IN/50509	Discoloured stream - Mangati Road, Bell Block.	Complaint	Unsourced (9768)			No Further Action
Comments: A complaint was received regarding the Mangati Stream being discoloured at Mangati Road, Bell Block. An inspection confirmed the discolouration of the stream which was beginning to clear during the inspection. An inspection of the wider catchment failed to locate the source of the contamination. The responsible party could not be identified. No further action.							
22 Jul 2024	330125-019 IN/50510	Dead cow in stream - Parihaka Road, Pungarehu.	Complaint	Margaret Radford (2384)			No Further Action
Comments: A complaint was received regarding a dead cow in the Otahi Stream at Lower Parihaka Road, Pungarehu. An inspection located the carcass. The owner of the animal was identified and advised of the discovery. The carcass was removed immediately by the owner and disposed of in an appropriate manner. No further action.							

Non-compliant incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
24 Jul 2024	330125-022 IN/50528	Green waste dumped in stream - Dieffenbach Street, Opunake.	Complaint	Unsourced (9768)			No Further Action
Comments: A complaint was received regarding green waste being dumped in the Hihiwera Stream at Dieffenbach Street, Opunake. An investigation found that a small amount of green waste had been deposited in the stream. The green waste appeared to be weeds that had been pulled from a garden. There was no sign of any other green waste dumped upstream or downstream. A neighboring property was spoken to about the appropriate manner in which green waste should be disposed. The responsible party could not be identified. No further action.							
25 Jul 2024	330125-023 IN/50536	Burning - Corbett Road, Bell Block.	Complaint	Whitaker Civil Engineering Limited (14442)			No Further Action
Comments: A complaint was received regarding burning at an industrial yard at Corbett Road, Bell Block. An investigation found burning of untreated timber and paper had occurred within a concrete trough on site and there were remnants of cold ashes. The responsible party acknowledged the error, and advised it would not happen again. A warning was given for burning on an industrial site and advice and education provided. No further action.							
26 Jul 2024	330125-024 IN/50541	Fat trap discharge - Gill Street, New Plymouth.	Complaint	Devon Street Property Limited (76503)*Paul Bright (76504)			No Further Action
Comments: A complaint was received regarding a drain overflowing at Gill Street, New Plymouth. An investigation found that a fat trap was full and had started overflowing onto concrete. The investigation found that the fat trap had accidently missed the last clean out by mistake. The director of the company was contacted who immediately arranged for a contractor to clear the blockage. The fat trap was cleaned out and the area sanitised by the contractor at the time of the inspection. Further investigation confirmed that no contaminants had entered the stormwater system. No further action.							

Non-compliant incidents for the period 01 Jul 2024 to 08 Aug 2024

Incident Date	Job Number IRIS ID	Incident Type	Source	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
26 Jul 2024	330125-025 IN/50545	Dead cow - Urenui Beach, Urenui.	Complaint	Unsourced (9768)			No Further Action
Comments: A complaint was received regarding a dead cow at Urenui beach, Urenui. An investigation found there was no identification tag attached to the animal and the owner could not be identified. The animal was buried on the beach by a local contractor. No further action.							
28 Jul 2024	330125-026 IN/50552	Burning - Collins Street, Hawera.	Complaint	Sherkera Rongonui (76506)			No Further Action
Comments: A complaint was received regarding smoke being discharged from a fire at a residential property at Collins Street, Hawera. An investigation found that a fire had been lit within a defined urban area in contravention of rules in the Regional Air Quality Plan for Taranaki. The inspection determined that a small fire had been lit by children at the property. The responsible party was spoken to and advised of the rules regarding burning within a defined urban area. No further action.							
30 Jul 2024	330125-027 IN/50551	Dead cow in stream - Davis Road, Inglewood.	Complaint	Wayne Bruce & Christine Louise Foreman (52343)			No Further Action
Comments: A complaint was received regarding a dead cow in the Waiongana Stream at Davis Road, Inglewood. An inspection located the carcass. The owner of the animal was identified and advised of the discovery. The carcass was removed immediately by the owner and disposed of in an appropriate manner. No further action.							
31 Jul 2024	330125-028 IN/50558	Dead calves on beach - Ohawe Beach, Ohawe.	Complaint	Unsourced (9768)			No Further Action
Comments: A complaint was received regarding three dead calves at Ohawe Beach, Ohawe. An inspection located the carcasses at the mouth of the Waingongoro River. The responsible party could not be identified and the carcasses were removed and disposed of by the officer at the time of the inspection. No further action.							

Updates of Compliance Monitoring – Non-compliances from previous agendas

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
16 May 2024 Update	332124-131 ENF-24461	Compliance Monitoring Insp.	Significant non-compliance	NZL Forestry Group Limited (72030)	PA/20476-01	EAC-25905 - Infringement Notice ($300)	No Further Action At This Stage/Costs Recovered

Comments: During routine compliance monitoring it was found that the provisions of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2017 were not being complied with at a forest harvesting operation at Waikare Road, Waverley. Inspection found the site, which had not been operating since 7 November 2023, had not provided the required notifications to this Council. Further inspection revealed forestry slash had been deposited within an unnamed tributary at the site. The material was immediately removed from the tributary and the site is now compliant with the regulations. A post-harvest inspection will be conducted in the next 3-4 months to confirm stabilisation is being achieved at the site. An infringement notice was issued. No further action.

16 May 2024 Update	332124-132 ENF-24462	Compliance Monitoring Insp.	Non-compliance	Tree Awareness Management Limited (30257)	PA/20573-01		No Further Action At This Stage/Costs Recovered

Comments: During routine compliance monitoring it was found that the provisions of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2017, were not being complied with at a forest harvesting operation at Baker Road, Patea. Inspection found that slash had been deposited within an unnamed tributary at the site. The catchment is small and the tributary can be readily accessed by machine to remove the slash. A meeting was held onsite with the responsible party and the explanation provided was accepted. Works were undertaken to remove the slash from the stream. Photos were received of the remediation of the non-compliance showing that the slash has been removed and deposited outside of the 5% annual exceedance probability in relation to flood zones in compliance with the regulations. No further action.

Updates of Compliance Monitoring – Non-compliances from previous agendas

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
20 May 2024 Update	332124-136 ENF-24473	Compliance Monitoring Insp.	Non-compliance	Jones Quarry Limited (30989)	R2/5124-2.1	EAC-25814 - Abatement Notice	Investigation Continuing
Comments: During routine compliance monitoring it was found that resource consent conditions were not being complied with at a quarrying operation at Mokau Road, Uruti. Investigation found that sediment laden stormwater (390 gm/m3) was being discharged in contravention of resource consent conditions (100 gm/m3). An abatement notice was issued requiring works to be undertaken to ensure compliance with resource consent conditions. A re-inspection was undertaken 15 July 2024 and although some works had been undertaken at the site, further works were required before the abatement notice is deemed to be complied with. A follow-up inspection will be undertaken after 30 September 2024. Investigation continuing.							
29 May 2024 Update	332124-146 ENF-24506	Chemical Sampling Survey	Significant non-compliance	Ravensdown Limited (52633)	R2/10513-1.1	EAC-25860 - Explanation Requested - Letter*EAC-25859 - Abatement Notice	Investigation Continuing
Comments: During routine compliance monitoring it was found that resource consent conditions were not being complied with at a fertiliser storage and distribution facility at Smart Road, New Plymouth. The concentration of ammoniacal nitrogen (50 g/m3) within the stormwater was in contravention of resource consent conditions (5 g/m3). A site meeting was held with the responsible party where is was found that errors in the self-monitoring had resulted in the elevated contaminants within the stormwater discharge not being detected by the company. An abatement notice was issued requiring works to be undertaken to ensure compliance with resource consent conditions. A letter requesting explanation was sent and an explanation received and accepted. A detailed action plan has been sent in response to the abatement notice and measures have been put in place to remedy the issues. Re-inspection 12 August 2024. Investigation continuing.							
10 Jun 2024 Update	332124-149 ENF-24507	Compliance Monitoring Insp.	Non-compliance	Civil Holdings Limited (75295)	R2/1113-5.1	EAC-25872 - Abatement Notice	Investigation Continuing
Comments: During routine compliance monitoring, it was found that resource consent conditions were not being complied with at a quarrying operation at Everett Road, Inglewood. Investigation found that the flow meters on site were not operating as required by resource consent conditions. An extension was granted on the abatement notice to allow for more favourable weather conditions in order for the works to be completed. Re-inspection November 2024. Investigation continuing.							

Updates of Compliance Monitoring – Non-compliances from previous agendas

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
12 Jun 2024 Update	332124-144 ENF-24503	Compliance Monitoring Insp.	Significant non-compliance	R & S Dreaver Shelter Trimmers Limited (17542)*Richard Dreaver (37034)	PA/20506-01	EAC-25858 - Abatement Notice*EAC-25856 - Abatement Notice	Investigation Continuing

Comments: During routine compliance monitoring it was found that the provisions of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2017 were not being complied with at a forest harvesting operation at Puniwhakau Road, Puniwhakau. Inspection found that insufficient sediment controls and poor stormwater management practices had been undertaken at the site resulting in the discharge of silt and sediment into an unnamed tributary of the Puniwhakau Stream. An abatement notice was issued. A follow-up inspection was conducted against the abatement notice and found to be compliant, however further works are required to ensure ongoing compliance. Investigation continuing.

14 Jun 2024 Update	332124-150 ENF-24510	Chemical Sampling Survey	Non-compliance	Schlumberger New Zealand Limited (51451)	R2/6032-2.0	EAC-25864 - Explanation Requested - Letter	Investigation Continuing

Comments: During routine compliance monitoring it was found that resource consent conditions were not being complied with at an oil and gas servicing company at Paraite Road, Bell Block. Investigation found that the suspended solid concentration within the stormwater discharge (154 gm/m3) was in contravention of resource consent conditions (100 gm/m3). An extension has been requested and granted on the letter requesting explanation. Investigation continuing.

Updates of Compliance Monitoring – Non-compliances from previous agendas

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
27 Jun 2024 Update	332124-152 ENF-24513	Compliance Monitoring Insp.	Non-compliance	South Taranaki District Council (9623)	R2/4566-2*R2/5512-2.0	EAC-25898 - Abatement Notice*EAC-25897 - Abatement Notice*EAC-25879 - Explanation Requested - Letter*EAC-25877 - Explanation Requested - Letter	Investigation Continuing

Comments: During routine compliance monitoring, it was found that a rock protection wall associated with a boat ramp was no longer functioning effectively as designed, in contravention of resource consent conditions at Bayly Road, New Plymouth. The responsible party has maintenance works planned to resolve this issue which will be carried out in conjunction with the upcoming boat ramp extension project. Council will continue to monitor the site to ensure the remedial works are completed in a timely manner. A letter requiring explanation was sent, an explanation has been received and is being considered. Investigation continuing.

15 Jul 2024 Update	332124-136 ENF-24473	Follow Up Inspection	Non-compliance	Jones Quarry Limited (30989)	R2/5124-2.1	EAC-25814 - Abatement Notice	Investigation Continuing

Comments: During routine compliance monitoring it was found that resource consent conditions were not being complied with at a quarrying operation at Mokau Road, Uruti. Investigation found that sediment laden stormwater (390 gm/m3) was being discharged in contravention of resource consent conditions (100 gm/m3). An abatement notice was issued requiring works to be undertaken to ensure compliance with resource consent conditions. A re-inspection was undertaken 15 July 2024 and although some works had been undertaken at the site, further works were required before the abatement notice is deemed to be complied with. A follow-up inspection will be undertaken after 30 September 2024. Investigation continuing.

Compliance Monitoring – Non-compliances for the period 01 Jul 2024 to 08 Aug 2024

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
3 Jul 2024	332125-003 ENF-24518	Annual Inspection	Non-compliance	Lander & Co (74000)	R2/1223-4.1	EAC-25868 - Explanation Requested - Letter	Investigation Continuing
Comments: During the analysis of water take data as part of routine compliance monitoring, it was found that resource consent conditions were not being complied with at Wairere Road, Ohangi. Investigation found that surface water had been taken at a volume that was in contravention of resource consent conditions on three occasions between December 2023 and January 2024. A letter requesting an explanation was sent. A response was received and is being considered. Investigation continuing.							
5 Jul 2024	332125-004 ENF-24522	Annual Inspection	Non-compliance	Longview Limited (3782)	R2/10887-1.1	EAC-25878 - Explanation Requested - Letter	Investigation Continuing
Comments: During the analysis of water take data as part of routine compliance monitoring, it was found that resource consent conditions were not being complied with at Paetaia Road, Waitotara. Investigation found that surface water had been taken at a volume that was in contravention of resource consent conditions on six occasions between October 2023 and February 2024. A letter requesting an explanation was sent. A response was received and is being considered. Investigation continuing.							
10 Jul 2024	332125-001 ENF-24520	Compliance Monitoring Insp.	Non-compliance	Penelope Paul (76472)*Terry Michael Paul (3418)	R2/4693-2	EAC-25874 - Abatement Notice*EAC-25873 - Abatement Notice	Investigation Continuing
Comments: During routine monitoring it was found that resource consent conditions were not being complied with at a poultry farm at Mountain Road, Inglewood. An inspection found that wash water from the chicken sheds was discharging to the Waiongana Stream, in contravention of the resource consent conditions. An abatement notice was issued requiring works to be undertaken to ensure compliance with resource consent conditions. A follow-up inspection is scheduled for 30 September 2024. Investigation continuing.							

Compliance Monitoring – Non-compliances for the period 01 Jul 2024 to 08 Aug 2024

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
10 Jul 2024	332125-005 ENF-24523	Annual Inspection	Non-compliance	Anthony Symes (50527)*Lupton Trust (30526)*Ruth Lupton (67988)*Warwick Lupton (30486)	R2/10113-1.2	EAC-25891 - Abatement Notice*EAC-25882 - Explanation Requested - Letter	Investigation Continuing
Comments: During the analysis of water take data as part of routine compliance monitoring, it was found that resource consent conditions were not being complied with at Lennox Road, Waverley. Investigation found that groundwater had been taken at a volume that was in contravention of resource consent conditions between 30 June 2023 and 1 July 2024. An abatement notice was issued and a letter requesting an explanation was sent. A reinspection will be undertaken after 16th August 2024. Investigation continuing.							
15 Jul 2024	332125-002 ENF-24521	Compliance Monitoring Insp.	Non-compliance	KiwiRail Holdings Limited (50168)	R2/10364-1.0	EAC-25875 - Explanation Requested - Letter	No Further Action At This Stage/Costs Recovered
Comments: During routine compliance monitoring, it was found that resource consent conditions were not being complied at a weir within the Waipuku River, Mountain Road, Midhirst. An inspection of a rock ramp installed below a concrete weir to provide for fish passage across the structure, was found to have had sections washed away during a recent high flow event, resulting in restricted fish passage. A letter requesting an explanation was sent and a response received. The responsible party advised that they intend to engage NIWA to design an appropriate long-term solution to address fish passage, noting that the rock material place below the weir has now failed on two occasions. Council will continue to monitor the site to ensure that compliance with resource consent conditions is achieved.							
22 Jul 2024	332125-009 ENF-24531	Annual Inspection	Non-compliance	Greymouth Petroleum Limited (20755)	R2/7722-1	EAC-25895 - Explanation Requested - Letter	No Further Action/Costs Recovered
Comments: During annual compliance monitoring it was found that resource consent conditions were not being complied with at the Epiha wellsite at Otaraoa Road, Waitara. Investigation found that a blockage within the stormwater system had resulted in stormwater not being directed and treated via the skimmer pits before being discharged from the site, in contravention of of resource consent conditions. The stormwater quality was found to be within the parameters of the resource consent conditions. A letter requesting explanation was sought and a response received and accepted. No further action.							

Compliance Monitoring – Non-compliances for the period 01 Jul 2024 to 08 Aug 2024

Inspection Date	Job Number IRIS ID	Inspection Type	Compliance Status	Alleged Responsible Party	Consent Number	Action Taken	Recommendation
24 Jul 2024	332125-008 ENF-24530	Office Assessment	Non-compliance	New Plymouth District Council (9565)	R2/1389-3	EAC-25896 - Explanation Requested - Letter	Investigation Continuing
Comments: Self-notification was received regarding an unauthorised discharge of wastewater from the New Plymouth District Council operated wastewater treatment system at Onaero Bay, Onaero. It was found that during April 2024, the volume of wastewater discharged into the soakage trenches was in contravention of resource consent conditions and a previously issued abatement notice. A letter requesting explanation was sent. Investigation continuing.							
24 Jul 2024	332125-007 ENF-24529	Office Assessment	Non-compliance	New Plymouth District Council (9565)	R2/2046-3	EAC-25894 - Explanation Requested - Letter	Investigation Continuing
Comments: Self-notification was received regarding an unauthorised discharge of wastewater from the New Plymouth District Council operated wastewater treatment system at Urenui Beach Motor Camp, Beach Road, Urenui. It was found that during April 2024, the volume of wastewater discharged into the soakage trenches was in contravention of resource consent conditions on five occasions. A letter requesting explanation was sent. Investigation continuing.							
29 Jul 2024	332125-006 ENF-24527	Annual Inspection	Non-compliance	Coleraine Farms Limited (31958)	R2/1717-4.0	EAC-25893 - Abatement Notice	No Further Action At This Stage/Costs Recovered
Comments: During the annual dairy inspection round it was found that the farm dairy effluent disposal system was not operating within resource consent conditions on Lower Okotuku Road, Waverley. An abatement notice was issued requiring works to be undertaken to the farm dairy effluent disposal system to ensure compliance with resource consent conditions. Re-inspection will be undertaken after 31 January 2025.							

Date: 3 September 2024

Subject: **Dam Safety Update**

Author: F Kiddle, Strategy Lead

Approved by: A D McLay, Director - Resource Management

Document: 3300164

Purpose

1. To provide an update on the implementation of the Building (Dam Safety) Regulations 2022.

Executive summary

2. Owners of classifiable dams had until 13 August 2024 to submit their potential impact classification (PIC) to the Taranaki Regional Council (the Council). So far 13 classifications have been submitted. 12 have been approved and issued.
3. Officers estimate there is at least 6 further PIC's still to be submitted to the Council. Most of these are farm dams or owned by smaller operators. With only 22 recognized engineers nationally – who are required to audit and sign-off a PIC before it is lodged with Council – we expect owners may be finding it challenging to get their PIC ready.
4. The Council will take a graduated approach to enforcing the requirement that all classifiable dams submit a PIC. We are now following up with dam owners and reminding them of their obligations.
5. On 25 July the Council declared that the Highlands Park Dam as dangerous under the Building Act 2004. It has been found by engineers to be at risk of overtopping and failure in a moderate flood event. The public is being notified about the dangerous dam and Council officers are working closely with NPDC to address dam risk.

Recommendations

That Taranaki Regional Council:

a) receives the memorandum titled *Dam Safety Update*

b) notes that 13 potential impact classifications have been submitted and 12 approved and issued

c) notes that the Council will take a graduated approach to enforcing compliance for those yet to submit their potential impact classification

d) notes that the Highlands Park Dam has been declared a dangerous dam, that the public is being notified and work is underway with NPDC to address dam risk.

Background

6. Under the Building Act 2004 (the Act) the Council has responsibilities for administering and monitoring the dam safety process. The Council:
    - must maintain a register of all dams in its district
    - must administer and monitor the dam safety process
    - must have a dangerous dams policy that is reviewed every five years
    - is given a range of powers to act if a dam poses an imminent risk to public safety.
7. The Building (Dam Safety) Regulations 2022 (the Regulations) came into effect on 13 May 2024. This formally began the dam safety assurance process. The first step in this process is that any owner of a classifiable dam, which is a dam that has a height of 4 or more metres and stores 20,000 or more cubic metres volume of water or other fluid, must submit a potential impact classification (PIC) to the Council by 13 August 2024.
8. A PIC is an assessment of how much damage would be caused if a dam was to fail. Every classifiable dam is given a low, medium or high PIC. Any PIC submitted to the Council must be audited and signed off by a recognized engineer. A list of these engineers is maintained by Engineering New Zealand. Any dam that is given a medium or high PIC has additional regulation placed upon it. This includes that the owner must prepare and submit a dam safety assurance programme (DSAP) to the Council within 12 months for a medium PIC dam or 12 months for a high PIC dam. Medium or high PIC dams can also be declared dangerous, flood-prone or earthquake prone if they fail certain tests set out in the Regulations.
9. Any dangerous, flood-prone or earthquake-prone is subject to the Council's Policy on Dangerous Dams Earthquake-Prone Dams and Flood-Prone Dams. This policy was approved by Council on 2 April 2024. Under this policy, the Council must notify the public of the danger, including directly notifying the Taranaki Emergency Management Office (TEMO) and operators of critical infrastructure of lifeline utilities that may be affected. The Council is also to work with the dam owner to agree an action plan for reducing dam risk.

Discussion

10. So far 13 PICs have been submitted to the Council. 12 have been approved and issues. Officers estimate there is at least 6 further PIC's still to be submitted to the Council. Most of these are farm dams or owned by smaller operators. With only 22 recognized engineers nationally – who are required to audit and sign-off a PIC before it is lodged with Council – we expect owners may be finding it challenging to get their PIC ready.
11. The Council will take a graduated approach to enforcing the requirement that all classifiable dams submit a PIC. This includes taking into account if dam owners have made their best efforts to secure a recongised engineer but have been unable to do so due to limited availability. We are now following up with dam owners and reminding them of their obligations, including that failure to submit a PIC is an offence under the Building Act 2004. If this approach is unsuccessful, we will consider additional enforcement action in-line with the Council's Resource Management Act Enforcement Policy 2017 – which is considered also appropriate for dam safety matters.
12. On 25 July the Council declared that the Highlands Park Dam, which has a high PIC, as dangerous under the Building Act 2004. It has been found by engineers to be at risk of overtopping and failure in a moderate flood event, putting between 11 and 100 people at risk. Dam failure would put 139 properties downstream of the dam in danger of being flooded to some degree, 53 of them with buildings that would likely be affected.

13. The declaration was based on a letter from NPDC to the Council on 23 June 2023 that an engineering assessment considered the dam was dangerous. The Council could not formally declare the dam dangerous until the dam had received its PIC under the regulations. This occurred on 4 July.
14. NPDC has been taking prompt action to address dam risk since the original engineering assessment. We have been liaising with NPDC about an initial action plan after receiving the letter in June 2023. NPDC has already:
    a. carried out maintenance of the primary spillway and installed CCTV to allow real-time inspection of the pipe
    b. carried out maintenance on the existing auxiliary spillway to improve its capacity
    c. commissioned catchment stormwater modeling to assess the dams performance and inform remediation options.
15. We are now working with NPDC to agree a final action plan for the remaining work. This includes:
    a. completing the catchment stormwater modelling
    b. a timeline for decisions on remediation
    c. undertaking that remediation
    d. updating NPDC's Dam Emergency Action Plan for the Huatoki, Mangaotuku and Waimea dams to also include the Highlands Park Dam.
16. Regarding public notification, material outlining the dangerous dam was added the Council's website on 27 August with a public notice going in the Taranaki Daily Times on 31 August. NPDC is also writing to all affected property owners directly. This includes informing them that NPDC will be required to include in the land information memorandum for their property the flood potential in the event of the dam breaking. NPDC has already informed TEMO about the dam risk. We formally notified them on 27 August. We also directly informed Powerco as an infrastructure and lifeline utility provider, whose main offices are within the modeled flood extent.

Financial considerations—LTP/Annual Plan

17. This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

18. This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

19. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.

Community considerations

20. This memorandum and the associated recommendations have considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

21. This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

Document 3296347: Highlands Park Dangerous Dam Public Notification Text

Highlands Park Dangerous Dam Public Notification Text

Website go-live date: 27 August

Public notice date: 31 August.

Public Notice

The Highland Park Flood Detention Dam has been declared a dangerous dam under the Building Act 2004 and has a high potential impact if it was to fail. The dam has been found to be at risk of overtopping and failure in a moderate food event. Further information, including affected properties, can be found at https://www.trc.govt.nz/environment/hazards-and-protection/dam-safety.

All persons are advised to not approach the dam during times of heavy rain.

The New Plymouth District Council has developed and is implementing an action plan to address dam risk.

For further information, including how this may affect your property, please contact enquiries@npdc.govt.nz.

Website Text

Page to go somewhere easily accessible on the website. Suggest straight under the Hazards & protection page, with a cross reference to this page from the dam safety and consents page.

Dangerous Dams in Taranaki

This page contains the details of all dangerous, flood-prone or earthquake-prone dams in Taranaki.

A dangerous, flood-prone or earthquake-prone dam is a dam with a medium or high potential impact classification – a measure of how much damage dam failure might cause – that is at risk of failure under certain circumstances. These circumstances are set out in the Building (Dam Safety) Regulations 2022.

The Taranaki Regional Council (the Council) is required through our Dangerous Dams Policy to notify the public of any dangerous dams and work with dam owners of dangerous dams to develop an action plan to address dam risk. The Council also has powers under the Building Act 2004 to intervene and undertake work if the dam owner does not.

Highlands Park Detention Dam

The Highland Park Flood Detention Dam has been declared a dangerous dam under the Building Act 2004 and has a high potential impact if it was to fail. The dam has been found to be at risk of overtopping and failure in a moderate flood event. The full extent of at risk properties is displayed in the below map. Different properties have very different levels of risk. In particular, the below map also shows if a dwelling is predicted to be impacted or not.

All persons are advised to not approach the dam during times of heavy rain.

The New Plymouth District Council has developed an action plan to address dam risk, which has been approved by the Taranaki Regional Council. Work is underway to reduce dam risk.

For further information please contact enquiries@npdc.govt.nz.

Sign Text

WARNING

Do not approach during heavy rain.

The Highlands Park Flood Detention Dam is dangerous and is at risk of overtopping and failure.

Q&A (if needed for media queries)

What is being done to address the problem?

NPDC is working on fixing the issues with Highlands Park Dam, starting with investigating the options. We will know the timeline of work once NPDC's plan of action is confirmed.

NPDC staff monitor the city's dams every month, and third-party dam experts are engaged to undertake annual inspections and five-yearly comprehensive dam safety reviews. NPDC also has trigger levels to initiate increased monitoring if the dams, including Highlands Park, ever get near to full.

NPDC has a Dam Emergency Action Plan for the Huatoki, Mangaotuku and Waimea dams, and they are amending this to include emergency planning for the Highlands Park area. The action plan is part of an Incident Response Plan that addresses how NPDC will respond in emergencies, which is part of NPDC's overall strategy to be prepared for any emergency in the district.

NPDC will also be required to include in the land information memorandum (LIM) for affected properties the flood potential in the event of the dam breaking.

How many people are at risk?

The assessment done by Tonkin and Taylor assess that between 11 and 100 people would be at risk in the event the dam failed, depending on the day and time. Dam failure would put 139 properties downstream of the dam in danger of being flooded to some degree, 53 of them with buildings that would likely be affected. The degree of this risk varies significantly from property to property, this detail is shown in the map.

What can the public do?

While NPDC works on bringing the dam up to regulation, it is recommended that residents in affected properties prepare a flood response plan for their family or staff members if a flood alert is raised, so that they know what to do in an emergency. Helpful information is available online here: getready.govt.nz/prepared.

All members of the public should also not approach the dam during periods of heavy rain and be careful downstream of the dam.

Why has it taken this long to declare this a dangerous dam?

The Taranaki Regional Council was notified by NPDC that the dam was dangerous on 23 June 2023. NPDC promptly began developing an action plan to remediate the dam and has been working through implementing that action plan. This was discussed with TRC.

TRC could not formally declare the Highlands Park Dam as dangerous until the Building (Dam Safety) Regulations 2022 entered into effect in May 2023 and the Highlands Park Dam then had its potential impact classification approved. This was done on 4 July 2024. The decision by TRC to declare the dam dangerous was made on 25 July.

Date: 29 July 2024

Subject: **Key Native Ecosystems Programme Update**

Author: L Honnor, Programme Lead - Biodiversity

Approved by: D Harrison, Director - Operations

Document: 3288008

Purpose

1. The purpose of this memorandum is to present an update on the identification of nine new Key Native Ecosystem (KNE) sites between January-June 2024.

Executive summary

2. The *Biodiversity Strategy for the Taranaki Regional Council* ('the Biodiversity Strategy') sets out four strategic priorities for the Taranaki Regional Council (the Council), one of which relates to the protection of KNEs on privately owned land.
3. KNEs refer to terrestrial areas identified by the Council as having regionally significant ecological values and are targeted for ongoing protection and management.
4. Officers work with interested landowners, including iwi, and community groups to promote the voluntary protection, maintenance and improvement of ecological values associated with the sites.
5. Any landowner can seek an ecological assessment of their particular site for potential involvement in the KNE programme. When opportunities arise, new sites are evaluated by Council officers to determine their regional significance, and/or identify agreed management actions to protect, maintain and improve those values.
6. Protection of KNEs is part of the Council's non-regulatory work and involves working with interested landowners and others through the preparation and implementation of Biodiversity Plans, the provision of environmental enhancement grant funding, and/or assisting with pest animal and plant control.
7. Nine new sites have been identified in the second half of the 2023/24 financial year, covering a total area of 1,867.5 ha.
8. With the addition of the new sites, the Council has so far identified 390 KNEs covering approximately 132,439.9 hectares in the region.
9. 314 of the KNE sites are partially or completely privately owned. Together, they cover approximately 23,571.75 hectares of the privately owned indigenous vegetation in Taranaki.
10. 245 KNE sites are currently under active management through a Council biodiversity plan, which provides site-specific information on agreed actions for protecting that site. A biodiversity plan typically addresses such matters as formal protection, fencing, weed control, pest control and restoration.

Recommendations

That Taranaki Regional Council:

a) receives this memorandum and the attached inventory sheets for Edgy, Oki Koki, Hickey's Farm Swamp, Top Farm, Five Oaks Farm, Whenuariki Bush, Spencer's Wetland, Waokena and Wildlife Properties

b) notes that the aforementioned sites have indigenous biodiversity values of regional significance and should be identified as Key Native Ecosystem sites.

Background

11. The Biodiversity Strategy sets out the Council's vision, aims, priorities and work programmes for maintaining and enhancing indigenous biodiversity in the region. In so doing, it assists in giving effect to its statutory functions for indigenous biodiversity under the *Resource Management Act 1991*. The Biodiversity Strategy sets out four strategic priorities, one of which relates to the Council focusing on protecting KNEs on privately owned land.
12. The Council's management approach is to work with interested landowners, community groups and other interested parties to promote the voluntary protection and management of ecological values associated with KNE sites on privately owned land. It involves the provision of a property planning service and other assistance, including the preparation and implementation of Biodiversity Plans, the provision of environmental enhancement grant funding, and/or assisting with pest animal and plant control.
13. The identification of KNEs is an ongoing exercise by the Council. The Council maintains an inventory and database identifying KNEs. However, any landowners can seek an assessment of their particular site for potential involvement in the KNE programme. When opportunities arise, new sites are evaluated in relation to their regional significance, and/or existing information and databases updated.

Discussion

KNE site inventory process

14. Council officers have recently investigated and consulted with landowners to identify a further nine sites which total 1,867.5 hectares and recommend they be adopted as KNEs. The candidate sites are:
    - Edgy
    - Oki Koki
    - Hickey's Farm Swamp
    - Top Farm
    - Five Oaks Farm
    - Spencer's Wetland
    - Whenuariki Bush
    - Waokena
    - Wildlife Properties.
15. All the sites have been evaluated by Biodiversity officers as significant in accordance with criteria set out in Bio Policy 4 of the *Regional Policy Statement for Taranaki* (2010), i.e. rarity and distinctiveness, representativeness or ecological context. Copies of the inventory sheets for the new sites are attached to this item.

16. With the addition of the new sites, the Council has so far identified 390 KNEs (covering approximately 132,439.9 hectares), which includes some public conservation land. Of the 292,475 hectares of indigenous vegetation in the region, approximately 149,482 hectares is in private ownership.
17. A total of 314 of the KNE sites, covering approximately 32,571.8 hectares, are partially or completely privately owned. This represents around 15.8% of the privately owned indigenous vegetation in the region.
18. Identification of a site as a KNE does not have any extra bearing on the rules or controls that already apply to such sites in regional or district council plans.
19. Identification of sites is undertaken by the Council to focus its non-regulatory efforts to work with and support landowners to protect biodiversity values on their land. As previously noted, protection is implemented through the preparation and implementation of Biodiversity Plans, the provision of environmental enhancement grant funding, and/or assisting land occupiers and/or care groups with pest animals and pest plant control.
20. The 2021/31 Long Term Plan includes, amongst other things, a target to maintain and regularly update the Council's Inventory of KNEs. The identification of the additional KNEs gives effect to that commitment.

Financial considerations—LTP/Annual Plan

21. This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

22. This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

23. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.

Community considerations

24. This memorandum and the associated recommendations have considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

25. This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

Document 3252769: Edgy

Document 3252827: Oki Koki

Document 3252631: Hickey's Swamp Forest

Document 3246121: Top Farm

Document 3257101: Five Oaks Farm

Document 3256138: Spencer's Wetland

Document 3256189: Whenuariki Bush

Document 3266724: Waokena

Document 3283754: Wildlife Properties

Edgy

At a glance

TRC Reference: BD/9757

Ecological District: Egmont

Land Tenure: Private

Area(ha): 2.1

GPS: 1696030X & 5675746Y

Habitat: Forest Remnant

Bioclimatic Zone: Semi-Coastal

Ecosystem Type: WF13: Tawa, kohekohe, rewarewa, hīnau, podocarp forest

Ecosystem Priority:	Priority 2
LENZ:	F5.2b Acutely threatened
	G3.3a Acutely threatened
National:	Priority 1 – Threatened Land Environment
	Priority 4 – Threatened Species
Regional:	Key Native Ecosystem
Regional Ecosystem Loss:	Chronically threatened 10-20% left
Protection Status:	QEII Covenant
Catchment:	Waiwhakaiho (392)

General Description

Edgy is a 3.7 ha covenant on the fringes of urban New Plymouth on the banks of the Waiwhakaiho river, in the Egmont ecological district. The covenant contains a 2.1 ha remnant of cutover semi-coastal WF13, Tawa, kohekohe, rewarewa, hinau, podocarp forest with a reasonable canopy cover and regenerating undergrowth. A small area of regenerating forest and a Pa site, which is maintained in pasture, are also included within the covenant. The site provides good connectivity to the Waiwhakaiho River other Key Native Ecosystems in the area including Cannan bush, Welbourn school bush and Dorset road bush.

Ecological Features

Flora

The canopy of the main forest remnant is dominated by pukatea, tawa, kohekohe, rimu, kahikatea and rewarewa. An area of younger, regenerating forest is also present and has a canopy dominated by māhoe, pigeonwood and tree ferns. The understory contains a good mix of seedlings and saplings throughout, including kawakawa, mapou and kanono. A variety of native ferns are also present in the groundcover, including the 'regionally distinctive' jointed fern and the 'at risk' kingfern.

Fauna

A range of bird species which are typical of urban New Plymouth are found at the site including kererū, tūī, silvereye, grey warbler, fantail, kingfisher, shining cuckoo and morepork. Decent habitat exists for reptiles and notable species may be present. Many freshwater species are known to be present in the adjacent Waiwhakaiho river including banded kokopu, giant kokopu, koaro, inanga, lamprey, longfin eels and short jawed kokopu. Various invertebrates will also be found at the site.

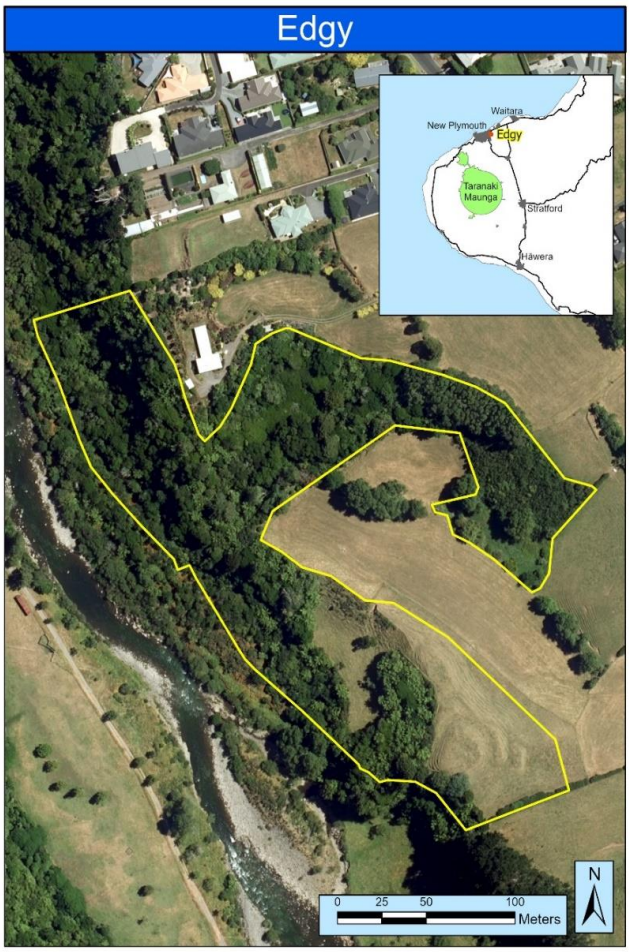
Ecological Values

Rarity and Distinctiveness - High	Notable plant species such as the 'regionally distinctive' jointed fern and Japanese lady fern, the 'at risk' kingfern and one species of 'threatened' climbing rātā are present
Rarity and Distinctiveness - High	The ecosystem type is WF13, Tawa, kohekohe, rewarewa, hīnau, podocarp forest which is classified as 'Chronically threatened'. There is approximately 16% of this type of ecosystem left in the Taranaki region.

Ecological context - High	Provides habitat for regionally distinctive species and is an important link in a corridor of native vegetation along the sides of the Waiwhakaiho river.
Sustainability - Positive	Key ecological processes still influence the site and with appropriate management, it can remain resilient to existing or potential threats. The site has the additional benefit of being formally protected.

Other Management Issues

Habitat Modification - Low	The site is fully fenced and protected with a QEII conservation covenant. There is no immediate risk of habitat modification.
Herbivores - Medium	Possums will be present in low densities, and also prey on insects and chicks, but present greatest threat to vegetation through browsing. Stock are excluded and there are no goats, deer or pigs in the area.
Possum Self-help	The site is outside the current possum self-help program boundary although receives some possum control by the landowners. High possum numbers have the potential to impact on forest health.
Predators - Medium	Predators including rodents, mustelids, possums, feral cats and hedgehogs will be having an impact on native species at the site.
Weeds - Medium	A small number of weeds are present including climbing asparagus, which has the potential to impact the natural values of the forest.



Oki Koki (Griffin)

At a glance

TRC Reference: BD/9741

Ecological District: North Taranaki

Land Tenure: Private

Area(ha): 18.16

GPS: 1725397X & 5683723Y

Habitat: Coastal/Forest Remnant

Bioclimatic Zone: Semi-Coastal

Ecosystem Type: WF13: Tawa, kohekohe, rewarewa, hinau, podocarp forest

LENZ: F1.1b Less reduced, better protected

Local: Significant Natural Area

Regional Ecosystem Loss: Chronically threatened 10-20% left

Protection Status: QEII Covenant

Catchment: Waitoetoe (928)

General Description

Oki Koki (Griffin) is on privately owned land 4.9km east of Urenui. It lies in the North Taranaki Ecological District. It is an 18.2ha block of remnant coastal forest and is adjacent but not connecting to Okoki Kereru and Okoki Pa KNE's. The bush lies mostly within a steep river gully and has a varied canopy, with tawa, rewarewa, kohekohe, puriri and tree ferns featuring heavily in places and large podocarps dotted throughout. The block lies within the Waitoetoe river catchment.

Ecological Features

Flora

The site has a varied canopy but most common canopy species are tawa (Beilschmiedia tawa), puriri (Vitex lucens) and rewarewa/NZ Honeysuckle (Knightia excelsa). Large podocarps (mostly rimu (Dacrydium cupressinum) and miro (Prumnopitys ferruginea)) are also dotted throughout the site. In some steep areas the canopy is much lower and is characterised more by large tree ferns and kohekohe (Dysoxylum spectabile).

Fauna

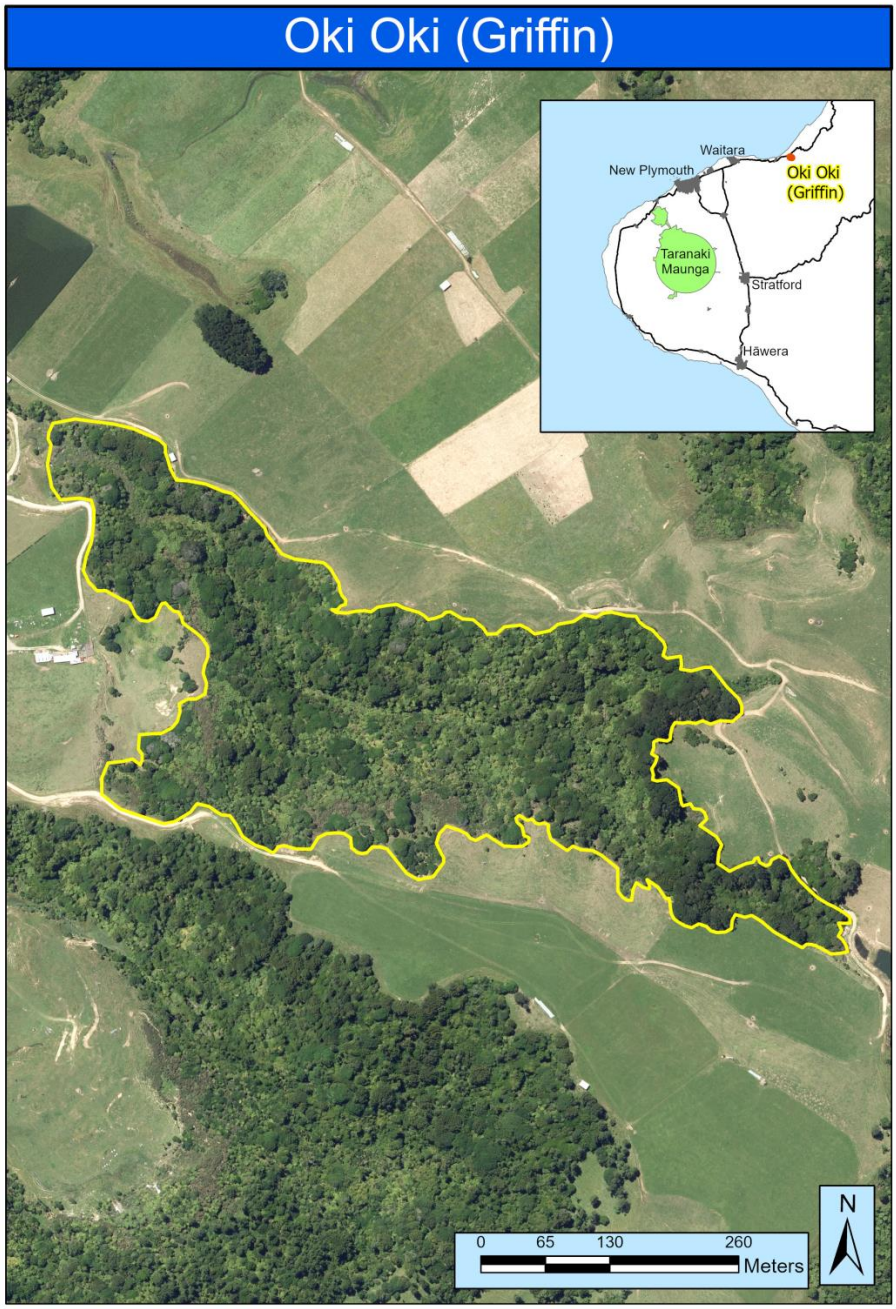
Records of Piwakawaka and Riroriro on site, but largely unknown.

Ecological Values

Ecological context - High	The site is adjacent to two existing KNE's, Okoki and Okoki Pa and provides connectivity between these sites and other remnant bush in the surrounding area.
Rarity and Distinctiveness - Medium	Contains three species of "nationally vulnerable" rata (scarlet, white, northern) as well as the "at-risk" King Fern and "nationally vulnerable" poroporo.
Representativeness - Low	The site is categorzied as LENZ IV F1.1b, "No Threat Category".
Sustainability - Positive	Due to the difficult terrain the site has remained in good condition and key ecological processes still influence the site. The area is already mostly fenced and is in the process of covenanting with QEII which will ensure that key ecological processes can remain viable.

Other Management Issues

Herbivores - High	Goats commonly heard and seen. Common possum sign but scattered throughout site.
Weeds - Medium	Weeds around perimeter and penetrating into bush. Patches of tradescantia, gorse, pinus radiata round margin, kahili ginger, pampas, inkweed, gorse, selaginella and woolly nightshade present.
Predators - Low	Fresh possum sign scattered throughout



Hickeys Swamp Forest

At a glance

TRC Reference: BD/9785

Ecological District: Egmont

Land Tenure: Private

Area(ha): 3.5

GPS: 1680879X & 5650392Y

Habitat: Forest Remnant/Wetland

Bioclimatic Zone: Lowland

Ecosystem Type: MF8.3: Kahikatea, rimu, kamahi forest

Wetland mosaic

Ecosystem Priority: Priority 3

LENZ: F5.3b Less reduced, better protected

National: Priority 1 – Threatened Land Environment

Priority 2 – Sand Dunes and Wetlands

Priority 4 – Threatened Species

Regional: Potential KNE

Regional Ecosystem Loss: Reduced 30-50% left

Protection Status: QEII Pending

Catchment: Kapoaiaia (375)

General Description

Hickeys Swamp Forest is a 3.5ha indigenous forest remnant located on Upper Kahui Road. It lies approximately 420 meters from Te Papakura O Taranaki with a canopy dominated by kahikatea, swamp maire and kamahi. The remnant can be described as a 'swamp mosaic' with a mix of wet adapted vegetation and dryland species. Less than 30% of this forest type is legally protected in Taranaki and, in general, wetland habitats are also greatly reduced.

Ecological Features

Flora

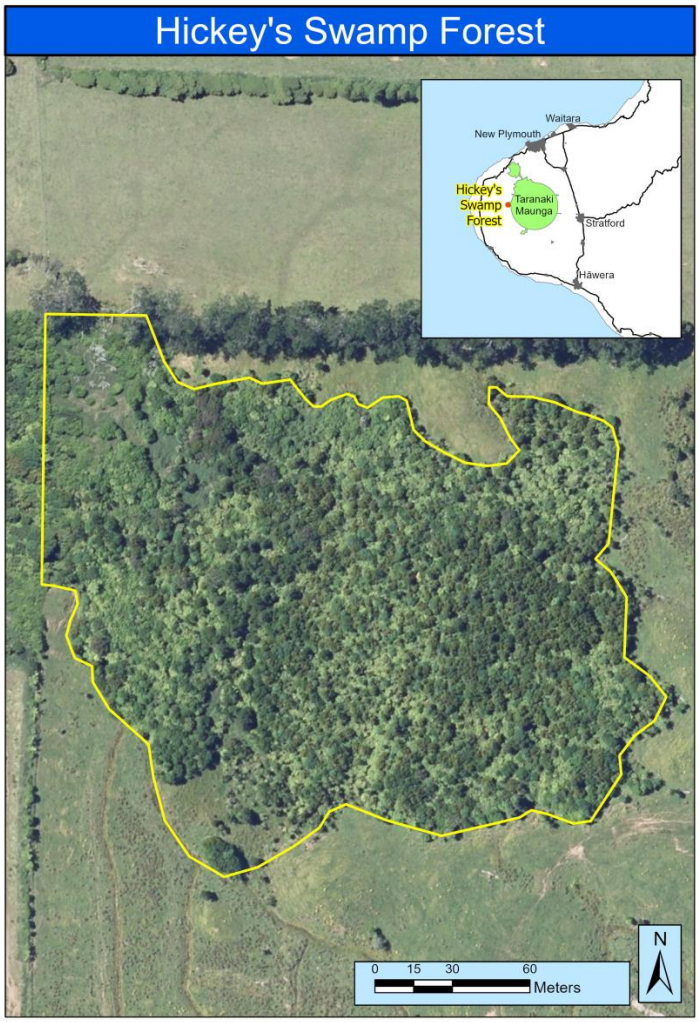
The site is a wetland mosaic forest remnant. The canopy is dominated by swamp maire, kamahi and kahikatea. Present on the forest margins are obligate wetland species including Juncus spp., Carex spp., and raupo. The remnant understory species include pate, kanono and tree ferns. Ground cover, climbers and epiphytes are common within the site. Notable flora includes the threatened swamp maire, kanuka and three species of rata.

Ecological Values

Rarity and Distinctiveness - High	Contains notable fauna including rifleman and long fin eel as well as notable flora species including swamp maire, three species of threatened rata and kanuka.
Ecological context - High	Provides connectivity to other habitats in the area. Provides core habitat for notable flora and fauna including small freshwater streams and wetland area.
Representativeness - Medium	Contains indigenous vegetation of MF8-3 ecosystem type which has 35% of its historic extent remaining with <30% legally protected and includes 'Threatened' swamp maire.
Sustainability - Positive	The size and condition of this site ensure key ecological processes will continue to function. Under appropriate management, this site will remain resilient to existing or potential threats.

Other Management Issues

Herbivores - High	The site is unfenced and grazing stock has access to the forest edge, it appears stock cannot infiltrate the forest interior as vegetation becomes dense.
Habitat Modification - Medium	Habitat is somewhat modified by stock. Stock graze and trample young seedlings and saplings which inhibits regeneration. Stock also destabilize the soil beneath larger trees which can increase the likelihood of windfalls.
Predators - Medium	The site is outside of the possum self-help boundary and lies within a kilometre of Te Papakura O Taranaki. A small amount of possum sign was seen during the condition assessment but at a glance it appears possum numbers are relatively low. Rodents and mustelids will also pose a threat at this site.
Weeds - Medium	Interior weeds and canopy weeds are low density however there are scattered weeds along the forest margin and within canopy holes. Species include, blackberry, Californian thistle, foxglove, ragwort and gorse. Ragwort and gorse are included in the Regional Pest Management Plan under the sustained control category.



Top Farm

At a glance

TRC Reference: BD/9537

Ecological District: Egmont

Land Tenure: Private

Area(ha): 70

GPS: 1701617X & 5649564Y
1702368X & 5649564Y

Habitat: Forest Remnant

Bioclimatic Zone: Lower Montane

Ecosystem Type: MF8.3: Kahikatea, rimu, kamahi forest

LENZ: H4.1a Less reduced, better protected

National: Priority 4 – Threatened Species

Regional: Key Native Ecosystem

Regional Ecosystem Loss: Reduced 30-50% left

Protection Status: QEII Pending

Catchment: Waitara (395)

General Description

The Top Farm forest remnants are located at the end of Denbigh Road 7.5kms west of Midhirst, and are partly connected to Te Papakura o Taranaki / Egmont National Park. They consist of two forest blocks (22ha and 48ha approx.) of cut over or well regenerated native bush on mostly flat ground between Denbigh Road and the Manganui River. The site provides very good connectivity between Te Papakura o Taranaki / Egmont National Park and nearby KNE's such as the Base Camp QEII KNE, and a number of notable flora and fauna species are present.

Ecological Features

Flora
The main canopy of block A is dominated by kahikatea and kamahi with occasional swamp maire and other species present. Block B is much more varied with a mix of rimu, miro, broadleaf, totara, kamahi, white maire, kahikatea and others. Both blocks have areas of stock access and understory browse is evident on the margins in places. Small swampy margins have areas of sphagnum moss in open areas. Also of note is the presence of green mistletoe (Ileostylus micranthus) in both blocks.

Fauna
These forest areas contain a range of resident native and introduced bird species. Tomtit, grey warbler, fantail, tui, kereru and bellbird were all noted and other species will be present. These habitats are also connected to the Western North Island brown kiwi and whio protection area of Te Papakura o Taranaki. Reptiles recorded in the vicinity include the forest gecko and copper skink and these are likely to be present at this site. There is also good potential for other notable native species to be present such as native invertebrates and native fish.

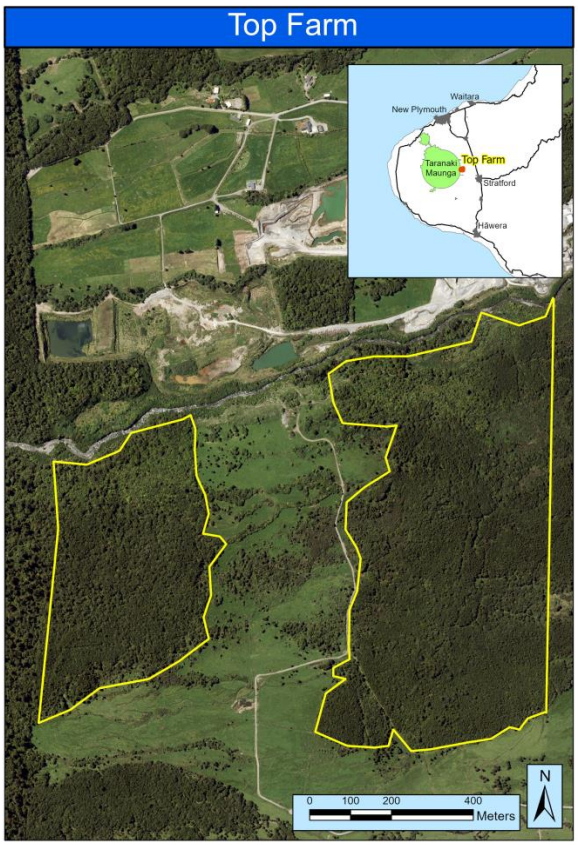
Ecological Values

Ecological context - High	Connected to Te Papakura o Taranaki / Egmont National Park and provides additional habitat for fauna and flora species in this area. Provides connectivity to other nearby KNE's such as the Base Camp QEII KNE.
Rarity and Distinctiveness - Medium	The site is adjacent nesting habitat for whio/blue duck along the Manganui river and contains notable flora species such as green mistletoe and swamp maire.
Representativeness - Medium	The ecosystem type represented here (MF8-3, Kahikatea, Rimu, Kāmahi forest) is considered 'Reduced' from its former extent in Taranaki with only around 35% remaining. Less than 30% of this type of forest is

	under formal legal protection in Taranaki and therefore it is classified as a priority representative area for management.
Sustainability - Positive	In relatively good vegetative condition. Key ecological processes still influence the site, and under appropriate management, it can remain resilient to existing or potential threats.

Other Management Issues

Habitat Modification - Low	Occasional understory stock browse but mainly confined to the margins. Fencing will resolve this issue.
Herbivores - Medium	Currently at high risk from stock browsing although will be reduced when completely fenced and stock proof. The site has the added benefit of having no feral goats, deer or pigs in this area.
Possum Self-help	Within the self-help possum control area and receives sustained possum control. Possums are present at low densities.
Predators - Medium	Mustelids, rats, cats, hedgehogs and possums will be present and having an impact on the native ecosystem. In part, the effects of these predators will be being mitigated through increased landscape possum and mustelid control programs in this area.
Rural Predator Free signed up: Yes	A number of mustelid traps are set up on the wider property and are being serviced by the landowner.
Weeds - Low	Blackberry and gorse are occasionally present on the margins of the forest although will be outcompeted by natural regeneration of native forest species over time.



Five Oaks Farm

At a glance

TRC Reference: BD/9788

Ecological District: North Taranaki

Land Tenure: Private

Area(ha): 6.15

GPS: 1720907X & 5666420Y
1720291X & 5666565Y
1720832X & 5666932Y

Habitat: Forest Remnant

Bioclimatic Zone: Lowland

Ecosystem Type: MF7.3: Tawa, pukatea, podocarp forest

LENZ: F7.2a At risk

National: Priority 1 – Threatened Land Environment

Priority 4 – Threatened Species

Regional: Key Native Ecosystem

Regional Ecosystem Loss: At risk 20-30% left

Protection Status: QEII Covenant

Catchment: Waitara (395)

General Description

Five Oaks Farm is located 16km east of Inglewood in the North Taranaki Ecological District and Waitara catchment. Four separate fragments of native forest make up approximately 7ha collectively, five of which is already protected by a QEII Trust covenant. The site provides good connectivity to Key Native Ecosystems in this area, including the larger Taramoukou Conservation Area and Punanga KNEs, and smaller Oapui Forestry Sanctuary, Junction KNE and Tersana KNE and other QEII covenants on the adjacent property.

Ecological Features

Flora

The canopy of the existing QEII areas are dominated by tawa, pukatea, miro, rimu and kahikatea, punctuated by rewarewa. The subcanopy and understory is made up of pigeonwood, toropapa, kawakawa, kaikomako, mahoe, and rewarewa with coprosmas, NZ gloxinia and small leaved milk tree also abundant. Notable species include ramarama, three species of threatened rata and poroporo.

The 'kahikatea block' is dominated by kahikatea, with tawa and white maire present. The understory is dominated by narrow leaved mahoe, tawa, rewarewa and kanono.

Fauna

Five Oaks Farm is home to forest birds including the New Zealand pigeon/kereru, grey warbler/riroriro, fantail/pīwakawaka, tui, shining cuckoo/pipiwharauroa and morepork/ruru. The site may also contain notable species such as bush falcon/karearea, native bats/pekapeka, native fish, reptiles and invertebrates.

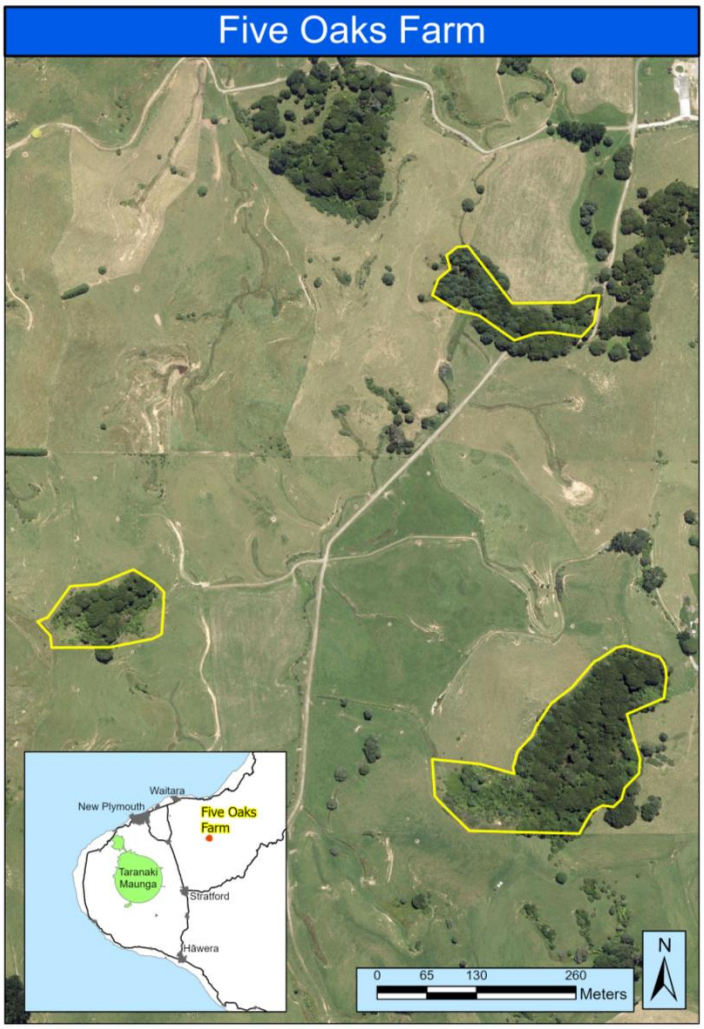
Ecological Values

Ecological Context - Medium	Close to and interconnected with other small forest remnants and riparian vegetation in the vicinity. Protection and enhancement of uncovenanted remnants would be valuable.
Rarity and Distinctiveness - Medium	Provides habitat for and also likely to contain other notable fauna species including reptiles and invertebrates. Also contains three rata species and ramarama which are listed as 'Threatened' flora due to potential vulnerability to myrtle rust. The 'Threatened' poroporo is also present.

Representativeness - Medium	Contains indigenous vegetation in an area classified as an 'At Risk' (F7.2a) LENZ environment. Less than 30% indigenous vegetation remains in these environments. Native biodiversity in these areas is greatly depleted and under threat from continued habitat fragmentation. Is a remnant of an 'At Risk' ecosystem type (MF7-3).
Sustainability - Positive	In good vegetative condition although unfenced sections would improve dramatically if stock/grazing animals were fully excluded from/controlled from/over the entire site.

Other Management Issues

Habitat Modification - Low	There are no immediate threats to the site.
Herbivores - Medium	Incursion to the sites by sheep in low numbers. One site is unfenced and currently grazed by sheep and cattle. Goats and deer have not been sighted on the property.
Predators - Medium	Predators including rodents, mustelids, possums, feral cats and hedgehogs will be having an impact on native species at the site.
Weeds - Medium	Weeds are relatively common on the forest edge (particularly the larger site). Control of these would reduce future threats of internal infestations to the site.



Spencer's Wetland

At a glance

TRC Reference: BD/9786
Ecological District: Egmont
Land Tenure: Private
Area(ha): 1.4
GPS: 1696531X & 5569658Y

Habitat: Wetland

Bioclimatic Zone: Lowland
Ecosystem Type: WL19: Raupo reedland

LENZ: F5.2b Acutely threatened
National: Priority 1 – Threatened Land Environment
Regional: Key Native Ecosystem

Protection Status: Local Government
QEII Covenant

Catchment: Waiwhakaiho (392)

General Description

Spencer's Wetland was previously a constructed pond that has gradually filled with sediment which has led to the growth of of typical swamp vegetation such as raupo, flax, sedges and rushes. Willow is becoming dominant within the wetland and weeds such as blackberry and Himalayan honeysuckle have also begun invading the site. Spencer's Wetland is surrounded by pine forestry on one side and connects to Lake Mangamahoe Scenic Reserve and is approximately 1.5km from Meeting of the Waters Scenic Reserve.

Ecological Features

Flora

Native wetland vegetation at this site includes raupo, sedges, rushes and flax. Surrounding the pond and wetland, native tree, shrub and fern species include mahoe, hangehange, shining karamu, kiokio and mamaku.

Fauna

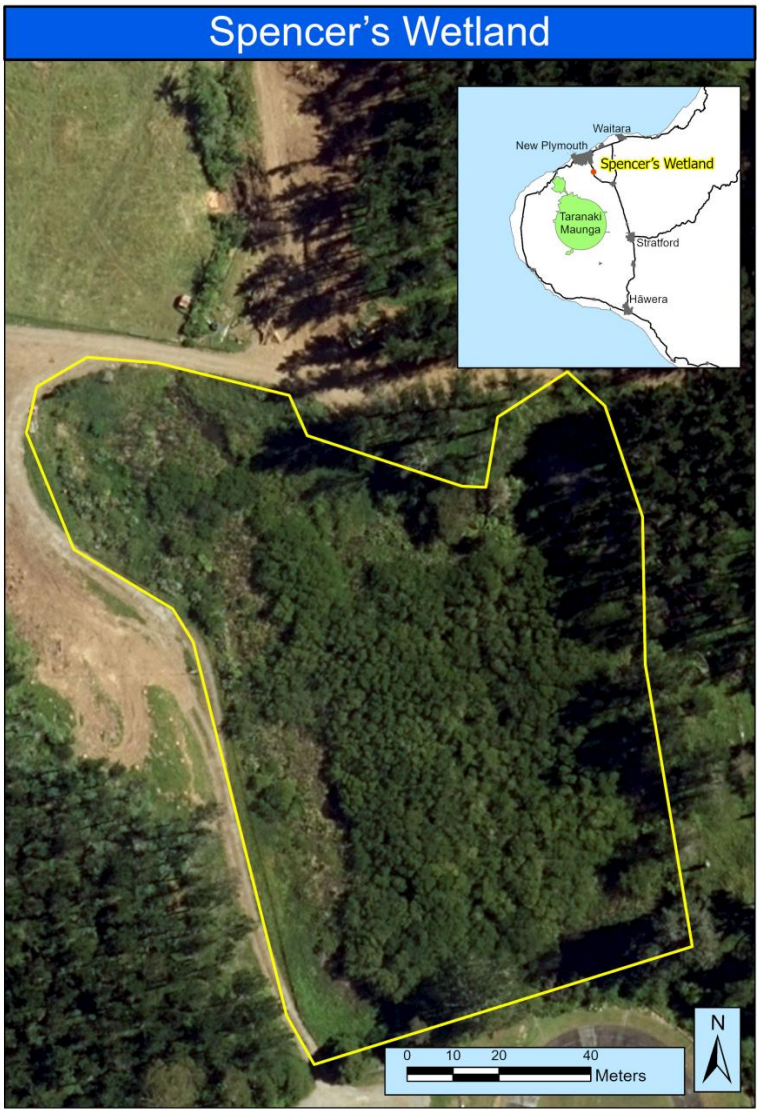
This site provides habitat for native wetland and terrestrial bird species including pukeko, kotare and tui.

Ecological Values

Representativeness - Medium	Contains indigenous vegetation in an area classified as an At Risk LENZ environment. Less than 30% indigenous vegetation remains in these environments. Native biodiversity in these areas is greatly depleted and under threat from continued habitat fragmentation.
Sustainability - Positive	The size and condition of this site ensure key ecological processes will continue to function. Under appropriate management, this site will remain resilient to existing or potential threats.
Rarity and Distinctiveness - Low	Likely to contain notable fauna species including fish, reptiles and invertebrates.
Ecological Context - Medium	Close to and interconnected with other small forest remnants and riparian vegetation in vicinity

Other Management Issues

Habitat Modification - Medium	The site is fully fenced and protected with a QEII conservation covenant. There is no immediate risk of habitat modification.
Herbivores - Low	The site is fully fenced and has sustained and effective possum, rabbit and hare control.
Predators - Medium	Predators including rodents, mustelids, possums, feral cats and hedgehogs will be having an impact on native species at the site.
Weeds - High	Invasive weeds, particularly willow, are a current threat to the site. Other weed species including wooly nightshade, blackberry and Himalayan honeysuckle are also present and have the potential to impact on the health of this site.



Whenuariki Bush

At a glance

TRC Reference: BD/7050

Ecological District: Egmont

Land Tenure: Private

Area(ha): 2.6

GPS: 1679852X & 5669257Y

Habitat: Forest Remnant

Bioclimatic Zone: Semi-Coastal

Ecosystem Type: WF13: Tawa, kohekohe, rewarewa, hinau, podocarp forest

LENZ: F5.2b Acutely threatened

National: Priority 1 – Threatened Land Environment

Regional: Potential KNE

Regional Ecosystem Loss: Chronically threatened 10-20% left

Protection Status: QEII Covenant

Catchment: Whenuariki (896)

General Description

Whenuariki Bush consists of two QEII covenants which contain small patches of remnant semi-coastal forest adjacent to the Whenuariki stream near Oakura in the Egmont Ecological District. The covenant covers 2.6ha and contains remnants of WF13 Tawa, kohekohe, rewarewa, hinau, podocarp forest which are supplemented and connected by a well-established riparian corridor with a closed canopy and a developing understory. Grey-faced petrels are known to occur in the immediate surroundings of the KNE and this site would provide suitable habitat for these birds. The site lies in close proximity to other Key Native Ecosystems in the area, including Waimoku Wetland and Matekai Park.

Ecological Features

Flora

The forest remnants have a canopy largely dominated by karaka but includes other species such as Puriri and Tawa. Underneath this canopy is an understory of Mahoe, Pigeonwood, Kawakawa and a range of fern species. A range of tree species are present in the planted riparian areas including Kohuhu, Manuka, Tarata and Kowhai as well as large podocarps including Totara and Rimu. Species not native to the area including Kauri and Pohutukawa are also present. The plantings are over 30 years old and are showing signs of forest ecosystem processes such as recruitment of a native understory. The nearby Kaitake range provides a native seed source which will drive the regeneration/succession of this habitat.

Fauna

Native birds present include the Kereru, Tui, Silvereye, Grey Warbler, Fantail, Kingfisher and Morepork. Other native birds are likely present or seasonally use the forest remnant such as the bellbird and shining cuckoo. Grey-faced petrels have been found to be nesting in the general area and could potentially return to nest in the site.

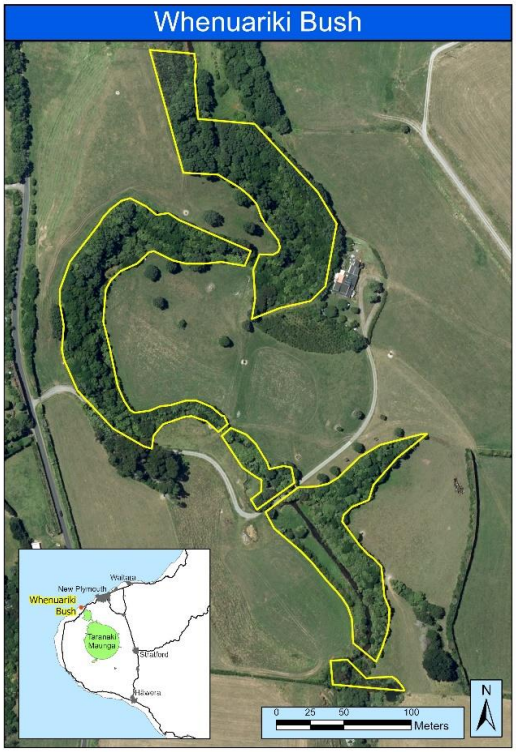
Ecological Values

Sustainability - Positive	Key ecological processes still influence the site and with appropriate management, it can remain resilient to existing or potential threats. The site is legally protected with a QEII covenant.
Rarity and Distinctiveness - Low	Threatened species found at the site have been planted and are not naturally occurring, including species such as Kauri, Pohutukawa and Manuka. Large, old Puriri are present, which if naturally occurring could be amongst the southern-most naturally occurring specimens of this species on the west coast.

Representativeness - High	The site contains remnants of 'Chronically threatened' WF13 - Tawa, Kohekohe, Rewarewa, Hinau, podocarp forest, of which only 16% remains in Taranaki. This forest also occurs on an 'Acutely threatened' LENZ land environment, where only 5.2% of the land remains covered in indigenous vegetation.
Ecological context - High	The site provides good quality riparian habitat and connects directly to a series of coastal ecosystems including forest/scrub, dunes, sandy beach and marine habitat. It also lies in close proximity to the Kaitake range with which it is indirectly connected through a series of planted riparian margins and small habitat fragments.

Other Management Issues

Herbivores - Low	The site is fully fenced, stock proof and protected with a QEII covenant. Possums are not currently present.
Predators - Medium	Predators including rodents, mustelids, feral cats and hedgehogs will be having an impact on native species at the site.
Rural Predator Free signed up: Yes	The landowners have one TPFT trap and are within the Kaitake Zero Possum block.
Habitat Modification - Medium	The site is fully fenced and protected with a QEII conservation covenant. There is no immediate risk of habitat modification. The remnant vegetation is largely unmodified, however the revegetated areas are not representative of the original ecosystem type and so can be considered to be highly modified.
Weeds - Medium	A number of weeds are present including climbing asparagus and great bindweed. Other weeds are present and managed to low levels including woolly nightshade, kahili ginger and tradescantia.
Possum Self-help	The property is within the Predator-Free Kaitake Zero Possum block.



Waokena

At a glance

TRC Reference: BD/9787

Ecological District: Egmont

Land Tenure: Private

Area(ha): 0.6

GPS: 1712342X & 5612184Y

Habitat: Coastal/Wetland

Bioclimatic Zone: Coastal

Ecosystem Type: DN2: Spinifex, pingao grassland/ sedgeland

Wetland mosaic

LENZ: F5.2c Acutely threatened

National: Priority 2 – Sand Dunes and Wetlands

Priority 1 – Threatened Land Environment

Regional: Key Native Ecosystem

Regional Ecosystem Loss: At risk 20-30% left

Chronically threatened 10-20% left

Acutely Threatened <10% left

Catchment: Unnamed catchment 14 (814)

Unnamed catchment 15 (815)

General Description

Waokena consists of a series of small wetlands, wetlands margins and a dune system totalling 10.6ha located approximately 4km south-east of Hawera. Significant areas of wetland vegetation remain and riparian planting has been undertaken to buffer these areas. 'Wetland mosaic' ecosystems such as these are 'Acutely Threatened' in Taranaki with less than 10% of their original extent remaining, and here are also situated within an 'Acutely Threatened' land environment (LENZ F5.2c). Remnants such as this provide important habitat for rare and threatened species and provide an important link between the coast and land for coastal bird life.

Ecological Features

Flora

Wetland vegetation at this site largely consists of raupō reedland, Carex sedgeland, pockets of flax and a range of aquatic herbs. Willow and other weed species are present in places. Buffer and dryland vegetation features a range of planted and remnant natives typical of coastal sites (e.g. mahoe, taupata, karamu) and includes a number of non-native species including karo and gorse. The dune system features some large mats of small-leaved pohuehue but is dominated by exotic grasses and shrubs.

Fauna

A range of native bird species have been recorded including kāhu/NZ harrier hawk, karoro/black-backed gull, riroriro/grey warbler, kāruhiruhi/pied shag, pūkeko and warou/swallows. Exotic species include magpies, mallard ducks, blackbirds, skylarks, house sparrows, songthrushes and yellowhammers. Lizards are likely to be present, particularly in the dune system, and may include notable species.

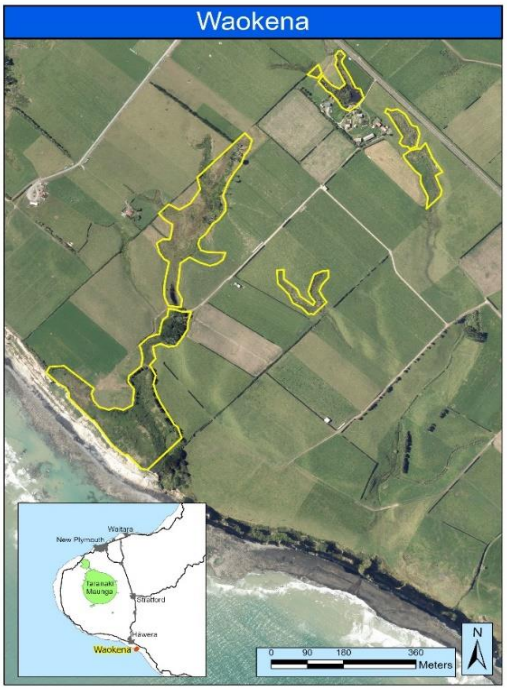
Ecological Values

Ecological context - High	Good quality wetlands such as these may provide seasonal foraging habitat for threatened native water fowl including matuku-hūrepo/Australasian bittern which are found at the nearby Nowells Lakes.
Rarity and Distinctiveness - Low	To date, no naturally occurring threatened or regionally distinctive species have been identified although they may be present or use the site on a seasonal basis.

Representativeness - High	Contains indigenous vegetation on an 'Acutely Threatened' land environment (LENZ F5.2c). The wetland is also a good example of an ecosystem type which is considered 'Acutely Threatened' in Taranaki ('Wetland mosaic'). Wetlands and sand dunes are high priority ecosystems for protecting, both regionally and nationally.
Sustainability - Positive	Wetlands - Key ecological processes still influence the site. Under appropriate management, the site will remain resilient to existing or potential threats.
Sustainability - Negative	Dunes - The site will improve dramatically with appropriate management, especially invasive weed control. However, without intervention, regeneration will be significantly altered and overall sustainability of this site will be poor.

Other Management Issues

Habitat Modification - High	Culverts are present which have artificially raised the water level in a number of the wetlands. Stock currently still have access to some areas and trampling and grazing is having an impact on native vegetation.
Herbivores - Medium	Fencing is present in places but not complete and browsing by stock is evident in unfenced areas. The dune system is vulnerable to rabbit browse.
Possum Self-help	The property falls within the Possum Self Help Area. Regular control is undertaken by the landowners and contractors.
Predators - Medium	Predators including rodents, mustelids, possums, feral cats and hedgehogs will be having an impact on native species at the site.
Rural Predator Free signed up: Yes	
Weeds - High	Invasive weeds such as *Glyceria maxima*, blackberry, kikuyu and willow are present in the wetlands and will be impacting the species composition and function of these areas. The dune system is largely dominated by exotic species including blackberry, boxthorn and gorse which will have an impact on the presence of native species and on natural dune processes.



Wildlife Properties

At a glance

TRC Reference: BD/9780

Ecological District: Matemateaonga

Land Tenure: Private

Area(ha): 1752

GPS: 1742448X & 5632011Y

Habitat: Forest Remnant

Bioclimatic Zone: Lowland

Ecosystem Type: MF21: Tawa, kamahi, rimu, northern rata , black beech forest

MF7.3: Tawa, pukatea, podocarp forest

LENZ: F5.3b Less reduced, better protected

F7.2a At risk

National: Priority 4 – Threatened Species

Regional: Key Native Ecosystem

Regional Ecosystem Loss: At risk 20-30% left

Less reduced >50% left

Catchment: Whenuakura (342)

General Description

Wildlife Properties covers 1752ha of forest remnants and regenerating mānuka scrub in the headwaters of the Whenuakura catchment. The site lies within the Matemateaonga ecological district. Forest remnants on the property are examples of MF21, Tawa, kāmahi, rimu, northern rātā, black beech forest which has retained many emergent podocarps. These remnants are continuous with vast DOC estate extending into the Waitotara conservation area and provide connectivity to KNEs including Omoana Bush, Forest and Bees Takou Bush and the Tarere Conservation Area. The property is managed as a hunting safari park, with a number of game species present including feral cattle.

Ecological Features

Flora

The property is a mosaic of regenerating mānuka, tree fern and kāmahi scrub, mature black beech ridgelines and remnant mixed podocarp forest. Impressive podocarp canopies remain in places which include rimu, mataī, kahikatea and tōtara. Palatable species are limited throughout and the understory is bare in places. Where present, the understory is comprised of shrubs such as soft and prickly minigmingi, various species of *Coprosma* and a range of ferns. Climbers and epiphytes are common throughout, including kahakaha, clematis species and climbing rātā.

Fauna

A range of rare and threatened fauna are present at the site, including whio/blue duck, pekapeka/long-tailed bats, kārearea/NZ falcon and koekoeā/long-tailed cuckoo. Other notable species present include Western brown kiwi, toutouwai/NI robin and tuna/longfin eel. Many other forest birds are also present such as pīwakawaka/fantail, kererū/NZ pigeon, tauhou/silvereye and miromiro/tomtit.

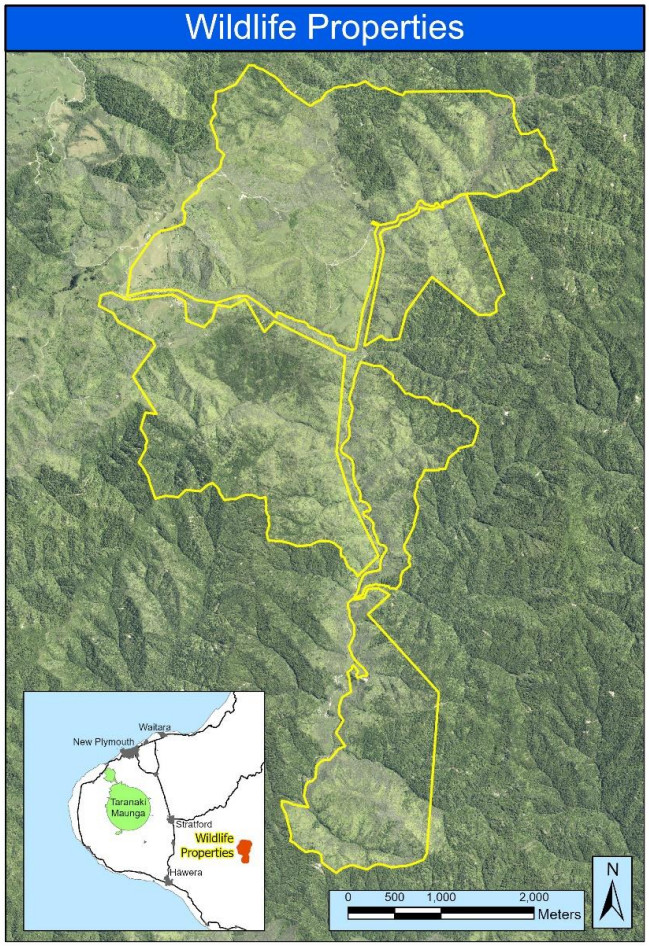
Ecological Values

Ecological context - High	The site is adjacent to and buffers large areas of forest including the Waitotara conservation area. Provides habitat for whio.
Rarity and Distinctiveness - High	Numerous whio/blue duck are present and are known to breed within the KNE. Pekapeka/long-tailed bats are also present in the site.
Representativeness - Low	Contains a small area of regenerating native vegetation on an 'At-Risk' F7.2a LENZ Environment. Small areas of 'At-Risk' MF7-3, Tawa, pukatea, podocarp forest are present.

Sustainability - Negative	The site will improve dramatically with appropriate management, especially exclusion or control of grazing and browsing animals. However, under current management, regeneration will be significantly altered and overall sustainability of this site will be poor.

Other Management Issues

Habitat Modification - High	The understorey has been extensively modified by grazing stock and game. Regeneration of the understorey will be greatly impacted under the current management approach.
Herbivores - High	Widespread browsing by possums, stock, goats and deer will be having a significant impact on the regeneration and sustainability of the site.
Predators - High	Rodents, mustelids, possums and feral cats are present. Threatened species at this site are highly sensitive to introduced predators.
Weeds - Low	A small number of exotic species are present which may affect ecosystem function, including willow, African clubmoss and pines.
Possum Self-help	The site is outside the current possum self-help program boundary although receives occasional possum control by the landowners. High possum numbers have the potential to impact on forest health.



Date: 3 September 2024

Subject: **Riparian Native Plant Scheme Surpasses Eight Million in Plant Sales**

Author: D Shearman, Land Services Manager

Approved by: D Harrison, Director - Operations

Document: 3300102

Purpose

1. The purpose of this memorandum is to update Council on progress with the riparian management programme which has resulted in over eight million plants sold to landowners through its native plant scheme.

Executive summary

2. Council adopted its riparian management implementation strategy in 1993 to address the adverse effects of diffuse source contaminants from overland runoff.
3. Currently, 3,053 plans have been prepared which collectively cover 18,069 kilometres of streambank and recommended 8,983 kilometres of new fencing and 7,706 kilometres of new planting.
4. To help encourage the implementation of planting, Council initiated its native plant scheme in 1996. The scheme operates on the basis of a tendering system whereby successful nurseries are awarded contracts a year in advance.
5. There has been significant progress with plan implementation since 1993, with 89.8% of riparian margins now fenced and 83.7% planted (or vegetated) where recommended.
6. To date, 7,131 kilometres of streambank have been fenced and 5,835 kilometres have been planted.
7. In total 8,142,487 native plants have now been sold at cost through Council's native plant scheme.

Recommendations

That Taranaki Regional Council:

a) receives the memorandum, Riparian Native Plant Scheme surpasses eight million in plant sales

b) notes the significant milestone of eight million plants provided through Council's Riparian native plant scheme.

Background

8. Council adopted its riparian management implementation strategy in 1993 to address the adverse effects of diffuse source contaminants from overland runoff. This has been delivered through Council's

voluntary riparian management programme which has focused on the preparation of customised plans for landholders.

9. Currently, 3,053 plans have been prepared which collectively cover 18,069 kilometres of streambank and recommended 8,983 kilometres of new fencing and 7,706 kilometres of new planting.
10. To help encourage the implementation of planting, Council initiated its native plant scheme in 1996. The scheme operates on the basis of a tendering system whereby successful nurseries are awarded contracts a year in advance, to grow and deliver native plants to Council's dispatch sites. Plants are secured at wholesale prices due to competition through the tendering process and bulk purchasing power. Plants are then on sold to farmers on a cost recovery basis.
11. The average purchase price from nurseries is only around $3.60 per plant, in comparison to $1.60 in 1996. This still represents good value to the farmers, compared with buying plants directly from a nursery themselves.
12. In 1996, 13 mainly local nurseries submitted tenders and six were awarded contracts to supply 15,655 native plants composed of 20 different species. Plants were dispatched to 42 farmers from Council premises by Land Management Officers. At its peak in 2021, Council tendered for and dispatched 985,239 native plants consisting of 35 species to 1,121 planholders. The ability to supply large numbers is predominantly due to two large commercial nurseries that are capable of large scale production, supplemented by local nurseries. However, the number of successful nurseries has remained between 6 and 10 as local nurseries come and go.
13. At its peak, Council dispatched 985,239 native plants through the scheme with the assistance of government funding through the Jobs for Nature Programme following Covid-19. Farmers purchased plants at $1 each, paid for the construction of their own fences while the scheme paid for the cost of contract planters for planting. Apart from two further years between 2018 and 2020 (with some assistance from the Ministry for the Environment's Freshwater Improvement Fund where 325,858 native plants were subsidized by 50%) farmers have paid for and planted the plants themselves.
14. Increasing plant demand over time has resulted in Council requiring more - and larger - dispatch sites that are capable of handling around 100,000 plants each. Over the last 10 years, five sites have been regularly used at Lepperton, Stratford, Hawera, Opunake and Pungarehu. These will reduce to Stratford and Hawera as the plant scheme transitions into an advanced order only regime.

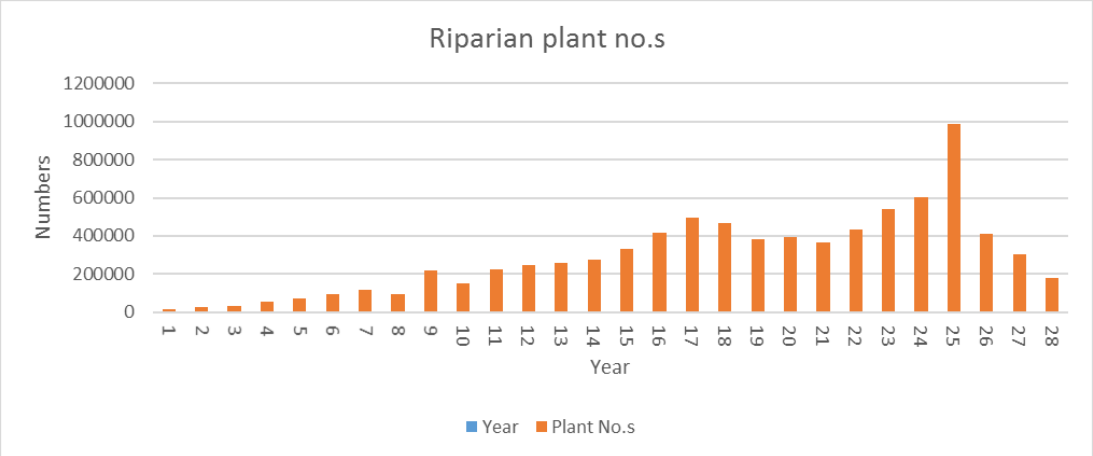


Figure 1 Riparian plant numbers over time

15. In total 8,142,487 native plants have now been sold at cost through Council's native plant scheme. This is a significant achievement under a voluntary approach and Taranaki is well ahead of the rest of the country with both plan preparation and implementation.

Discussion

16. There has been impressive progress with plan implementation since 1993, with 89.8% of riparian margins now fenced and 83.7% planted (or vegetated) where recommended. To date, 7,131 kilometres of streambank have been fenced and 5,835 kilometres have been planted. Eight million one hundred and forty two thousand, four hundred and eighty seven native plants have now been sold at cost through Council's native plant scheme. This is a significant achievement under a voluntary approach and Taranaki is well ahead of the rest of the country with both plan preparation and implementation.

Financial considerations—LTP/Annual Plan

17. This memorandum and the associated information is consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

18. This memorandum and the associated information is consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

19. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.

Community considerations

20. This memorandum and the associated information has considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

21. This memorandum and the associated information complies with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

Document 3299009: Presentation - Eight Million Trees

8 Million plants and counting

Don Shearman Land Services Manager

Taranaki Regional Council

Working with people | caring for Taranaki

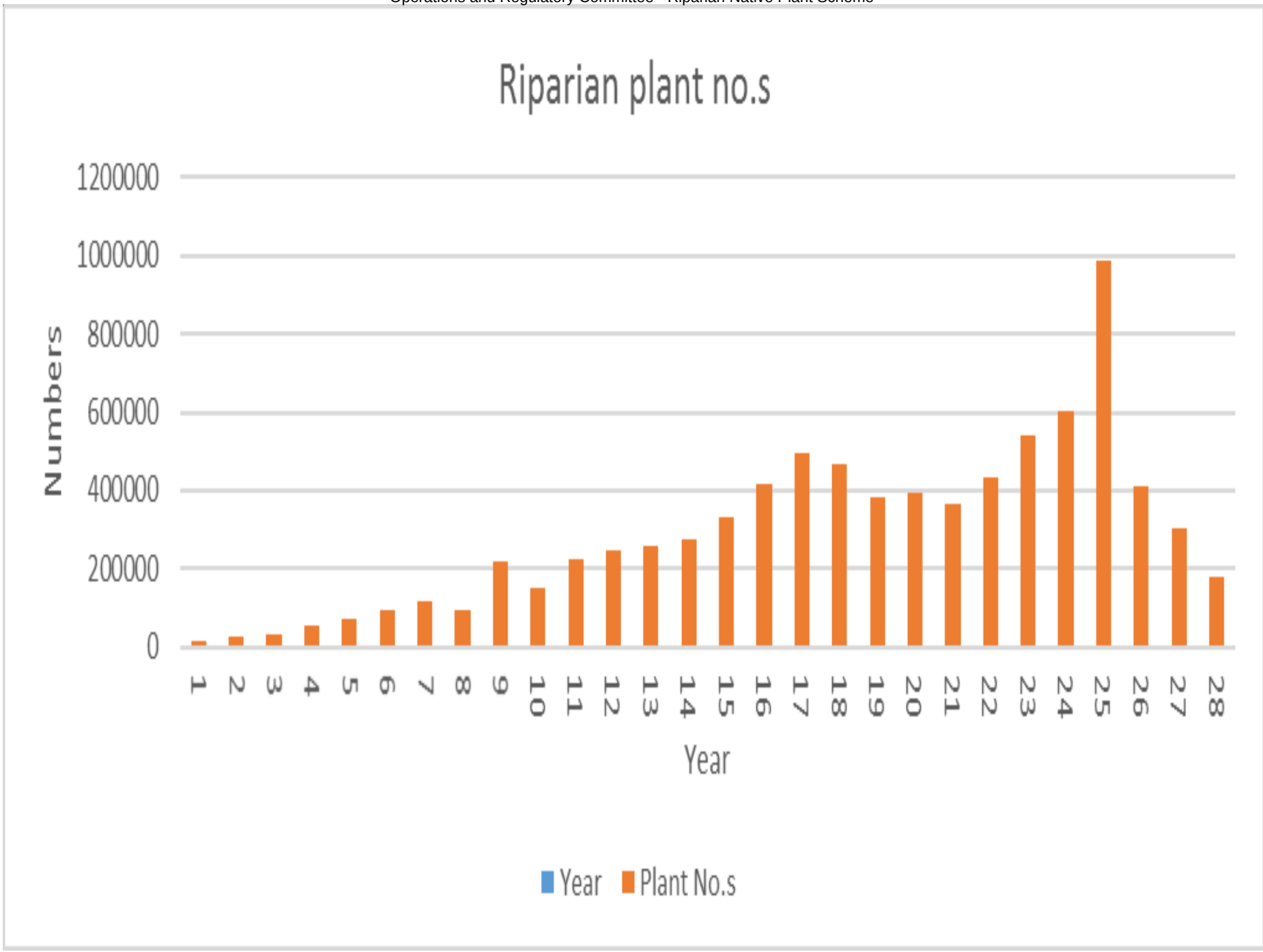
Taranaki Regional Council

Riparian implementation Progress

- Started with riparian strategy in 1993
- 3,053 riparian plans prepared covering 18,069 kms
- Rec: 8,983 kms of fencing & 7,706 kms planting
- Done: 7,131 kms fence & **5,835 kms planting**
- 89.8% fenced & 83.7% vegetated
- 1,800 km to fence and 2,300 km to plant

Native Plant Scheme

- Policy to help make planting more affordable
- Tender system and contracts to nurseries
- Wholesale rates and **not subsidised**
- Supporting local nurseries and others
- Exceeding local capacity as numbers increase
- Expansion from 1 site and 15,655 plants to 5 sites and nearly 1 million plants


Riparian plant no.s
1200000
1000000
800000
600000
400000
200000
0
Numbers
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
Year
Year
Plant No.s

Pungarehu

Opunake

Lepperton

A

Taranaki Regional Council

Riparian audit summary

Riparian Plan ID: 904[redacted]

Audit date: 18/03/2024

Overall grade: Temporary Pass

Monitoring regime or re-inspection due: 1YR

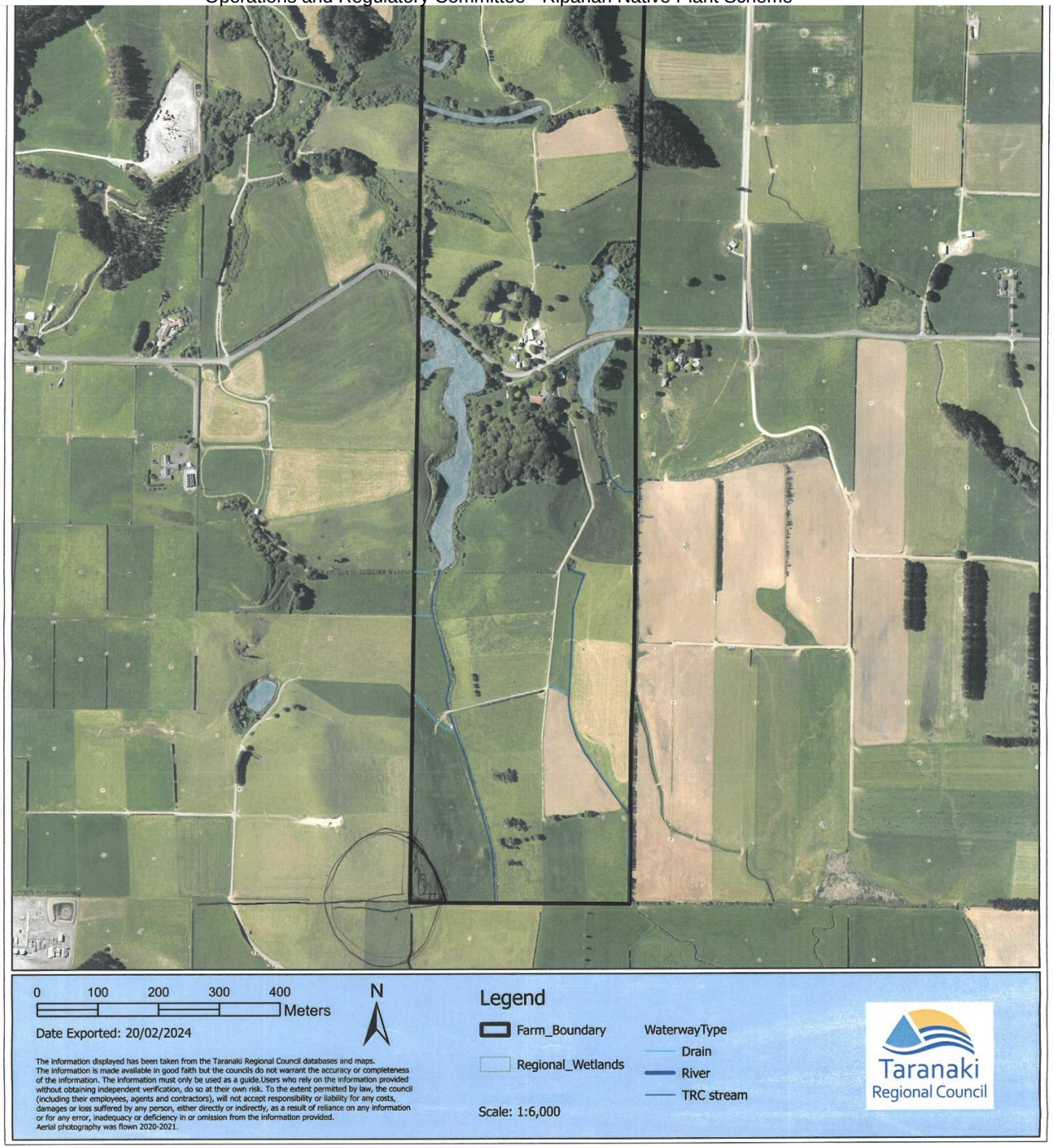
Audit officer: [redacted]

Contact your Land Management Officer on 06 765 7127 for advice.

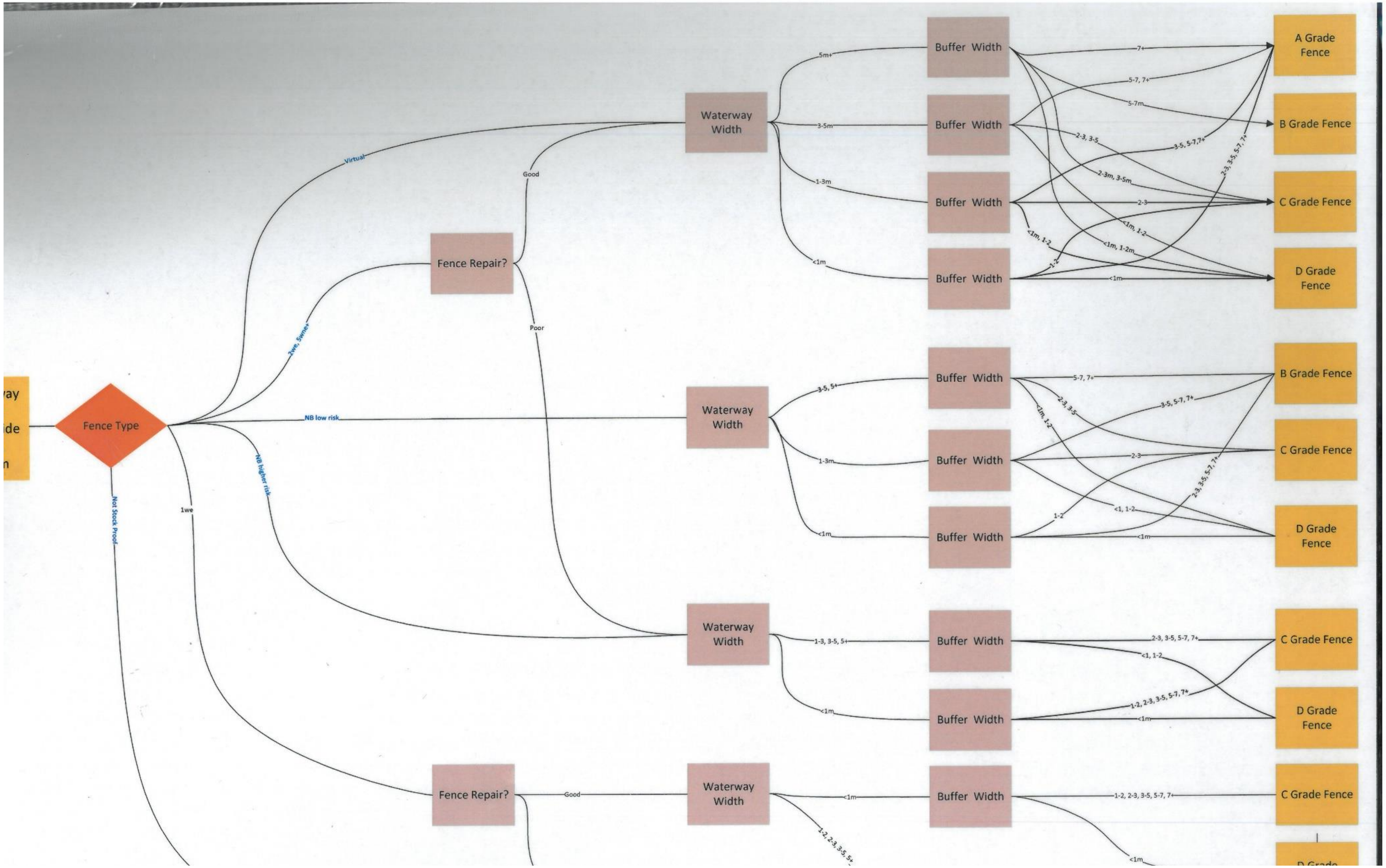
The following table provides a summary of your audit, it displays all pass grades, temporary pass and fail grades and their associated comments. Due dates for each action will be added when the Riparian Management Programme becomes regulated. Please also refer to the accompanying map that displays each section and the colour coded grade.

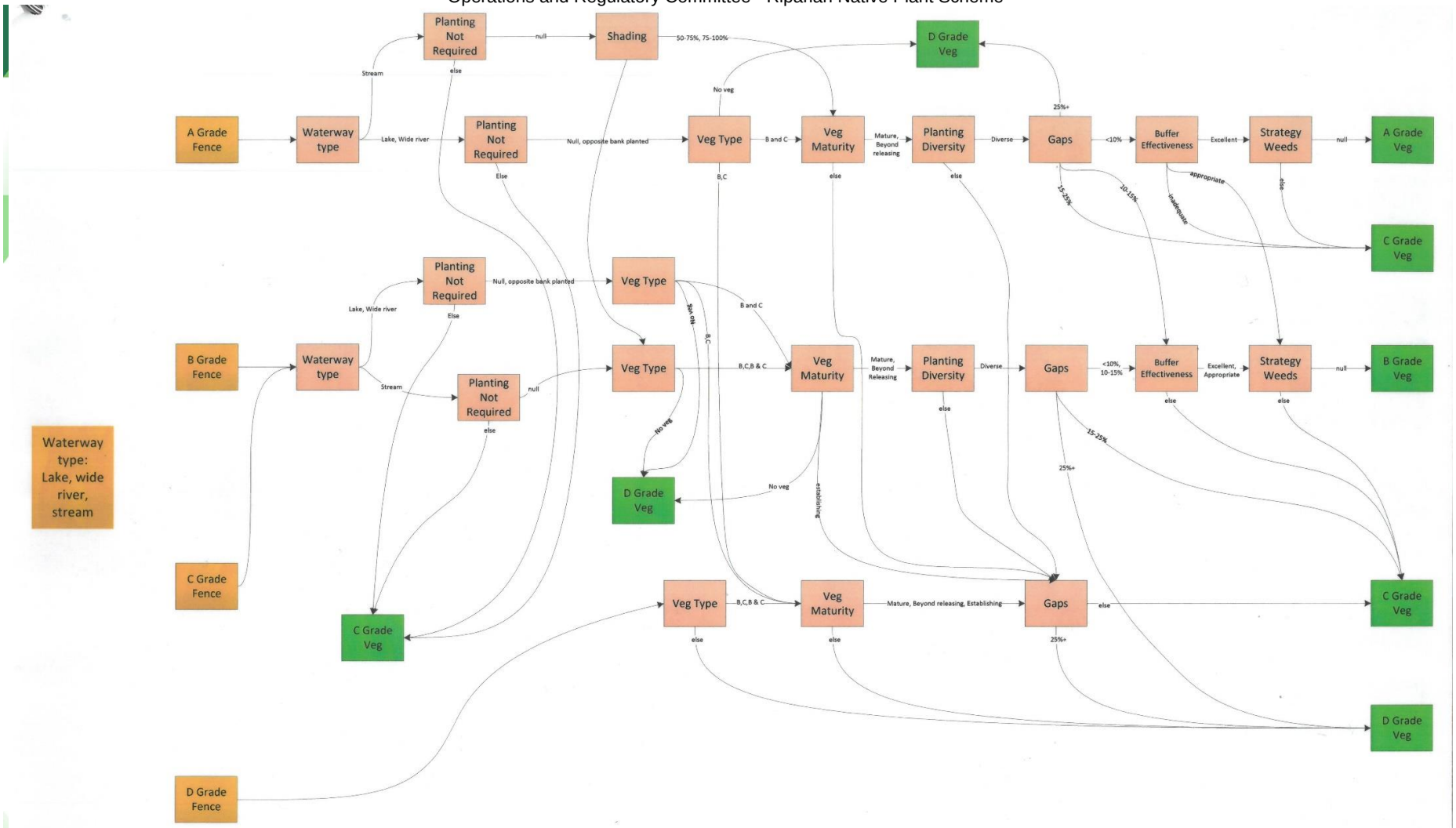
Section	Waterway type	Fence grade	Due date	Veg grade	Due date	Comments/ Action required	Overall grade
1	Wide River	C		B			C
2	Stream	C		C			C
3	Stream	D		C		Permanent fencing required to maintain minimum 1m buffer	D
4	Stream	D		D		Permanent fencing required to maintain minimum 1m buffer; Planting required, Carex recommended.	D
5	Stream	D		D		Permanent fencing required to maintain minimum 1m buffer; Planting Carex recommended.	D
6	Stream	C		B			C
7	Stream	D		C		Permanent fencing required to maintain minimum 1m buffer.	D
8	Stream	C		C			C
9	Stream	A		C			C
10	Stream	C		C			C
11	Stream	A		B			B
12	Stream	A		A			A
13	Stream	A		B			B

Taranaki Regional Council Working


0 100 200 300 400
Meters
N
Date Exported: 20/02/2024
The information displayed has been taken from the Taranaki Regional Council databases and maps. The information is made available in good faith but the councils do not warrant the accuracy or completeness of the information. The information must only be used as a guide.Users who rely on the information provided without obtaining independent verification, do so at their own risk. To the extent permitted by law, the council (including their employees, agents and contractors), will not accept responsibility or liability for any costs, damages or loss suffered by any person, either directly or indirectly, as a result of reliance on any information or for any error, inadequacy or deficiency in or omission from the information provided.
Aerial photography was flown 2020-2021.
Legend
Farm_Boundary
Regional_Wetlands
WaterwayType
Drain
River
TRC stream
Scale: 1:6,000
Taranaki Regional Council

Original Date	Existing Fence (m)	Completed Fence (m)	Proposed Fence (m)	Streambank (m)
20/02/2006	2467	4078	415	6959
Date Map Created	Existing Vegetation (m)	Completed Planting (m)	Proposed Planting (m)	Streambank Requiring Vegetation (m)
26/02/2024	406	4459	0	4865


Fence Type
Virtual
2we, 5wire
NB low risk
NB higher risk
1we
Not Stock Proof
Fence Repair?
Good
Poor
Waterway Width
5m+
3-5m
1-3m
<1m
3-5, 5+
1-3, 3-5, 5+
Buffer Width
7+
5-7, 7+
5-7m
2-3, 3-5
3-5, 5-7,7+
2-3m, 3-5m
2-3
<1m, 1-2
<1m, 1-2m
1-2
2-3, 3-5, 5-7, 7+
<1, 1-2
1-2, 2-3, 3-5, 5-7, 7+
A Grade Fence
B Grade Fence
C Grade Fence
D Grade Fence


A Grade Fence
Waterway type
Stream
Lake, Wide river
Planting Not Required
null
else
Shading
50-75%, 75-100%
D Grade Veg
No veg
Planting Not Required
Null, opposite bank planted
Else
Veg Type
B and C
B,C
Veg Maturity
Mature, Beyond releasing
else
Planting Diversity
Diverse
else
Gaps
25%+
<10%
10-15%
15-25%
Buffer Effectiveness
Excellent
appropriate
inadequate
else
Strategy Weeds
null
else
A Grade Veg
C Grade Veg
B Grade Fence
Waterway type
Lake, Wide river
Stream
Planting Not Required
Null, opposite bank planted
Else
null
else
Veg Type
B and C
B,C
No veg
B,C,B & C
Veg Maturity
Mature, Beyond Releasing
Planting Diversity
Diverse
else
Gaps
<10%, 10-15%
15-25%
25%+
Buffer Effectiveness
Excellent, Appropriate
else
Strategy Weeds
else
null
B Grade Veg
Waterway type: Lake, wide river, stream
C Grade Fence
D Grade Veg
No veg
Inadequate
C Grade Veg
Veg Type
B,C,B & C
Veg Maturity
Mature, Beyond releasing, Establishing
Gaps
else
25%+
else
else
C Grade Veg
D Grade Veg
D Grade Fence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11
16
15
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8
0
125
250
500
Meters
Audit Date: 6/02/2024
Scale: 1:6,000
N
Legend
Farm_Boundary
Waterways
Section Grade
A
B
C
D
Taranaki Regional Council

Riparian Audit Sections Photos

AuditSections_Photos

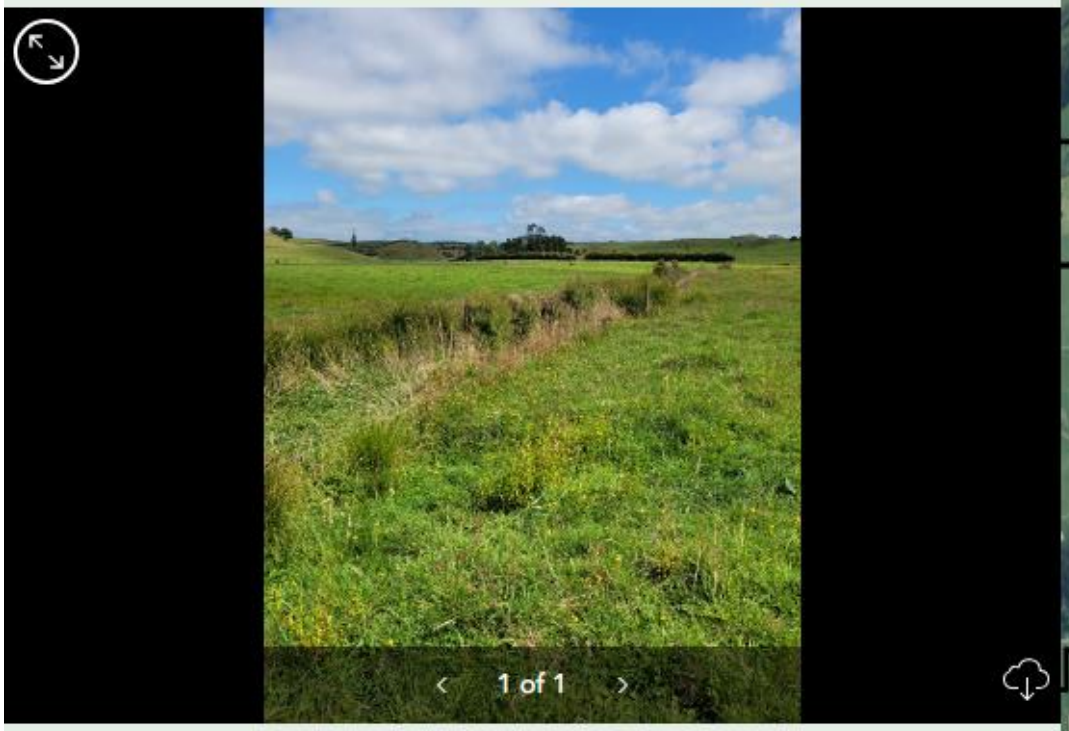


Photo Point

FARM_ID	90,300
Section_Num	5
Description	D

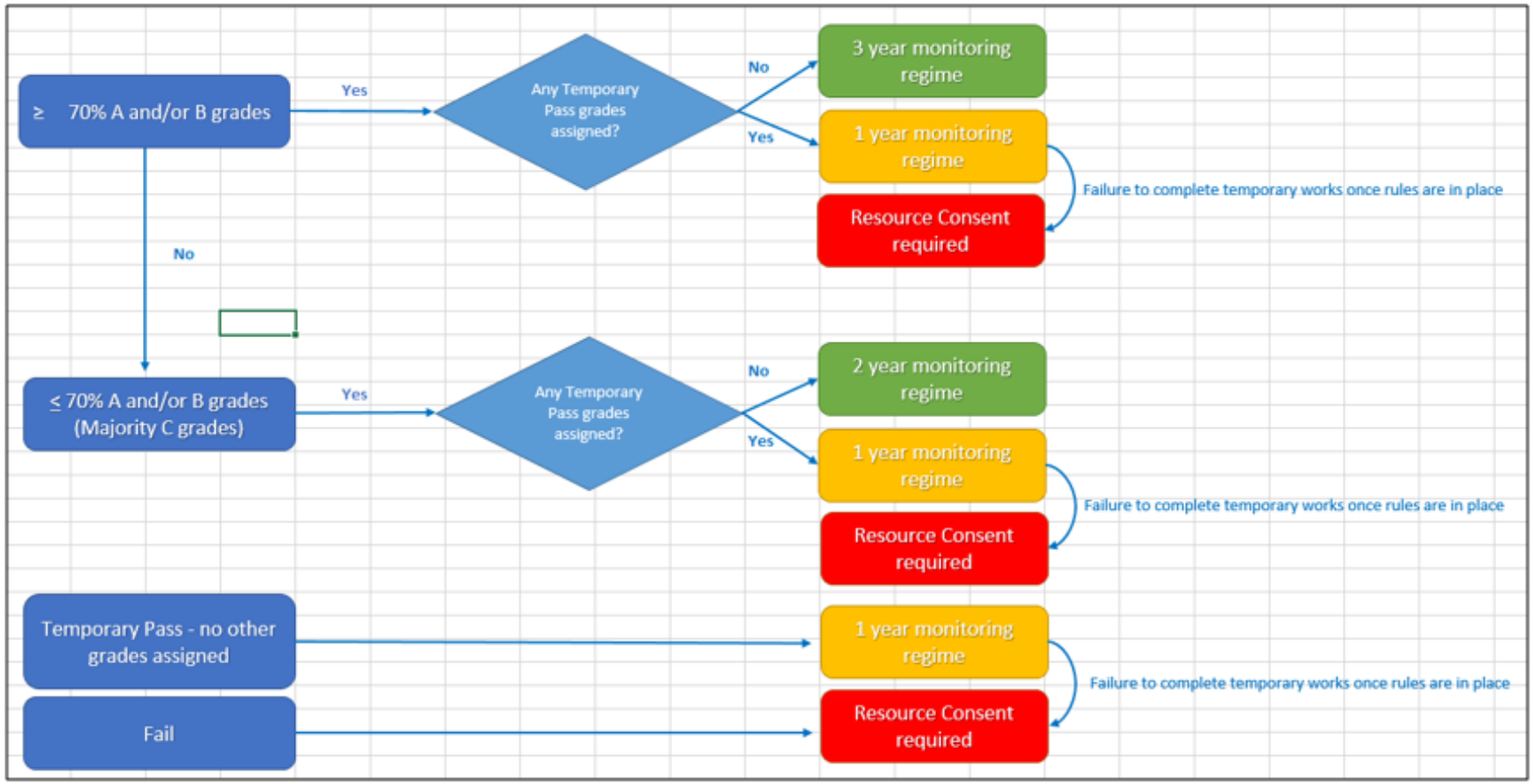
Last edited by SDEADMIN on 4/5/2024, 9:44 AM.

Riparian Auditing Field Guide

1. Work flow of auditing

Every farm will receive a first full audit and be pigeon holed into a monitoring regime (see Diagram 1 below). Based on the monitoring regime assigned that would set-up the work flow for the LMO under the Audit App platform (see Diagram 2).

Diagram 1: Assigning Monitoring Regimes based on Audit Grades - Refer to #2201190



Date: 3 September 2024

Subject: **Dow Paritūtū Preliminary Site Investigation**

Author: V McKay, Manager – Environmental Assurance

Approved by: AJ Matthews, Director - Environment Quality

Document: 3301608

Purpose

1. The purpose of this memorandum is to provide a summary of the recently completed Preliminary Site Investigation (PSI) report, on Dow's former agrichemical manufacturing site at Paritūtū, New Plymouth.

Executive summary

2. Tonkin and Taylor Ltd (T+T) has been engaged by Dow Chemical (NZ) Limited (Dow) to complete a site investigation and develop a remediation plan for the former agrichemical manufacturing site at Paritūtū, New Plymouth. An initial step in this investigation has been for T+T to undertake a preliminary site investigation (PSI) to determine what sort of contamination might be present and where it may be located within the site.
3. The PSI is a significant milestone and the first step to understanding the site history and the potential for contamination to be present. Information gathered during the PSI will help determine if further investigations (such as soil and groundwater) are required and inform possible remediation measures.
4. To complete the PSI, information was gathered from multiple sources including historical documentation and aerial photographs, public surveys and interviews, site walkovers and thorough engagement with mana whenua.
5. While numerous site investigations have been carried out at the site, T+T has identified data and information gaps which need to be addressed. Furthermore, as some contaminants break down over time, and additional contaminating incidents may have occurred since sampling was undertaken, the contamination levels identified in historical tests may not reflect the conditions onsite today.
6. The environmental setting of the Paritūtū site is complex and a sound understanding of the site's environmental setting is critical to identifying how potential contamination moves between soil and rock, surface water and groundwater. A preliminary conceptual site model (CSM) has been developed by T+T which describes the site's environmental setting and has identified that there is potential for contamination to exist in surface soils, underlying soils, and shallow and deep groundwater which may have the potential to affect human health, and/or the environment. At this stage we do not know what these impacts might be; this will be determined during the next phase of the investigation.
7. The next steps include developing a sampling and analysis plan (SAP) and undertaking a detailed site investigation (DSI) which will include soil and groundwater sampling to determine whether the

potential pathways identified in the conceptual site model pose an actual risk to people or the environment.

8. An independent peer review of the PSI has been undertaken by Beca on behalf of Taranaki Regional Council, New Plymouth District Council and mana whenua. In undertaking this review Beca considered guidance set out by the Ministry for the Environment (MfE) in regard to contaminated land site investigation and soil analysis, and reporting on contaminated sites. Beca found that the PSI has been undertaken in general accordance with these guidelines.

Recommendations

That Taranaki Regional Council:

a) receives the memorandum Dow Paritūtū Preliminary Site Investigation.

Background

9. The Dow Paritūtū site is located between Paritutu Road and Centennial Drive Spotswood, New Plymouth. The Paritūtū site was associated with agrichemical manufacturing operations between 1960 and 2021. Prior to this, a Māori horticultural settlement named Ruataku was located at the site in the 1840s, which provided food for the nearby pā of Otaka, Ngamotu and Te Mahoe, which were linked by a food track in the early-mid 1800s. This kainga was likely largely abandoned by the early 1900s.
10. Onsite infrastructure previously included multiple facilities for chemical manufacture and storage as well as an administration building, pilot plant, solid and liquid incinerators, maintenance/engineering areas, and research and development facilities. All production and packaging activities ceased by February 2021 and the demolition of most above-ground structures were completed by the close of 2022. Only a few structures remain on site, including the stormwater ponds and the unused Dangerous Goods Compound.
11. Management and ownership changed over the years of operation, with Dow assuming ownership of the site in February 2023 and committing to undertake investigation and remedial works, as necessary.
12. A more comprehensive history of the site has previously been provided to this Committee via the memorandum *Dow Paritūtū Site, New Plymouth* published in the 7 February 2023 Operations and Regulatory Committee meeting agenda.

Discussion

Information reviewed as part of the PSI

13. The accompanying report sets out in greater detail information reviewed as part of the PSI. This included but was not limited to:
    - New Plymouth District Council property files. These assisted in determining site ownership and management changes
    - Taranaki Regional Council records and pollution incidents. These provided records and reviews of previous site investigations
    - Historical aerial photographs, which helped to identify and locate key site features, changes to the site over time and surrounding land uses
    - Environmental regulations and planning documents related to ground contamination
    - Dow- and Corteva-supplied documents, helped to understand the products and chemicals manufactured, the historic site layout and building uses
    - Undertaking public surveys and interviews, to hear from community members and former employees with information relating to the site's history and any potentially contaminating

activities that may have occurred. Follow up interviews were subsequently undertaken with selected survey respondents and former site workers

- T+T also completed undertook a number of site walkovers and direct engagement with mana whenua.

Contamination sources

14. The PSI has identified that potentially contaminating Hazardous Activities and Industries List (HAIL) activities have been undertaken throughout the site's industrial history.
15. The Ministry for the Environment developed the HAIL as a compilation of activities and industries, which are considered likely to cause land contamination resulting from hazardous substance use, storage, or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination.
16. The Paritūtū site had a long history of agrichemical manufacturing and formulation. From the documented information reviewed, and validated inputs received via the community survey, the PSI identified that activities at the site have potentially resulted in soil and groundwater contamination. These include activities associated with chemical manufacture and other related operations, as well as the presence of workshops, substations, and other structures. There are a wide range of chemicals associated with these activities.
17. If the chemicals have been released to the environment via accidental spillage, or through loss of containment, their effects on the environment will vary based on their mobility, stability and toxicity in soil, groundwater, and vapour. Some may persist in the soil as they are not very mobile and do not break down easily. Others may have broken down a long time ago and therefore may no longer be present at the site.

Preliminary Conceptual Site Model

18. The information gathered was used to develop a preliminary conceptual site model (CSM). The CSM describes the site's environmental setting. It includes three main elements: **source(s)** of contamination, **pathway(s)** or means for people or the environment to be exposed to contaminants, and **receptor(s)**, which is the people, environment, or ecosystem which could be affected by a contaminant. The purpose of the CSM is to help identify if there is a risk to people or the environment from site contamination.
19. Some historical test results from the site were reviewed as part of the PSI. These early tests indicate that contamination of soil and water had occurred. However, these tests are limited in coverage and the quality of the sampling and testing is unclear in some cases. As some contaminants break down over time, and additional contaminating incidents may have occurred since the sampling, the contamination levels identified in historical tests may not reflect the conditions onsite today.
20. The potential fate and transport of contaminants, including the potential for contamination to have migrated offsite, will need to be a consideration of the DSI.
21. Industrial hygiene practices today have evolved considerably from those used at the site in the 1960s – 70s. From the 1980s onwards, and particularly when the Resource Management Act (RMA) came into force in 1991, industrial hygiene practices at the site were improved greatly and incident reporting, monitoring, and health and safety procedures were established.

Independent Peer Review

22. Taranaki Regional Council, in partnership with iwi/hapū and New Plymouth District Council, has engaged an independent peer reviewer to undertake an assessment of technical work carried out by Dow and T+T throughout the site remediation process. This includes assessing methodology and

reporting, and providing feedback and questions to make sure the process and reporting is in line with current MfE guidelines.

23. Following a robust procurement process, Beca was selected for this important role. Our peer reviewer is a suitably qualified and experienced practitioner (SQEP), holding a current Certified Environmental Practitioner (Site Contamination Specialist) accreditation, which is a regulatory requirement as part of the MfE guidelines on contaminated land management.
24. The relationship with Beca is managed directly by Taranaki Regional Council to maintain independence between Dow/T+T and Beca. However, costs associated with the peer review are recovered by the Council from Dow to ensure this burden does not fall to our rate-payers.

Conclusions

25. Although numerous contamination investigations have been carried out at the site historically, T+T has identified data gaps which need to be addressed as part of Dow's roadmap to remediation.
26. The next step is to complete a detailed site investigation, which will include soil and groundwater sampling to determine whether the potential pathways identified in the preliminary conceptual model pose an actual risk to people and the environment. While the details are yet to be defined, the DSI will likely include:
    - a geophysical survey to help identify subsurface geology and hydrogeology and possible buried sources of contamination
    - soil and groundwater sampling and investigations to address identified data gaps
    - working with mana whenua to protect the cultural and archaeological values of the site during field work
    - updating the conceptual site model with new data and inform planning for remediation and future use of the site.
27. The Paritūtū site remediation project team is currently developing a sampling and analysis plan (SAP) for the site. Once this has been reviewed by our independent peer reviewer, and the necessary resource consent has been granted, the team will begin further investigation on site.

Future use and development of the Paritūtū site

28. It is important to note that the final land use of the site has not been decided. As the land owner, Dow has indicated that this will be determined based on site remediation requirements, and in consultation with mana whenua and key stakeholders through the site investigation and remedial solution design process.
29. Remediation of the site will depend on a number of factors which may extend or reduce remediation time, including:
    - the extent of testing needed to develop a site-specific remediation plan
    - the remediation method used (and agreed with Council and mana whenua)
    - completion of appropriate consultation
    - securing relevant consents required for investigation and remediation work.

Financial considerations—LTP/Annual Plan

30. This memorandum and the associated recommendations are consistent with the Council's adopted Long-Term Plan and estimates. Any financial information included in this memorandum has been prepared in accordance with generally accepted accounting practice.

Policy considerations

31. This memorandum and the associated recommendations are consistent with the policy documents and positions adopted by this Council under various legislative frameworks including, but not restricted to, the Local Government Act 2002, the Resource Management Act 1991 and the Local Government Official Information and Meetings Act 1987.

Iwi considerations

32. This memorandum and the associated recommendations are consistent with the Council's policy for the development of Māori capacity to contribute to decision-making processes (schedule 10 of the Local Government Act 2002) as outlined in the adopted Long-Term Plan and/or Annual Plan. Similarly, iwi involvement in adopted work programmes has been recognised in the preparation of this memorandum.
33. Local hapū and iwi have an association with the Paritūtū site. It is a shared interest area between Te Atiawa and Taranaki Iwi: Ngāti Te Whiti Hapū of Te Atiawa, and Ngā Mahanga and Ngāti Tāiri, collectively and historically known as Ngā Mahanga Tāiri, falling under Te Kāhui o Taranaki, all have associations with the site. The site also sits within a broader cultural landscape of significance within the Taranaki Region.
34. Council staff have been working closely with hapū and iwi representatives to procure and undertake peer review of the T+T PSI.

Community considerations

35. This memorandum and the associated recommendations have considered the views of the community, interested and affected parties and those views have been recognised in the preparation of this memorandum.

Legal considerations

36. This memorandum and the associated recommendations comply with the appropriate statutory requirements imposed upon the Council.

Appendices/Attachments

Document 3301836: Preliminary Site Investigation: Paritūtū, New Plymouth https://www.trc.govt.nz/assets/Documents/Environment/Monitoring-Industry/Dow-Paritutu-reports/Dow-Paritutu_PSI_August-2024.pdf

Dow Paritūtū Preliminary Site Investigation summary document: https://paritutu-projectorbit.hub.arcgis.com/pages/psi-summary

Draft Remediation Roadmap: https://paritutu-projectorbit.hub.arcgis.com/

Sensitivity: General

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4340, New Zealand
T: +64 6 758 8191 // **F:** +64 6 758 9785
E: info@beca.com // www.beca.com

Taranaki Regional Council
Private Bag 713
Stratford 4352
Taranaki

31 July 2024

Attention: Victoria McKay, Environmental Assurance Manager

Dear Victoria,

Dow Final Preliminary Site Investigation Review

1 Introduction

Beca Limited (Beca) has been engaged by Taranaki Regional Council (TRC) to undertake technical review of a Preliminary Site Investigation (PSI) report prepared for 89 Paritūtū Road, Spotswood, New Plymouth (the Site) legally described as Lot 3 DP 8465, Lot 1 DP 9022, Lot 1 DP 9829, Lot 1 DP 10018 and Lot 2 DP 9829.

Draft versions of the PSI were initially reviewed with two rounds of feedback provided in April and June 2024. This review is of the following version:

- Preliminary Site Investigation, Paritūtū, New Plymouth prepared for Dow Chemical (NZ) Limited by Tonkin & Taylor Limited (T+T); Final Version 007 dated 11 July 2024 (the final PSI report).

The review has considered the requirements of Ministry for the Environment (MfE), 2021 Contaminated land management guidelines No. 1: Reporting on contaminated sites in New Zealand (CLMG 1) and No. 5: Site investigation and analysis of soils (CLMG 5).

2 Compliance with CLMG 1

Table 1 provides a checklist of required content from CLMG 1, noting it is specific to determining if the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (the NESCS) applies, and the PSI reviewed is considered to have a broader purpose.

Table 1: PSI Table of Contents (Source Appendix A of CLMG 1)

Content	Required	Required if relied on[1]	CLMG 5 section
1. Introduction			
• investigation objectives	☒		2.1
• site identification (site name, address, legal description; site boundaries; a map reference and geographic coordinates)	☒		3.3.1
• proposed site use		☐ 1	3.3.2
2. Site description			
• environmental setting		☒	3.3.3
• site layout	☒		3.3.4
• current site uses	☒		3.3.5
• surrounding land uses	☒		3.3.6
• geophysical surveys		☒ 2	5.1
• site inspection		☒	3.3.8
3. Historical site use			
• summary of site history gained from:	☒		3.3.7
– review of existing investigation reports		☒	
– review of council information		☒	
– review of aerial photographs		☒	
– interviews		☒	
– review of other historical Information		☒	
• preliminary sampling (if carried out)		☐ 3	3.3.9
– description (including diagram)			
– justification for sample location and analyte selection			
– results			
– comparison of results to guidelines			
4. Risk assessment			3.3.11
• evaluate the probability that pursuant to regulation 6 (3): – *an activity or industry described in the Hazardous Activities and Industries List (HAIL) is, or is not, being undertaken on the piece of land, or* – *an activity or industry described in the HAIL has, or has not, been undertaken on the piece of land, or* – *the likelihood of an activity or industry described in the HAIL being undertaken, or having been undertaken, on the piece of land*	☒		
• evaluate the probability that pursuant to regulation 6 (3): – *the likelihood that the soil is contaminated as a result of activity or industry occurring*	☒		2.2

[1] Any evidence relied upon to form an opinion/conclusion must be included in report, including sampling.

• description of the limitations of the data collected and the assumptions and uncertainties inherent in the data and models used	☒		7.3.1
5. Conclusions	☒		
6. Recommendations (if relevant to report purpose)		☒	
7. Report limitations	☒		2.1.2
8. Suitably qualified and experienced practitioner (SQEP) certification of report (refer to Appendix C of CLMG 1)	☒		1.2
9. References	☒		
Appendices: relevant supporting information	☒		

Supporting information	Required	Required if relied on
Figures		☒
Land titles		☐ 4
Historical site information relied upon (if not included in report body)	☒ 5	
Site photographs (if site inspection carried out)		☒
Other supporting information		☒
Statement of qualification as a SQEP	☒	

Footnotes:

1. The future site use has not yet been decided.

2. The geophysical investigation (ground penetrating radar [GPR]) completed in 2001 as part of TRC investigations has been added to Section 10.6 of the final PSI report, but GPR undertaken during the 2015 ERM site investigation is not mentioned. As a full geophysical survey (GPR and geomagnetic) of the site has recently been undertaken as the first stage of the site investigation, this is not considered a significant gap.

3. Preliminary sampling was not undertaken during the PSI. Sampling will occur during the Detailed Site Investigation (DSI).

4. Land titles were not relied upon in the PSI. Change of ownership is detailed in the PSI.

5. A summary of historical information is provided in the PSI, but the historical reports have not been appended. It is acknowledged that it is not practicable to append the historical reports given the number of them. The summary of historical reports includes the contaminants of concern considered in previous investigations but does not include the historical analytical soil and groundwater data. T+T commented that inclusion of specific concentrations recorded as part previous testing or monitoring is not considered relevant for the objective of the PSI report given that the report has identified that potentially contaminating HAIL activities have been undertaken. Additionally, T+T stated site characterisation (with respect to ground contamination) is proposed to be undertaken as part of the DSI and considered that the provision of historical soil testing results could be misleading, as may not be representative of the nature/extent of contamination at present.

It is agreed that historical results cannot be used to indicate current subsurface conditions at the site, but they are useful for determining what contaminants need to be considered in each part of the site. It is also acknowledged that provision of historical data without the context of assessment against current human health and environmental assessment criteria is problematic. It has been discussed with Dow and T+T, and historical results will be considered in preparing the Sample and Analysis Plan for the DSI.

Risk assessment including comparison of detected concentrations against human health and environmental assessment criteria will be part of the DSI process.

It is considered that the final PSI report has been undertaken in general accordance with the sections of CLMG 1 and CLMG 5 relevant to PSIs.

3 Closure

Taking into consideration the footnotes in Table 1, previous review comments have been closed out.

Please do not hesitate to contact the undersigned should you require clarification.

Yours sincerely

[redacted]

on behalf of

Beca Limited

[redacted]

[redacted]

This letter has been prepared by Beca Ltd (Beca) solely for Taranaki Regional Council (Client). Beca has been requested by the Client to provide a technical review of a Preliminary Site Investigation report prepared for 89 Paritūtū Road, New Plymouth (Scope). The contents of this letter may not be used by the Client for any purpose other than in accordance with the stated Scope.

This letter is confidential and is prepared solely for the Client. Beca accepts no liability to any other person for their use of or reliance on this letter, and any such use or reliance will be solely at their own risk.

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The contents of this letter are based upon our understanding and interpretation of current legislation and guidelines ("Standards") as consulting professionals, and should not be construed as legal opinions or advice. Unless special arrangements are made, this letter will not be updated to take account of subsequent changes to any such Standards.

This letter should be read in full, having regard to all stated assumptions, limitations and disclaimers.

REPORT

Tonkin+Taylor

Preliminary Site Investigation

Paritūtū, New Plymouth

Prepared for
Dow Chemical (NZ) Limited
Prepared by
Tonkin & Taylor Ltd
Date
July 2024
Job Number
0021795.0200 v007

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Distribution:

Dow Chemical (NZ) Limited	1 copy
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Glossary and Acronyms

The table below provides a list of the commonly used basic terms and acronyms within the report. For the chemicals and chemical acronyms, a list is provided in **Table 10.1**.

Term	Description
ACM	Asbestos containing material.
Andesite	An extrusive igneous rock intermediate in composition between rhyolite and basalt. Tends to form outcrop "domes" in geologic materials.
Chlorobenzenes	Aromatic organic compound often used for pesticide formulation.
CoC	Contaminant(s) of Concern.
DSI	Detailed Site Investigation.
Esterification	The chemical reaction which takes place during the formation of an ester.
Excipients	Inert or 'non-active' ingredient (usually serving as the delivery medium) in an agricultural product.
GMP	Groundwater management plan.
HAIL	Hazardous Activities and Industries List[1].
NESCS	National Environmental Standard for Assessing and Managing Contaminants in Soil.
NESF	National Environmental Standards for Freshwater.
NPDC	New Plymouth District Council.
Phenoxies	A common term for a grouping of selective herbicides within the phenoxy acetic/butyric and propionic acid herbicides groups.
PSI	Preliminary Site Investigation.
RMA	Resource Management Act.
Surfactant	Surface acting agent. Decreasing surface tension between a liquid and another liquid, solid or gas. Component of pesticides, or penetrants, which influence absorption, as well as independently used as cleaning agents, emulsifiers, and detergents.
TRC	Taranaki Regional Council.
Triazines	A grouping of broad-spectrum herbicides based around a triazine ring.

[1] https://environment.govt.nz/assets/Publications/HAIL.pdf

Executive summary

Introduction

Tonkin & Taylor Ltd (T+T) has been engaged by Dow Chemical (NZ) Ltd (Dow) to undertake a Preliminary Site Investigation (PSI) for the former agricultural chemical manufacturing site at Paritūtū, 89 Paritūtū Road, Spotswood, New Plymouth. This PSI has been undertaken to evaluate the potential for contamination to be present at the Paritūtū site and assess the need for further investigations and contaminated land related consents in accordance with the Remediation Roadmap. The Roadmap was specifically developed for the site's environmental remediation and presented to key stakeholders in November 2022.

To complete the PSI, multiple information sources, such as historical documentation, were gathered and reviewed. These included:

- New Plymouth District Council property files.
- Taranaki Regional Council records and pollution incidents.
- Documents from National Library of New Zealand.
- Historical aerial photographs.
- Environmental regulations and planning documents related to ground contamination.
- Dow and Corteva supplied documents.
- The public survey conducted in July 2023 and related interviews.

T+T also completed:

- Site walkovers.
- Engagement with mana whenua.

This PSI is current as to all information received and reviewed by June 2024. Any further information received after this date will be considered to inform the sampling and analysis plan and be integrated in the contextual information in reporting for the DSI.

Results

Site History

The Paritūtū site has been associated with agrichemical manufacturing operations since 1960. Prior to this, a Māori horticultural settlement named Ruataku was located at the site in the 1840s, which provided food for the nearby pā of Otaka, Ngamotu and Te Mahoe, which were linked by a foot track in the early-mid 1800s. This kainga was likely largely abandoned by the early 1900s.

The onsite infrastructure associated with the manufacturing operations formerly included multiple facilities for chemical manufacture and storage as well as an administration building, pilot plant, solid and liquid incinerators, maintenance/engineering areas, and research and development facilities. All production and packaging activities ceased by February 2021 and the demolition of most above-ground structures was completed by the close of 2022. Only a few structures remain on site, including the stormwater ponds and the unused former Dangerous Goods Compound.

Management and ownership changed over the years of operation, with Dow assuming ownership of the site in February 2023 and committing to undertake investigation and remedial works, as needed.

Contamination Sources

Drawing from a range of sources, the PSI has identified that potentially contaminating Hazardous Activities and Industries List (HAIL) activities, as defined by the Ministry for the Environment, have been undertaken throughout the site's industrial history. The identification of HAIL activities is a

requirement of a PSI under New Zealand regulations. From the documented information reviewed, and validated inputs received via the community survey, the PSI identified that activities at the site have potentially resulted in soil and groundwater contamination. These include activities associated with chemical manufacture and other related operations, as well as the presence of workshops, substations, and other structures. There are a wide range of chemicals and contaminants of concerns (CoCs) associated with these activities. If the CoCs have been released to the environment via accidental spill or through loss of containment their effects in soil and groundwater may vary based on their mobility and fate in certain media. In addition, a high-level assessment of the mobility and fate of potential CoCs has been undertaken indicating that potential CoCs may have broken down over the site's long history.

Preliminary Conceptual Site Model

The information gathered was used to develop a preliminary conceptual site model (CSM). A conceptual site model describes a site's environmental setting. It includes three main elements: **source(s)** of contamination, **pathway(s)** or means for people or the environment to be exposed to contaminants, and **receptor(s)**, which is the people, environment, or ecosystem which could be affected by a contaminant. The purpose of a CSM is to help identify if there is a risk to people or the environment from site contamination.

The preliminary CSM for the Paritūtū site indicates that there is a potential for contamination to exist in surface soils, underlying soils, and groundwater (shallow and deep) which may have the potential to affect human health, and/or the environment.

Site Specific Regulatory Requirements

Because known and potentially contaminating activities included on the HAIL have been carried out on the site, the NESCS regulations apply to the site. In accordance with the NESCS, additional investigation is required to further assess contamination risks at the site.

Sampling required can likely be undertaken as a permitted activity under regulation 8(2), and the soil disturbance for test pits can likely be a permitted activity under regulation 8(3) provided the volume of soil disturbance is below 7,800 m^3.

Investigative sampling within the Site of Significance to Māori (SASM), is considered likely to be undertaken as a Discretionary activity under SASM-R17 (operative) and resource consent is required within this area.

The main remediation works will likely require a Restricted Discretionary activity consent under Regulation 10 of the NESCS for soil disturbance. Soil disturbance (and/or removal of a fuel storage system(s)) in relation to the ultimate remedial works, is considered likely to be undertaken as a Restricted Discretionary activity under Regulation 10 of the NESCS. On this basis, a CSMP and RAP would be required for implementation during any soil disturbance works.

Moreover, consideration of asbestos and other potential contaminants is required under the current regulatory framework, including the Asbestos Regulations.

Conclusions

Although numerous contamination investigations and reporting have been carried out at the site historically, T+T has identified data gaps which need to be addressed as part of the roadmap to remediation.

To address the identified data gaps, the next step is to undertake a Detailed Site Investigation (DSI), which will include soil and groundwater sampling and is designed to determine whether the potential pathways identified in the preliminary CSM pose an actual risk to people or the environment.

1 Introduction

T+T has been engaged by Dow Chemical (NZ) Limited (Dow) to undertake a Preliminary Site Investigation (PSI) for 89 Paritūtū Road, Spotswood, New Plymouth (the Paritūtū site). The location of the site is presented in **Figure 3.1** below.

This report has been prepared in general accordance with the requirements for a PSI referred to in the NESCS regulations[2], and as outlined in the MfE Contaminated Land Management Guidelines[3].

The persons undertaking, managing, reviewing, and certifying this investigation are suitably qualified and experienced practitioners (SQEP), as required by the NESCS and defined in the NESCS Users' Guide (April 2012).

This preliminary investigation was undertaken in accordance with our proposal of 27 February 2023.

Dow assumed ownership of the site in the first quarter of 2023 and has committed to undertaking a full detailed site investigation and remedial works, as required for the Paritūtū site.

T+T has undertaken this PSI to assess the former onsite activities which may have resulted in soil and groundwater contamination.

[2] Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011.
[3] Ministry for the Environment updated 2021, Contaminated land management guidelines No. 1: Reporting on Contaminated Sites in New Zealand.

2 Objective and scope of work

2.1 Objective

The objective of this PSI is to gather relevant information related to the Paritūtū site to determine its history and actual or potential sources of contamination. The gathered information will be used to inform investigations and outline possible remediation measures going forward.

2.2 Scope

The scope of work for this investigation comprised:

- Review of multiple sources of historical documentation including:
  - New Plymouth District Council property files.
  - Taranaki Regional Council records and pollution incidents.
  - Historical aerial photographs.
  - Ground contamination related environmental regulations and planning documents.
  - Dow and Corteva supplied documents.
- Site walkovers.
- Mana whenua engagement.
- Community engagement survey.
- Interviews with survey respondents and former employees.
- Development of a conceptual site model (CSM).
- Preparation of this report.

This report documents our findings and comments on the potential for ground contamination at the site, in the context of the remediation roadmap (**Appendix B**) including potential resource consent implications with regard to ground contamination.

3 Site description

The site is located in New Plymouth's northwesternmost suburb of Spotswood and is positioned at the northern end of Paritūtū Road, where it intersects with Centennial Drive.

The Paritūtū site has primarily been associated with agrichemical manufacturing operations since 1960, when the site was first established. The onsite facilities formerly included multiple facilities for chemical manufacture and storage as well as an administration building, pilot plant, solid and liquid incinerators, maintenance/engineering areas, and research and development facilities. **Table 3.1** provides an overview of the site description and **Figure 3.1**, below, shows the site location.

Figure 3.1: Site Location, with an approximate site boundary shown in orange.

Table 3.1: Site identification

Site Identification	
Street address	89 Paritūtū Road, Spotswood, New Plymouth, New Zealand
Legal description	Lot 3 DP 8465 Lot 1 DP 9022 Lot 1 DP 9829 Lot 1 DP 10018 Lot 2 DP 9829
Site owner	Dow Chemical (NZ) Limited
Site area	Approximately 16 ha
Zoning	General Industrial
Geographic coordinates (World Geodetic System, WGS84)	39 03 49.80 S, 174 01 27.34 E

3.1 Current site use

The site is located within the 'General Industrial Zone' under the New Plymouth Proposed District Plan (updated 2020).

Demolition of site infrastructure was undertaken from mid-2022, with demolition to ground level completed in December 2022. However, some above ground structures remain, including the Dangerous Goods Compound (with associated buildings), stormwater retention ponds, and concrete building footprints. The site has no manufacturing activities occurring. Dow continues to hold two resource consents for the Paritūtū site: one to discharge stormwater to the Herekawe Stream at Back Beach (expiring 2026) and another to discharge contaminants to air (expiring 2044).

3.1.1 Surrounding land uses

The Paritūtū site sits at an elevation of up to 60 m above sea level and is bound by Centennial Drive to the north and the west. A steep cliff face is present west of the site, separating Centennial Drive from Back Beach below. Back Beach is a popular recreational area and forms part of the Ngā Motu Marine Protected Area and the wider Tapuae Marine Reserve, located approximately 175 m west of the site. Paritūtū Centennial Park (Paritūtū Rock) is present immediately north of the site, with Mataora Island and Pararaki Island beyond.

Residential housing is located immediately adjacent to the southern boundary, and a short distance from the southeastern boundary, the latter of which is separated by Paritūtū Road. Industrial properties occupy most the of the adjacent land to the east (beyond Paritūtū Road), including the OMV tank farm (immediately northeast) and Port Taranaki beyond (approximately 500 m to the northeast).

Table 3.2: Surrounding Land Uses

Direction	Surrounding Land Uses
North	Centennial Drive, Paritūtū Centennial Park, Paritūtū Rock, and the ocean beyond.
East	Paritūtū Road, industrial and commercial properties including a fuel tank farm, a metal works and industries associated with port activities.
South	Residential properties.
West	Centennial Drive, Paritūtū Centennial Park, and the ocean beyond.

4 Background

4.1 Site ownership and management

The Paritūtū site was an agrichemical formulation and packaging plant established in 1960. Specific site ownership history information has been compiled from the 1992 desktop assessment[4] and the 2014[5] interpretive groundwater report, and summarised below:

- In 1960 Ivon Watkins Limited leased the site from the Taranaki Harbour Board.
- In 1964 The Dow Chemical Company acquired a 49% shareholding in Ivon Watkins Limited and the company name changed to Ivon Watkins-Dow Limited (IWD).
- In 1967 the site was developed and extended to 13 ha.
- In 1973 The Dow Chemical Company acquired a 51% shareholding and IWD Limited became a subsidiary of The Dow Chemical Company.
- The site boundary was extended westward in 1975 to give the present-day site boundary occupying nearly 16 ha.
- In 1989, The Dow Chemical Company acquired the remaining shares.
- In 1990, DowElanco (NZ) Limited was formed when The Dow Chemical Company formed a 60:40 joint venture with Eli Lilly in 1989 to produce agricultural products.
- In 1991, during the tenure of DowElanco, the Taranaki Harbour Board's land holdings were transferred to Taranaki Regional Council (TRC), including the Paritūtū site. The Council owned the site and administered the lease for six years until DowElanco purchased the property in 1997.
- In 1998, DowElanco (NZ) Limited changed its name to Dow AgroSciences (NZ) Limited when Dow acquired 100% ownership in 1997. Following the 2015 merger of The Dow Chemical Company and E.I. du Pont de Nemours & Company, Dow AgroSciences (NZ) Limited was renamed Corteva Agriscience NZ Ltd and separated from the merged company as part of the agricultural business Corteva. Corteva Agriscience NZ Ltd continued to operate the Paritūtū site until its closure in 2020.
- All production and packaging activities were ceased by February 2021[6] and demolition of most above ground structures was completed by the close of 2022 (refer to **Section 3.1**).
- Dow Chemical (NZ) Ltd assumed ownership of the site in February 2023[6].

4.2 Kaitiakitanga

Two hapū and two iwi have an association with the Paritūtū site. It is a shared interest area between Taranaki Iwi and Te Atiawa; Ngāti Tairi Hapū (Taranaki), Ngā Mahanga, and Ngāti Te Whiti Hapū (Te Atiawa) and both have associations with the Paritūtū site. It is understood urupā are located on the property, which was also a papakāinga (settlement) and a battle ground. The site also sits within a broader cultural landscape of significance within the Taranaki Region.

[4] 1992. Dow AgroSciences (NZ) Ltd. New Plymouth-Waireka Site – Environmental Assessment, Desktop assessment.
[5] 2014. ERM. 88 Paritutu Road, New Plymouth, New Zealand. Interpretive Groundwater Report.
[6] Anecdotal information from Dow.

5 Site layout

The site covers an area of approximately 16 ha, with the site surface comprising approximately 8 ha of grass and 8 ha of asphalt and building footprints. Prior to demolition numerous buildings were present, typically within the northern and central portions of the site. As stated in **Section 3.1**, demolition of most buildings across the site was completed by the end of 2022. A detailed map of the site buildings and layout is included in **Figure 1**, **Appendix A**.

There were formerly three distinct areas/levels present across the site. For continuity purposes and ease of reading, a similar site layout has been adopted for use in this report. The distinct areas (herein referred to as "portions") are as follows (see **Figure 2, Appendix A)**:

- **Northern portion:** This portion of the site comprises an approximate 2.5 ha area located north of Gate 3. Former buildings present within this portion of the site include offices (administration building), warehouses, and storage areas.
- **Central portion:** This portion of the site comprises an approximate 3.8 ha area located between Gates 2 and 3 and was formerly the main production and formulation area. Stormwater pond SV8000 is located in this portion on the western boundary.
- **Southern portion:** This portion comprises the majority of the site, encompassing an approximate 9.5 ha area located south of Gate 2. This portion of the site predominantly comprises vacant grassed land, however some buildings were/are present (e.g., former pilot plant, laboratories, tanks, and storage areas), in addition to other site features including three stormwater ponds (SV9000 and SV9100/SV9200), carparking and the Dangerous Goods Compound.

The 'building numbers' outlined in **Table 5.1** correspond to the buildings present during the site's operational period and are referenced throughout this report. It is important to note that former uses of buildings (where known) have also been included in **Table 5.1** as some buildings changed use over the operational period. However, the 'building numbers' relate to the use of the respective buildings at the time of demolition (2022).

Table 5.1: Paritūtū Site building identification

Building No.	Most recent building use	Previous uses	Building No.	Most recent building use	Previous uses
01	Grounds (Gates etc)		**37**	Not Assigned	
02	Administration/Laboratories		**38**	Maintenance Oil Store	
03	Raw Material, Boilerhouse, Packaging and Waste Storage, Herbicide, and Insecticide Formulations	Surfactants Plant Phenoxy active ingredient synthesis	**39**	Spill Control Shed	
04	Herbicides Packing, Raw Material Storage	Protectants Plant, Wettable Powders Plant, Granules Plant	**40**	No detailed record after demolition (possible caretaker building; appears to have been demolished late 1960s)	
05	Maintenance Workshop and Store		**41**	Bulk Tank Compound (demolished 1988)	Approximate location of stormwater pond ('lagoon')
06	Finished Goods Warehouse, Cafeteria and Laundry		**42**	Bulk Tank Compound	
07	Packaging Storage	Spray Equipment Fabrication, Carpenter Workshop, Laboratory	**43**	Bulk Tank Compound	
08	Storage Room		**44**	Fire Water Tank	
09	Drawing Office/Process Engineering (removed in mid-1990s)		**45**	Fire Pump Shed	
10	Offices (removed mid 1990s)		**46**	No.5 Substation	
11	Equalisation Tank (Tradewaste)		**47**	Security Gatehouse	
12	Retention Tank (Tradewaste)		**48**	Commodity Herbicides Plant	Phenoxy Plant (active ingredient synthesis), Continuous Sulphonation Plant (former unnamed building over this area)

Building No.	Most recent building use	Previous uses	Building No.	Most recent building use	Previous uses
13	Disused TCP Plant (demolished 2014)		**49**	Sprinkler Station (Formulations)	
14	Cooling Tower Chemicals		**50**	Container Test Storage	
15	Product Development Laboratory	Organophosphate insecticide plant Triazine plant Solids R&D facility	**51**	Dangerous Goods Storage 2 (Lab)	
16	Stormwater Pond (SV9000, SV9100/SV9200)		**52**	Sprinkler Station (Phenoxy)	
17	Stormwater Pond (SV8000)		**53**	Process Water Tank	
18	Storage/Packaging	Vet medical manufacturing, Container printing	**54**	Paint Shop	
19	Equipment / Packaging Storage	Disused Laboratory, R&D Offices	**55**	Fork Truck Garage	
20	Disused Pilot Plant (demolished 2014)	Pilot plant, Laboratory, Library	**56**	No detailed record after demolition (Potential storage shed; demolished early 1990s)	
21	No detailed record after demolition[1]		**57**	Packaging Storage	Finished Goods Shelter
22	No detailed record after demolition[1]		**58**	Tradewaste Monitoring	
23	Not Assigned		**59**	Dangerous Goods Storage (Maintenance)	
24	Health Clinic		**60**	Brine Extraction Process	
25	Packaging Storage	Drum Processing	**61**	Brine Extraction (Storage Tanks)	
26	Office (Tanker Drivers) (demolished early 1990s)		**62**	Materials Flow Offices	
27	No.4 Substation		**63**	Site Services Offices (removed mid-1990s)	

Building No.	Most recent building use	Previous uses	Building No.	Most recent building use	Previous uses
28	Cooling Tower		**64**	High Temperature Incinerator	Solid Wastes High Temperature Incinerator
29	Dangerous Goods Store		**65**	Not Assigned	
30	Liquids Incinerator (demolished 2000)		**66**	Electric Fire Pump	
31	Town Main Booster Pump		**67**	Emergency Equipment Shed (demolished early 1990s)	
32	Sprinkler Station (Pilot Plant)		**68**	Hazardous Waste Storage	
33	Covered Stairway		**69**	Valve House (Brine Extraction)	
34	Not Assigned		**70**	Finished Goods Office	
35	Sprinkler Station (Engineering)		**71**	Valve House (Building 06)	
36	Dangerous Goods Storage 1 (Lab)				

[1]. Buildings 21 and 22 did not have detailed records over uses prior to demolition and site decommissioning, however they are considered likely to relate to small site offices, temporary portable offices or a caretaker shed in the vicinities of Buildings 4, 5 or 6.

6 Environmental setting

6.1 Topography and hydrology

The former main production areas (within the Northern and Central portions of the site) are situated on a plateau (approximately 60 m in elevation) with sharp breaks in slope to the north, south and west, the latter of which leads down to the road cutting for Centennial Drive. The southern break separates the Central portion of the site from a lower terrace (Southern portion of the site, approximately 55 m in elevation), which slopes further southward toward to the southern boundary.

The nearest surface water course is the Herekawe Stream, located approximately 370 m southwest of the site at its closest point and flows westward into the ocean. Controlled (consented) stormwater from the site is discharged to this stream.

6.2 Geology and hydrogeology

The geology and general groundwater system across the site is complex. Although a preliminary review of the groundwater system has been conducted[7], further investigations are planned to improve the understanding of the hydrogeological system.

Published geological maps of the site show the surface geology as Holocene dune deposits (windblown sand)[8]. Paritūtū Rock (immediately north of the site) and the Sugar Loaf Islands (just offshore to the north-west) are classified as andesitic lava (volcanic plugs) of the Sugar Loaf Andesite Formation. Immediately south of the site the surface geology is identified as bedded sands and conglomerate overlain by andesitic lahar deposits (breccia) of the Maitahi Formation. It has been inferred that these Maitahi lahar deposits likely extend across the site, underlying the Holocene dune deposits, to abut against Paritūtū Rock[9].

Previous studies onsite have described the geological sequence as interbedded sands, silts, and clays[9]. These studies have also identified an 'andesite high' in the western area of the site, where the sequence of interbedded sands, silts and clays is underlain by andesite rock. The exact geometry of this andesite high has not been determined, but it is found as shallow as 12 m below ground level (bgl) at BH10, before dropping off in all directions. The top surface of this andesite is highly weathered and has formed a clay layer. A similar clay has been identified at the bottom of some bores near the eastern edge of the site (BH16a, BH30). This clay has previously been interpreted as the weathered surface of andesite rock, suggesting that the andesite may extend across the Central portion of the site at depths below those reached during historical drilling in this area of the site, or a separate andesite high may be present in the east near BH16a and BH30. One borehole (BH46a) identified smooth, sub horizontal joints in the andesite, which could form a preferential flow path. Other boreholes only reached the top of the andesite, so were not able to assess the extent of fracturing.

[7] T+T, 2023. Proposed Revisions to the Groundwater Management Plan – 89 Paritūtū Rd, New Plymouth. Ref 21795.0210
[8] Townsend et al. (compilers) 2008, modified for Heron (custodian) 2018, 2020. Accessed through GNS web maps.
[9] ERM, 2014. 89 Paritūtū Road, New Plymouth, New Zealand. Interpretive Groundwater Report.

Previous reports indicate two aquifers are present at the site:

A perched shallow aquifer (the Shallow Aquifer) has been identified at the site. Groundwater gauging data indicates the Shallow Aquifer is discontinuous and generally confined to the southeastern area of the site, although the precise extent of the Shallow Aquifer has not been confirmed. There are some indications that a shallow perched aquifer may also be present in the northeastern section of the site, although additional intrusive investigations would be needed to confirm this. There is also limited shallow groundwater data in the centre of the site, and it is unclear whether the southeastern shallow aquifer and the northeastern shallow aquifer (if present) are connected. In the southeast, the Shallow Aquifer flows towards the south/southwest (counter to the regional flow direction). The flow direction in the northeast is not well understood. Shallow groundwater is typically found between 1.5-7.5 m bgl. The Shallow Aquifer is in sandy soil and is underlain by a clay layer approximately 2 m thick, which acts as an aquiclude (low-permeability layer). The total height of the water column in the Shallow Aquifer is typically less than 10 m. While the extent of the shallow aquifer off site is not known, it may be hydraulically connected to the Herekawe Stream.

- A deeper aquifer (the Deep Aquifer) is found across the site at between approximately 15-25 m bgl. This aquifer is within a mixture of sands, silts, and clays. Except where andesite has been identified in the west of the site, the base of the Deep Aquifer has not been encountered in previous investigations, so the aquifer thickness is unknown. The base may be the weathered andesite clay layer described above. The Deep Aquifer generally flows to the north, except in the western area of the site, where deep groundwater appears to flow to the west/southwest around the andesite high. Groundwater from the Deep Aquifer either drains into the underlying andesite (see below) or discharges to the marine coastal area to the northwest of the site (including seeps identified in the coastal cliffs).
- Previous investigations have indicated that there may also be a separate aquifer in the andesite. This is based on a single monitoring well (MW46A) that is screened in the andesite high near the western boundary of the site (see **Figure 8, Appendix A**). The water level in this monitoring well is typically approximately 10 m deeper than the water level in nearby monitoring wells screened in the sands/silts of the Deep Aquifer described in the previous paragraph. Detections of contaminants in MW46A indicate that there is some degree of connectivity with the Deep Aquifer, but the extent of connection is not well understood. Based on the information available, it is unclear whether there is a separate andesite aquifer, or if groundwater in the andesite is better characterised as part of the Deep Aquifer. For the purposes of this report groundwater in the andesite has been considered part of the Deep Aquifer rather than a separate aquifer.
- The aquifers are expected to be unconfined and linked, with groundwater from the Shallow Aquifer seeping down to the Deep Aquifer. It is possible that anisotropic geological conditions create variable flow directions.

The figures below (**Figure 6.1** and **Figure 6.2**) provide hydrogeological cross-sections of the Paritūtū site.

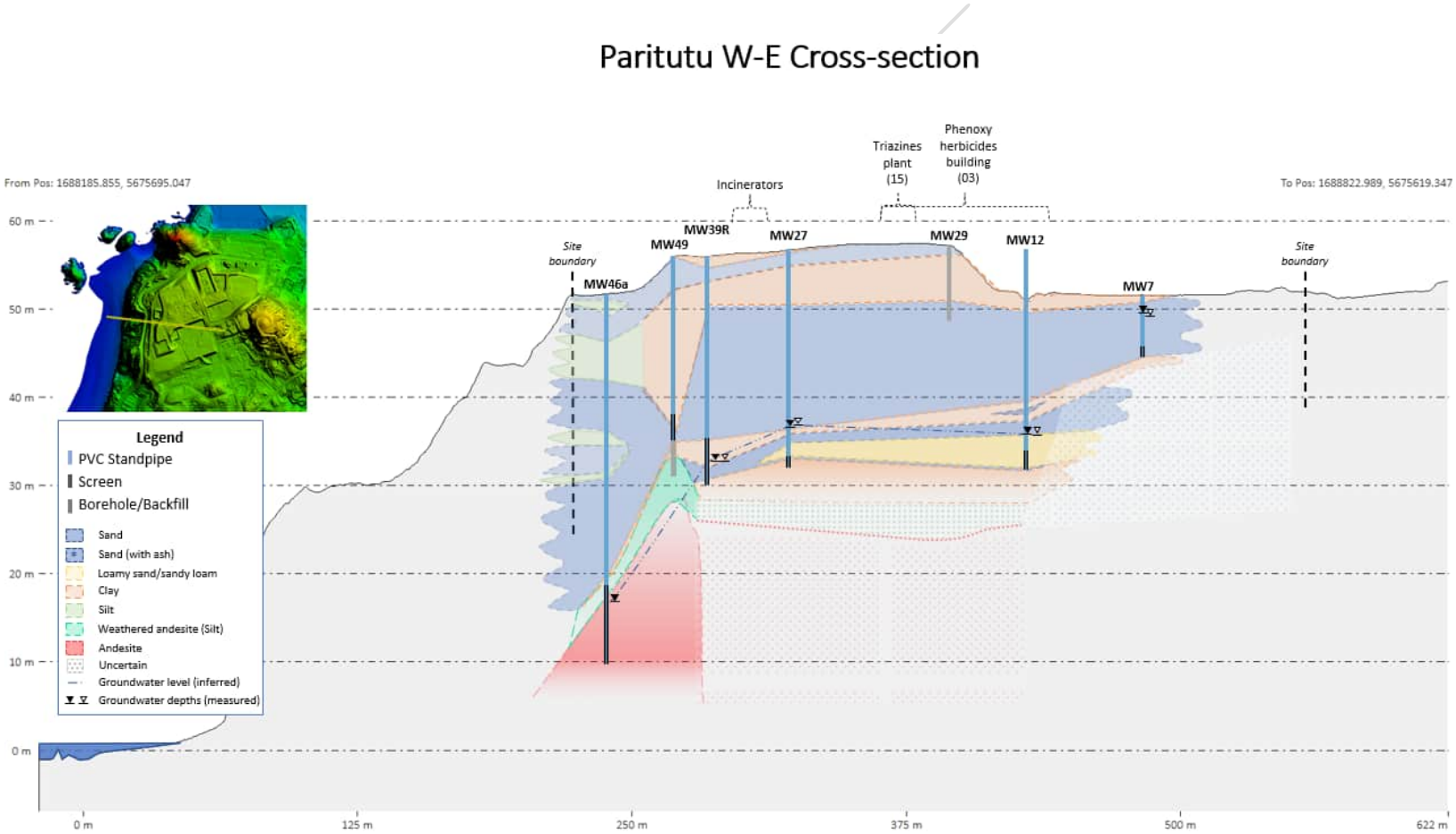

Figure 6.1: West to east hydrogeological cross-section of the Dow Paritūtū site. Where groundwater depths are not displayed on the figure, groundwater was not encountered within the monitoring wells during the 2022 monitoring round. Note: open triangles indicate where water was note during drilling and solid triangles are stabilised water levels.

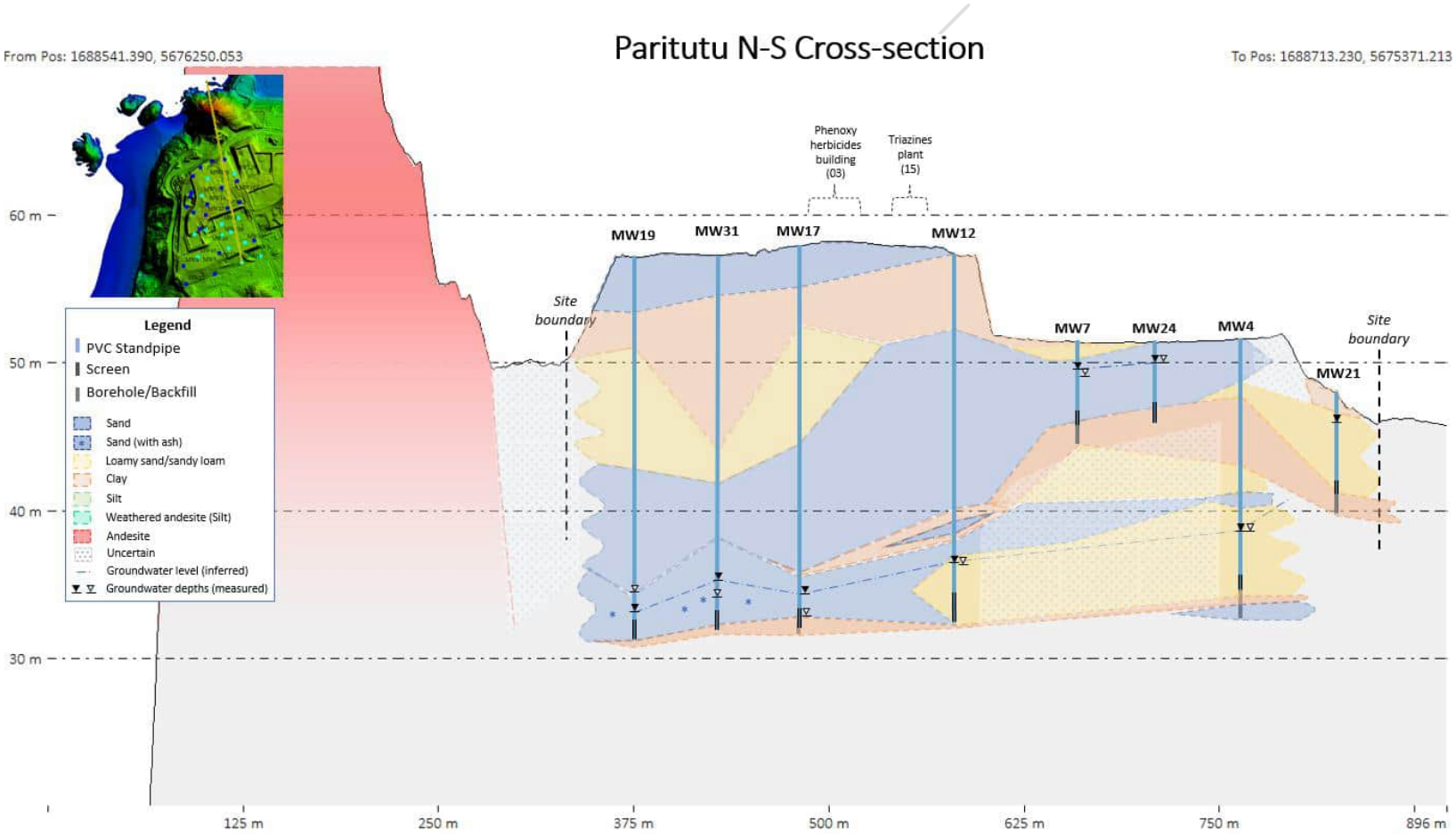

Figure 6.2: North to south hydrogeological cross-section of the Dow Paritūtū site. Where groundwater depths are not displayed on the figure, groundwater was not encountered within the monitoring wells during the 2022 monitoring round. Note: open triangles indicate where water was note during drilling and solid triangles are stabilised water levels.

7 Historical information review

In order to piece together a comprehensive history of the site, multiple sources of historical information have been reviewed. **Appendix C** provides a summary of the research record and references the documents, reports and information which have been reviewed to determine the history and the potential for contamination in areas across the site.

Given the complex history of the site, T+T were supplied with numerous documents and information relating to Dow, offsite activities, and the site. Only information relevant to onsite activities has been included within this report.

This PSI is current as to all information received and reviewed by June 2024. Any further information received after this date will be considered to inform the sampling and analysis plan and be considered in the contextual information in reporting for the DSI.

A series of Figures (**Figures 3 to 6**) which illustrate key site activities (e.g., site developments) during particular time periods are included in **Appendix A**. Additionally, based on the findings of this investigation (including the site history review), a digital map has been developed utilizing GIS software (ArcGIS Pro) which is intended to be viewed in conjunction with this report. Information included within the GIS map has also been tabulated and included in **Appendix A**.

Detail on the types of potentially contaminating activities identified through this investigation has been provided in the following sections.

7.1 Historical photographs

Historical photographs were obtained from various sources including Retrolens[10], Alexander Turnbull Library[11], Google Earth Pro, NPDC's GIS Viewer[12], and documents received from Dow. Relevant features of the site are summarised from each photograph in **Table 7.1**. As mentioned in **Section 5** the site has been split into three distinct areas for ease of reporting: The Northern portion, Central portion and Southern portion. Copies of the aerial photographs are included in **Appendix D**.

Table 7.1: Summary of aerial photograph review

Date	Key site features (Northern portion)	Key site features (Central portion)	Key site features (Southern portion)
1949	Northern and Central portions comprise predominantly vacant, heavily vegetated land. Some small vegetation clearing appears visible over the Central portion.		The Southern portion comprises predominantly vacant, heavily vegetated land, however a rectangular area of vacant (cleared) grass is present in the southeast corner of the site. This area is likely to be associated with apparent pastoral land use associated with land south/southeast of the site.
1958	No significant changes observed.		
1965	Buildings 02, 06 and 07 appear to have been constructed within the	Buildings 03, 04, 05, and 08 appear to have been constructed within the	The Southern portion remains vacant and covered in scrub.

[10] https://retrolens.co.nz/
[11] https://natlib.govt.nz/collections/a-z/photographic-archive
[12] https://www.npdc.govt.nz/services/maps-and-gis/

Date	Key site features (Northern portion)	Key site features (Central portion)	Key site features (Southern portion)
	Northern portion. Paved accessways/roadways have been laid. A carpark runs along the eastern side of Building 02. A fence runs around the former boundary of the site.	Central portion, with paved accessways/roadways laid. There appears to be drum storage along the western boundary of the site adjacent to Building 05. The drums appear to be stored on grassed areas adjacent to the former western boundary. Part of the Central portion remains vacant and covered in vegetation (scrub).	
1967	The Northern portion remains generally similar to the previous photo.	Grid lines have been cut through scrub in the undeveloped area of the Central portion. Some ground disturbance appears visible. Building 40 appears to have been constructed.	Grid lines have been cut through the scrub. Some ground disturbance appears visible. Offsite, directly south of the southeast boundary, residential houses are under development along Paritutu Road.
1968 - 69	The Northern portion of the site has been levelled. Hardstand surfacing has been extended towards the western boundary. Drum storage is observed on hardstand and on non-hardstand surfaces (adjacent to Building 06).	Similar to the Northern portion, the Central portion of the site has also been levelled. Some stockpiling (possibly construction materials and/or drum storage) appears present surrounding Building 05. Building 13 appears under construction within the Central portion. A pond ("lagoon") is present at the western boundary of the Central portion of the site. Given the location and orientation of a fence line which marks the former western boundary, the pond appears to have extended beyond the former site boundary (further westward). Building 40 appears to have been removed.	A steep slope and potential excavation are present at the boundary between Central and Southern portions. Several buildings (Buildings 18, 19 and 20) have been constructed or are under construction across a levelled section of the Southern portion. Hardstand (including roadways) are present surrounding the buildings; however, some accessways remain unpaved. Carparking along the edge of these unpaved roads is observed. Similar to the Northern and Central portions, stockpiled material is observed surrounding Building 19. South of the buildings, the remainder of the Southern portion comprises vacant land, with the exception of a clearly demarcated (and potentially paved) area present in the southeastern corner of the site. The previously constructed (and unpaved) accessway connects this corner of the site to the developed areas.

Date	Key site features (Northern portion)	Key site features (Central portion)	Key site features (Southern portion)
1970	The Northern portion remains generally similar to the previous photo.	Buildings 08, 13, 15 and the Continuous Sulphonation Plant (prior to Building 48) have been constructed. Drum storage appears present adjacent to buildings (03, 04, 05) within the Central portion, including areas which appear unpaved.	The slope/excavation present within the Southern portion may have been partially infilled. However, this may be the result of improved image quality. Further storage of drums and/or building materials appears present surrounding buildings from the Southern portion of the site. Offsite, residential houses have been developed along the southern boundary.
1975	The western boundary of the site appears to have been extended further westward and appears consistent with the present-day site boundary. Storage of drums is evident across this portion of the site. The drums appeared to be stored on a mixture of grassed and hardstand areas.	Levelling works are being undertaken in the western extent of this portion. Building 42 appears under construction. Storage of drums is also evident across this portion. The drums appeared to be stored on hardstand areas (close to buildings) and non-hardstand areas (closer to the western site boundary). Building 30 has been constructed and hardstand surfacing appears to be present over this area. The pond ("lagoon") has been filled in and Building 41 has been built on top of the general location of the pond. The Dangerous Goods Compound appears under construction (including Building 29), with building material and drums being stockpiled here.	A paved carpark has been developed at the foot of the slope within the Southern portion, adjacent to Gate 1. Stockpiled material and drums are present across the southeast areas of the site, in particular with the southeast corner. Ground disturbance is present across the Southern portion of the site, presumed to be associated with ongoing construction works.
1984	Buildings 56 and 57 have been constructed.	Buildings 43, 46, 48 and 54 have been constructed. The general site appears much tidier with stockpiling/storage limited to buildings or designated (hardstand) areas (e.g., the Dangerous Goods Compound).	Buildings 11, 12, 44, 45 and 64 have been constructed. Building 16 appears to have been constructed, however smaller than that of present day. The materials stored at the southeast corner of the site have been removed, and the area appears to have been grassed. Grass cover has also increased throughout the southwest area of the site.

Date	Key site features (Northern portion)	Key site features (Central portion)	Key site features (Southern portion)
1991	The Northern portion remains generally similar to the previous photo, with the exception of Building 55 constructed and Building 56 removed.	The stormwater pond (SV8000/ Building 17) has been constructed. Building 41 has been removed.	The Southern portion remains generally similar to the previous photo.
2000	The Northern portion remains generally similar to the previous photo.	Stockpiled material and/or ground disturbance of a non-hardstand area immediately north of the Dangerous Goods Compound is evident.	Building 16 appears to have been extended and consistent with that of the present day. The Southern portion remains generally similar to the previous photo.
2007	The Northern portion remains generally similar to the previous photo.	Hardstand surfacing is now present over the areas associated with the former pond ("lagoon"). The hardstand surface covers an approximate 260 m^2 area, between Building 17 and the Dangerous Goods Compound (in the Southern portion of the site).	A line of trees has been planted at the head of the slope, and south of the Dangerous Goods Compound, as well as Southern and Eastern boundaries.
2011	Building 70 has been constructed.	The Central portion remains generally similar to the previous photo.	The Southern portion remains generally similar to the previous photo, with the exception of container storage north of the Dangerous Goods Compound.
2013	The Northern and Central portions remain generally similar to the previous photo.		Ground disturbance and/or stockpiled material/refuse is present immediately south of Building 19.
2014	The Northern portion remains generally similar to the previous photo.	Building 13 has been removed.	Building 20 has been removed.
2022	The site is in the process of being demolished, the majority of buildings across the site have been removed.		
2023	All the buildings have been removed from the Northern portion. Concrete footprints (associated with former structures) remain.	All the buildings have been removed from the Central portion, with the exception of the lower level of Building 03 (which remains for structural purposes) and Building 17 (Stormwater Pond, SV8000) Concrete footprints (associated with former structures) remain.	The last standing structures are Buildings 29 and 68 (Dangerous Goods Compound), as well as Building 58 (Tradewaste Monitoring) and Building 16 (Stormwater Pond, SV9000, SV9100/SV9200).

7.2 Site history

The Paritūtū site has primarily been an agrichemical manufacturing operation since 1960 when the site was first established. **Table 7.2** provides a summary of the operational site history and recorded environmental events sourced from reviewed documents. Site history information has been compiled from the 1992 desktop assessment (see **Section 4.1**), unless indicated otherwise in the below table. The environmental events will be addressed in more detail in the following sections. On an ongoing basis over the operation of the site chemicals would have been regularly moved on to site for production and off site for dispatch to retail.

Table 7.2: Summary of operational site history and recorded environmental events

Date	Highlight	Recorded Environmental Event
1960	Site established at Paritūtū Road occupying 8 ha. Phenoxy herbicide esterification (2,4-D) and formulation. Surface active agent range produced.	
1961	Production engineering moved from Buller Street to Building 07.	
1962	Phenoxy Herbicide Plant (Building 03) built to manufacture 2,4-D, 2,4,5-T and MCPA.	
1964	The Dow Chemical Company acquires 49% shareholding. Company becomes Ivon Watkins-Dow Limited.	
1967	Site development extends site to 13 ha.	
1969	TCP Plant built (Building 13) and manufacture of 2,4,5-T raw materials commenced. Solvents (methanol and xylene) stored in Underground Storage Tanks (USTs). Pilot Plant built (Building 20). Organophosphate Insecticide Plant built (Building 15). Continuous Sulphonation Plant built (prior to Building 48) to manufacture surfactants.	
1971	MCPB (herbicide) process built in Phenoxy Plant (Building 03).	
1972	Triazine herbicide (Atrazine, Simazine, Propazine) production commenced in Building 15.	MCPB explosion (November; Building 03). MCPB vessel over-pressured, rupturing a sight-glass on top of the vessel, resulting in a flammable vapour release which subsequently ignited from an unspecified ignition source. The explosion was contained within the Phenoxy Plant building.

Date	Highlight	Recorded Environmental Event
1973	The Dow Chemical Company acquires 51% ownership by purchasing Amchem's 2% shareholding.	
Until 1975		Anecdotal reporting of occasional product losses/releases to the tradewaste system prior to the phenoxy renovation project.
1975	Continuous Sulphonation Plant closed down. Approval for major plant/site reconstruction, expansion, and modernisation. Stormwater pond (Building 17)/Dangerous Goods Compound (Building 29) built. Site boundaries extended westward resulting in a site area of nearly 16 ha. Herbicide powder and granule formulating shutdown, moved to contractor.	
1976	Liquid Wastes Incinerator built (Building 30). Formulations Plant expansion/modernisation (Building 03).	
1976 – Early 1979	Operation of the liquid waste incinerator, disposing liquids containing by-product anisole and TCDD.	
1977	Phenoxy Plant (Building 48) and Brine Extraction waste treatment facility (Building 60) built. Construction started in 1976.	
1960-1980	The disposal of wastes onsite, including those contaminated with PCDD/F as a byproduct of the manufacture of herbicides 2,4,5-T alleged to have occurred.	
1982	Solid Waste Incinerator built (Building 64). Hazardous waste storage (Building 68) constructed within Dangerous Goods Compound.	Reported that solvents stored in the Dangerous Goods Compound leaked and "deteriorated the asphalt resulting in some soil contamination". Some remedial efforts undertaken, including installation of HDPE liner, and backfilling.
1983	Herbicide granules Plant built (Building 03).	
1986	TCP Plant renovation following release incident.	TCP Plant disk rupture (April). Unintended release to environment

Date	Highlight	Recorded Environmental Event
		through a fractured rupture disk from Building 13. Ministerial Committee of Inquiry Investigation made publicly available[13].
1987	Powders Plant built in Protectants Plant (Building 04). De-commissioning of the TCP process (Building 3) and 2,4,5-T process (Building 48), with equipment demolished.	
1988	The Dow Chemical Company acquires 100% shareholding. Powders Plant commenced operation. Transesterification of Triclopyr (herbicide) commenced (Building 48).	
1989	Triazines Plant closed down (Building 15). Underground storage tank removal (1989-1991).	
1990	DowElanco (NZ) Limited formed.	
1991	Final underground storage tank removed.	
1992	Solids Research & Development facility built in old Triazines Plant (Building 15).	
1994	Solids incinerator (Building 64) upgraded to increase residence time. Cessation of use of the 'liquids' incinerator building for incineration (Building 30).	
1995-1996	Diversion of stormwater from the onsite roads in the vicinity of the incinerator to the new HDPE lined stormwater pond (SV92000).	
1997	Four save-all (bunded pit) locations used for disposal of tradewaste were lined with double skinned HDPE liner. Leak detection was also installed to prevent leakage to soil and groundwater. Below ground glazed earthenware tradewaste piping installed with internal lining to prevent any leakage.	Some leakages of the save-all liners noted during 1997.

[13] Brinkman, G. L. (1986). Possible health effects of manufacture of 2,4,5-T in New Plymouth. Report of the Ministerial Committee of Inquiry to advise on the impact on the health of the residents in New Plymouth from the manufacture of pesticides.

Date	Highlight	Recorded Environmental Event
1998	Termination of the production of phenoxy herbicides (2,4-D, MCPA and MCPB) and triclopyr. The Phenoxy Plant was shut down. These active ingredients were then imported for formulation into herbicide products. Introduction of the insecticide active ingredient Spinosad and start of the Spinosad plant. Repairs to the liners installed in save-alls (1997).	
1999	Closure of the powders side of the Powders/Protectants Plant (Building 04).	
2000	Demolition of the Liquids Incinerator (within Building 30).	
2002	Solid herbicide granule production ceased, and the Solids Plant (Building 15) was closed. Formulation of water-based glyphosate commenced.	
2004	Drum processing facility (Building 25) shutdown.	
2005	2,4-D esterification process re-starts in Building 48	
2006	Amination of MCPA amines re-commenced (Commodities Plant, Building 48).	
2013	Amine neutralisation of glyphosate ceased. Glyphosate remains stored onsite, however no longer produced.	
2014	The Pilot Plant (Building 20) and TCP Plant (Building 13) were demolished.	
2015	The esterification of 2,4-D ceased.	
2019	Corteva becomes owner of site.	
2021	Solid waste incinerator operations ceased. All chemical production operations cease.	
2022	Demolition of site infrastructure to ground level. Underground pipework sealed, and save-alls/ sumps filled with clean fill and concrete capped.	Building 19 was the last remaining ACM clad building on site.

Date	Highlight	Recorded Environmental Event
2023	Ownership of the site is transferred to Dow Chemical (NZ) Ltd from Corteva AgriSciences NZ Ltd	

7.2.1 Products manufactured

A wide range of products have been manufactured and/or formulated at the site since 1960. During the 1960s and 1970s between 80 and 120 products were manufactured each year. Between the 1970s and 1990s up to 30 products were manufactured and/or formulated each year. A limited number of products were manufactured from the 1990s to when operations ceased in 2021.

Key products formerly manufactured and stored at the site are shown in **Table 7.3**.

Table 7.3: Key products (and associated sub-groupings) manufactured and stored at the site

Product Range	
AGRICULTURAL CHEMICALS: Desiccants Fertilizers Fumigants Growth Regulators Fungicides Insecticides (organophosphates) Miticides Non-selective Herbicides (Triazines) Selective Herbicides (Phenoxy and aromatic acids)	**ANIMAL HEALTH:** Cattle Sprays Sheep Dips Stock Remedies Veterinary Ethicals
RODENTICIDES **N/A**	**GERMICIDES:** Disinfectant Bases
WOOD PRESERVATIVES **N/A**	**LUBRICANTS:** Brake Fluids
SPECIALITY PRODUCTS: Polyurethane Paint/Varnish Aluminium Paint Spraying Equipment (pumps, nozzles, booms etc).	**SURFACTANTS:** Defoamers Detergents Emulsifiers Shampoo Bases Wetting Agents

N/A – No sub-groupings of manufactured products were identified for rodenticides or wood preservatives.

There have been six manufacturing plants which have been used for production on site:

- Phenoxy.
- Formulations.
- Protectants.
- Triazines.
- Trichlorophenol (TCP).
- Surfactants.

A list of the active ingredients used/produced on site, which have been identified during a review of the documentation provided has been presented in **Appendix E**. We note an estimation of up to 250 raw materials (chemicals) have been used during the site's manufacturing history. On this basis the list of chemicals provided in **Appendix E** is not considered comprehensive.

7.2.1.1 History of 2,4,5-T production

As mentioned above, numerous products were manufactured onsite. Of particular note is the manufacture of 2,4,5-T because of the resulting impurity 2,3,7,8-tetrachloro-*p*-dibenzodioxin (TCDD) a highly toxic and persistent organic contaminant. A summary of the key events, with respect to 2,4,5-T manufacture at the site is presented below in **Table 7.4.**

Table 7.4: History of 2,4,5-T production

Date	Event
1948	Ivon Watkins began manufacture of 2,4,5-T in New Plymouth on Buller Street.
1962	Production was moved from Buller Street to the Paritūtū site. Construction of the Phenoxy Herbicide Plant to manufacture 2,4,5-T.
Until 1969	Manufacture was based on imported trichlorophenol (TCP). After 1969, TCP was synthesised onsite, within the TCP Plant. TCDD was a byproduct of TCP production.
From 1973	Use of a solvent (believed to be xylene, however unconfirmed) reduced the TCDD impurity in the 2,4,5-T from 1 mg/kg to 0.1 mg/kg.
1975 to 1979	Liquid waste containing TCDD was processed in the liquids waste incinerator.
In 1978/9	IWD introduced changes to production to reduce the amounts of dioxins produced.
From 1980	Waste streams were processed in the liquid waste incinerator and new solid waste incinerator (from 1982).
1982	Estimated concentration of TCDD in 2,4,5-T was 0.01 mg/kg.
1986	Vapour release from failed rupture disk at the TCP Plant.
1987	Manufacture of 2,4,5-T ceases.
1990	The last 2,4,5-T product was deregistered in New Zealand in October 1990.

8 Council information

Information requests were lodged with both the New Plymouth District Council (NPDC) and the Taranaki Regional Council (TRC) for any records related to the site[14]. The records were reviewed, and relevant information has been included in the summary of reviewed information (**Section 10**), and presented in **Appendix I.**

8.1.1 TRC records

TRC manages a Register of Selected Land Uses (RSLU) for the Taranaki Region. TRC held information was obtained from this publicly available RSLU[15]. The site appears on the RSLU (0048-0), classified as a Chemical Processing/Manufacturing site, and confirmed as "1(b) Hazardous substances present – risk acceptable for land use".

Previous investigations on the site have confirmed the presence of contaminated soil and groundwater.

8.1.2 NPDC records

NPDC records included:

- Tradewaste certificates, analysis and correspondence relating to the tradewaste consent 1992-2021.
- Dow AgroSciences (NZ) Ltd Monitoring Programme Annual Report 1998-2022, these reports were also supplied by Dow.
- Dow Oct 2021 Groundwater Management Report New Plymouth site 2020-21, these reports were also supplied by Dow.
- Offsite residential investigation reports (Record 36).

[14] Due to the nature of the project T+T have been in close engagement with both TRC and NPDC and requests for documents were made directly to the respective council contacts.
[15] https://www.trc.govt.nz/environment/hazards-and-protection/contaminated-land

9 Interviews and community engagement

As part of the initial steps of the investigation process, a community information gathering survey was undertaken throughout July 2023, with follow up interviews conducted in August 2023. The objective of the survey was to gather information from persons with knowledge about the site during its operation, which could have led to potential contamination. The survey focussed on gathering information relevant to the desktop investigation for onsite activities. The engagement process went as follows:

- A survey was posted online (via the dedicated Paritūtū Project website created by T+T[16]) for three weeks, giving the public an opportunity to provide information related to the site. The survey questions are provided in **Appendix F.**
- Respondents who provided relevant information to onsite activities were contacted to provide further information.
- Follow up interviews were undertaken with those respondents who agreed to provide further information.
- Seven in-person interviews were scheduled in New Plymouth. The in-person interviews were undertaken in a rented shared space or at interviewees' houses.
- The interviewees were provided with a map of the site and discussions lasted from between 30 minutes to over an hour.
- Of the seven interviewees:
  - Six people were interviewed, one person did not show up and did not respond to further enquires.
  - Five were former employees that worked at the site spanning different decades, the earliest being from 1969 and the most recent stopped working at the site in 1993.
  - One person lived within a neighbouring property on the south boundary of the site during the 1970s.
- Additionally, three interviews were conducted over the phone and two requested email correspondence. One potential interviewee did not respond to emails or phone calls.
- The interviewees provided T+T with information that supported previously reviewed sources, and new information that had not been identified in previously reviewed documents.
- The information provided was recorded in note form and transcribed.

The following summarises the relevant information (some of which was not previously obtained during the document review) gained from the community engagement survey:

[16] Paritutu survey | Paritutu (arcgis.com)

Tradewaste System

- Throughout the 1960-70s industrial hygiene practices were not up to present day standards. Multiple interviewees mentioned that during this time, spills and leaks of materials were common and the response was to wash the material down towards the stormwater sumps and/or the save-alls using water.
- The save-alls were part of the site's tradewaste system installed across the site during its construction in the 1960s. The primary purpose of the save-alls was to intercept (and retain) solids and/or floatables (such as light solvents) from plant activities, before entering the tradewaste system and not stormwater. In some cases, these save-alls were used as vessels to neutralise waste.
- The typical construction of the tradewaste system, included asbestos piping, glazed earthenware, with concrete save-alls that were prone to overspilling if there was heavy rain.
- Parts of the tradewaste system were upgraded in the early 1990s, with the concrete save-alls lined with HDPE plastic.
- Given that material was often washed into/directed towards the tradewaste system from the production area, multiple interviewees indicated that the entirety of the tradewaste system was most likely contaminated. Particularly the systems connected to the former production areas (Buildings 03, 04, 13, 18, and 20).

Drum Storage, Drum Burial, Exhumation, and Waste Disposal

- Multiple interviewees mentioned that during the 60s, 70s and early 80s, raw materials and drums were stored across many parts of the site on hard standing and grassed areas.
- In particular, between 1975 and 1982, following an investigation into the offsite disposal locations of former site drums, exhumed 200 L drums were brought back from the two Dow owned disposal sites at Waireka and Ngahoro and stored along the southwestern boundary. The drums were stored on grass and were often observed to be in poor condition and leaking.
- The Pilot Plant (Building 20) was set up to reprocess 2,4,5-T and 2,4-D from the exhumed drums. The recovered 200 L drums of waste products which were temporarily stored in the southwestern boundary were brought up to the Pilot Plant. Once processed, the drums were washed, and wash water was either poured on the grass areas surrounding the Pilot Plant or into the tradewaste system.
- Leaking, poor condition and crushed drums were also stored on the grassed area north of the Dangerous Goods Compound.
- Drums were stored in the Dangerous Goods Compound and leaks and spills occurred within this area. An interviewee reported the asphalt deteriorated and "melted" following a particularly large leak of unknown material.
- A large-scale investigation was undertaken to find and exhume the buried drums and disposed waste from site, however interviewees indicated that not all the drums were found during this investigation and it's likely some remain buried on site. In particular, within the southwest corner and within the area of the Dangerous Goods Compound.

Storage Tanks

- Bulk storage tanks of Triazine herbicides were situated adjacent to Building 15, these were not bunded and often overflowed to ground during the late 1970s. The reaction vessel for triazines was hard to manage and occasionally foamed over, with simazine foam being blown away in strong winds.
- An underground storage tank (UST) containing xylene was situated east of Building 15. The xylene in the tank was used for processing and recycled back through the tank with potential by-product contamination being reprocessed into the tank.
- Multiple USTs were decommissioned and removed from the site in the late 1980s. Some were left in-situ and filled with concrete. Interviewees could not recall exact locations or how many USTs were removed.

Other relevant information

- Building 03 contained a ring drier, turning “wet cake chemicals” into dry powder. Often the powder from the drier became airborne and fine dust coated the walls and concrete floors of the building. The dust was washed down occasionally using water and directed towards the save-alls/tradewaste system.
- A 0.5 m diameter underground pipe connected Buildings 03 and 13. The pipe was used as a “conveyor belt” to transfer dried powder/chemicals from Building 03 to Building 13.
- A resident mentioned that during the 70s, on windy and wet days the ground along the southwest boundary around the stored drums would be bubbling and foam would blow across the site landing on the grass and getting stuck in the boundary fence.

10 Summary of reviewed information

For ease of reporting, the reviewed information is presented in chronological order with respect to potential contamination (e.g., activities and environmental events). Reviewed information has been associated (where appropriate) with other spatially similar information and presented below as general areas of concern. Given that there are over 60 relevant records/documents combined with anecdotal evidence associated with onsite activities, the tables in the below section contain corroborated evidence from the reviewed information. The information source(s) is linked to the research record which can be found in **Appendix C**. The tables below summarise the activity, information source, time, potential contaminant of concerns (CoC), and other key commentary (including the extent of any investigations previously undertaken). Description of the CoCs is provided in **Table 10.1**.

As stated in **Section 7**, a GIS map has been developed to be viewed in conjunction with the information provided in the following sections. Static versions of the GIS map (**Figures 7, 7.1, 7.2 and 7.3**) and associated (tabulated) information are also provided in **Appendix A**.

Table 10.1: Glossary of commonly referred to chemicals or chemical acronyms in this report

Term	Description
2,4-D	2,4-Dichlorophenoxyacetic acid – a phenoxy herbicide
2,4-DB	4-(2,4-Dichlorophenoxy) butanoic acid – a phenoxy herbicide
2,4-DCP	2,4-Dichlorophenol – a chlorophenol
2,6-DCP	2,6-Dichlorophenol
2,4,5-T	2,4,5-Trichlorophenoxyacetic acid – a historical phenoxy herbicide
2,4,5-TP	2-(2,4,5-Trichlorophenoxy) propionic acid (commonly termed Fenoprop/Sylvex) – a historical phenoxy herbicide
Glyphosate	A broad-spectrum organophosphorus herbicide.
MCPA	2-methyl-4-chlorophenoxyacetic acid – a phenoxy herbicide
MCPB	2-methyl-4-chlorophenoxybutyric acid– a phenoxy herbicide
MTBE	Methyl-*tert*-butyl-ether
OCPs	Organochlorine pesticides. A group of insecticides now largely banned from use.
Organophosphate / OPs	A group of insecticides with high acute and chronic toxicity, acting through acetylcholinesterase inhibition.
PAHs	Polycyclic aromatic hydrocarbons
PCBs	Polychlorinated biphenyls
PCDD/F	Polychlorinated dibenzodioxins and furans. 2,3,7,8 substituted forms are considered a much higher risk due to acting on the aryl hydrocarbon receptor.
PCOC	*para*-Chloro-*ortho*-cresol (also termed 4-chloro-2-methylphenol)
PCP	Pentachlorophenol – a chlorophenol timber preservative
PFAS	Per and poly-fluorinated alkyl substances
TCA	2,4,5-Trichloroanisole (also referred to as anisole by-product)

Term	Description
TCDD	2,3,7,8-Tetrachlorodibenzo-*p*-dioxin. Considered the most toxic of the PCDD/F
TCP	2,4,5-Trichlorophenol
TPH	Total petroleum hydrocarbons
VOCs	Volatile organic compounds

10.1 TCP Plant, Phenoxy Plants

The TCP Plant (Building 13) and the Phenoxy Plants (Building 03 and Building 48) form part of the primary production area of the site, within the Central portion. Numerous sources of information indicate potential contamination across this area, often associated with production of chemicals, and the management of by-products from the manufacturing processes (e.g., tradewaste).

Table 10.2: Summary of reviewed information.

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 45 (1979)	Possible chemical storage/spills associated with manufacturing process (particularly Building 13).	TCA, TCDD, xylene	The record mentions the TCP Plant as the source area of TCDD contaminated anisole. The record also mentions the use of drums of clay granules to soak up spillages from leaking drums within the TCP plant.
Record 49 (1986)	Chemical release at the TCP plant.	TCDD, TCA, TCP	Liquids and vapour released, with liquid confined to immediate vicinity of TCP plant. Wipe tests and soil samples collected downwind of release. Onsite sampling recorded concentrations of contaminants within the central and northern portions of the site. An "Area of visual contamination" is indicated on a site plan immediately adjacent to the northeast corner of the TCP Plant.
Record 4 (2014), Record 49 (1986), Record 57 (1981), Anecdotal information (acquired 2023)	Possible firefighting foam storage, training, and use.	PFAS	Building 52 is recorded as a sprinkler station for the phenoxy plant (Building 48). Anecdotal information records this as using a fire-fighting foam. No foam storage is recorded in the listed storage tanks in 1981, only the large firewater tank (Building 44).

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
			One investigation into the TCP ruptured disk notes that the building had a water deluge system for fire/release control.
Record 56 (1986-1989)	Chemical storage/spills associated with manufacturing process (Building 03 and Building 13).	Phenoxies (namely 2,4-D and 2,4,5-T), Chlorophenols, TCDD.	Sampling of the concrete floor and underlying soil beneath both buildings. The document stated sample locations for Building 03 targeted cracks in the concrete which "would allow material to leak into the subsoil". Soil testing results recorded contaminant concentrations within concrete and underlying soil. At Building 03 it was noted 2,4-D and 2,4,5-T were the major components present.
Record 47 (2014), Record 55 (1988), Anecdotal information (acquired 2023)	Possible chemical spills/leaks from tradewaste network (particularly associated with Buildings 03 and 13).	TCA	Limited sampling within excavation areas surrounding Building 13 (immediately west and south-west). Reported contaminant concentrations immediately below two blocked drains within soil. Visible evidence of contamination ("liquid stream oozing from a sand layer") noted.
Record 55 (1988)	Possible chemical storage/spills associated with manufacturing process.	N/A	Potential contamination ("liquid with a very obnoxious smell was noted seeping from the ground") beneath the floor of another area of the site (Building 15). The document suggested similar contamination beneath Building 03 and Building 48.

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 4 (2014), Record 55 (1988), Record 57 (1981), Anecdotal information (acquired 2023)	Possible chemical storage/spills from USTs and save-all overflows surrounding buildings (particularly Building 03, 13, and 48).	Various contaminants – (based on associated process areas) including iso-butanol, methanol, xylene (contaminated), chlorophenols, phenoxies, TCP-related compounds (raw materials).	Tanks located east of Building 03 were reported to have leaked. Limited validation testing of ground contamination was undertaken as part of a Soil Sampling Schedule following tank removals in 1989. The report stated "… recovery samples was around 50 %. Without sighting this data it is not possible to determine the former UST pits were adequately validated". Analytes tested included methanol, ethanol, iso-butanol, n-butanol, butoxyethanol and xylene.
Record 44 (1992)	Chemical spills/leaks from tradewaste system and associated save-alls.	Sulphates.	The record noted irregular losses/releases to the tradewaste system prior to renovations ("Phenoxy renovation project") in 1975. Concrete construction of some save-alls corroded by acidic and/or caustic solutions. Sulphates may have caused corrosion in the old Phenoxy Plant save-all and sewer line.
Record 18 (1996)	Possible storage/spill of chemicals.	N/A	During the drilling of "Borehole 16" (located east of Building 03), a "sweet" odour and black staining were noted from material, and "compacted sweet coal tar" at a depth of approximately 10 – 18 m bgl. Elevated water temperature was also recorded. Elevated Photo Ionisation Detector (PID) readings were recorded during the drilling of this borehole.
Record 4 (2014)	Possible storage/spill of chemicals.	Phenoxies, chlorophenols.	Soil testing at Boreholes 16a-c between 1994 and 1995 recorded contaminant concentrations within soil at depths up to 25 m bgl.

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 4 (2014)	Possible chemical spills/leaks from tradewaste system and associated save-alls.	Phenoxies, chlorophenols.	HDPE liner was applied to four 'save-all' pits, used for tradewaste disposal. Sections of the tradewaste network were lined with a "polyester resin".
Record 6 (2015)	Possible processes and/or storage of chemicals (including underground storage tanks and/or service lines) impacting groundwater.	Phenoxies and herbicides (bromoxynil), solvents (3&4-methylphenol), metals (copper and zinc).	MW16A, Bromoxynil detected during ground water quality assessment.
Anecdotal information (acquired 2023)	Possible chemical manufacture process impacting soil.	Solvents.	Anecdotal information – odour encountered from exposed soil below recently demolished switch room within Building 03.
T+T report (2023)	Use and manufacture that resulted in phenoxies (including 2,4,5-T) within concrete flooring and wall of the building. As this area was now subject to direct contact with water post demolition, the 2,4,5-T was desorbing and contaminating the pooling water.	2,4,5-T, 2,4-D and MCPA.	Concrete core and sediment sampling results indicate that both the sediment and the concrete represent likely sources for 2,4,5-T and other phenoxy herbicides leaching into pooled water in the footprint of Building 03. PCDD/F (predominantly TCDD/TCDF) were present in the sediment.
Anecdotal information (acquired 2023)	Possible spills/leaks from chemical storage within underground storage tanks.	Solvents, TCP, TCA, TCDD	A HDPE liner was placed below a grassed area on the eastern side of the TCP Plant at the time when underground storage tanks were demolished

10.2 Former pond ('lagoon')

Partway along the former western boundary of the Central portion of the site, a pond was present west of Building 05 for approximately 10 years between mid-1960 and mid-1970. This pond is understood to have received stormwater runoff from the primary manufacturing area (Central portion) of the site. Additionally, select information suggests certain dedicated service lines (water pipes) had been installed, and responsible for discharging stormwater directly from the buildings to the pond.

Table 10.3: Summary of reviewed information.

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Anecdotal information (acquired 2023)	Possible waste disposal or spills in the vicinity of the former pond.	Solvents (xylene).	Anecdotal information– mention of PVC plastic underground pipe adjacent to Building 63 which had been dissolved by contaminants.
Anecdotal information (acquired 2023)	Possible disposal of production wastes and operational spills and leaks.	N/A	Cyanuric chloride drums were depressurised, and site stormwater run-off was directed to the lagoon prior to the construction of the stormwater ponds SV9000 and SV9100.
Record 55 (1988)	Disposal of production wastes and operational spills and leaks.	N/A	Stormwater from "the manufacturing plant area" directed to a 'pond', with solvent like odours noted.
Record 44 (1992)	Disposal of production wastes and/or historic infilling.	N/A	A small unlined pond reportedly beneath Building 30 was used for 'sludge' disposal and catchment for select drain lines. A larger pond also existed on the western boundary of the site which collected stormwater run-off and not considered 'highly contaminated' as a result. Both ponds were infilled in 1975.
Record 18 (1996)	Possible waste disposal and/or historic infilling.	N/A	The report outlines observations made during drilling of Borehole 28 (undertaken in 1993, south of Building 41). Foaming and a slight odour were noted at approximately 2.5 m bgl.
Record 4 (2014)	Possible waste disposal and/or historic infilling impacting soil.	Phenoxies, chlorophenols.	Soil sampling from area surrounding MW39 (including delineation boreholes) between 1994 and 1995. Soil testing results recorded

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
			contaminant concentrations, including from samples at depths up to 24.8 m bgl. Elevated Photo Ionisation Detector (PID) readings were recorded during drilling of borehole.
Record 4 (2014)	Possible waste disposal and/or historic infilling impacting groundwater.	Phenoxies, chlorophenols.	Contaminant concentrations recorded at select monitoring wells, including MW36, MW37, MW39 (see **Figure 8**, **Appendix A**). Delineation monitoring wells installed in general area during between 1995 and 1997. Results from select monitoring wells said to "confirm earlier results".
Record 4 (2014)	Possible chemical spills/leaks from tradewaste system and stormwater system.	N/A	Report stated HDPE liner applied to four 'save-all' pits, used for tradewaste disposal. The report states that a section of the stormwater pipe around BH39 was lined with a polyester resin.
Record 4 (2014)	Possible waste disposal and/or historic infilling impacting groundwater.	Phenoxies, chlorophenols.	Contaminant concentrations recorded within select monitoring wells (including MW36, MW37, MW39J, MW46, MW46a) between 2002 and 2007 (see **Figure 8**, **Appendix A**).
Record 6 (2015)	Possible waste disposal and/or historic infilling impacting soil.	Phenoxies, Chlorophenols.	Contaminants identified within soil at MW109 and MW39R, including at depths up to 6.9 m bgl (see **Figure 8**, **Appendix A**). Surficial contamination not recorded at MW39R; however, surficial contamination was recorded in the 1995 investigation (Record 4). MW39R (2015) is located less the two meters from MW39J (1995). Additionally, odours and elevated PID readings were noted during borehole excavation of MW39R.
Record 6 (2015)	Waste disposal and/or historic infilling impacting groundwater (deep).	Phenoxies and chlorophenols (including 2,4-DB; 2,4,5-TP; PCOC).	Contaminant concentrations recorded at MW39R. Concentrations of select analytes exceeded applicable guidelines (see **Figure 8, Appendix A**).
Record 4 (2014)	Historic infilling.	N/A	The report outlines observations made between 1995 and 1997, during drilling of Borehole 39 (and associated delineation boreholes), and Borehole 50, all located around the general area

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
			of Building 41 (general area of former pond). Fill (refuse) materials encountered included metal, wood, wire, concrete rubble. Odours and/or "rainbow" sheening noted at Boreholes 30 and 39a, at depths up to 27 m bgl.

10.3 Grassed area between carpark and stormwater pond (SV9000)

Along the southernmost end of the Central portion of the site, there is a steep drop in elevation at the edge of the primary manufacturing area. At the foot of this drop several site features (carpark, former brine extraction buildings, storage bund and tanks, solvent storage bund and tanks tradewaste tanks, and a stormwater pond) occupied an otherwise vacant area of the site. Tradewaste infrastructure and bulk storage is known to have occurred in this area of the site. Limited analytical data has been collected from this area of the site, however on multiple occasions historic drilling operations have noted anomalies within the boreholes, which indicates potential historic infilling over this area.

Table 10.4: Summary of reviewed information

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 4 (2014)	Possible waste disposal and/or historic infilling.	N/A	Indicative location only. Report stated, "three foundation bores drilled for firewater tank" during 1976. This is believed to be the same general location where a separate record (record 18, refer below) notes pieces of burnt timber were encountered. Noting the mana whenua history of the site, burnt timber may pre-date European colonisation.
Record 55 (1988)	Possible chemical spills from the manufacturing process areas and associated infrastructure.	N/A	The record mentions 'obnoxious odours' during excavations in other areas of the site. Observations suggest contamination may also exist in other areas, including the 'brine extraction area' (presumed to be either Building 60 or Building 61).
Record 44 (1992)	Possible chemical storage/spills.	Sulphates	Storage of tradewaste effluent ("acidic brines") within a bulk tank and equalization tank (Building 61), the latter of which is used to "buffer any variation".
Record 18 (1996)	Possible waste disposal and/or historic infilling.	N/A	The report outlines observations made during drilling of Borehole 8. A "piece of burnt wood" was noted at a depth of 5.8 m bgl. The report also noted this location was in close proximity to previous bore locations, namely "Bore No.2", where "several pieces of burnt timber" were noted at a similar depth. Noting the mana whenua history of the site, burnt timber may pre-date European colonisation.
Record 6 (2015)	Possible waste disposal and/or historic infilling impacting soil.	PAHs	Limited sampling from within single soil borehole/monitoring well MW109 (see **Figure 8,** Appendix A). Contaminant concentrations recorded within shallow soils (0.5 m bgl).

10.4 Dangerous Goods Compound

An approximate 3,000 m^2 bunded area is present within the northwest corner of the Southern portion of the site. Located within this area are Building 29 and 68, which along with the rest of the area are used to store dangerous goods and hazardous wastes. Additionally, select documents indicate this area of the site has been subject to infilling, with numerous materials (including potentially contaminated materials) being utilized.

Table 10.5: Summary of reviewed information

Source	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 45 (1979)	Chemical storage (and possible spills) of stockpiled material associated the TCP Plant and liquid incinerator area.	TCA, TCDD, xylene	Limited soil sampling beneath the Dangerous Goods Compound, as well as sampling of drummed anisole and wipe tests of stockpiled material stored within compound. TCDD concentrations were recorded within all material sampled. The document mentions an impacted area of 1,500 square ft (approximately 150 m^2) within the Dangerous Goods Compound. The document outlines suggested options for managing the contaminated material, including burial of the waste with erection of a new building, ploughing the area monthly to facilitate aerobic degradation of the TCDD, and purchase of a solid's incinerator. The document notes xylene was present in the timber and sub-surface, which would increase the mobility of TCDD, but as this evaporated over time the by-product anisole would crystalize and increase the TCCD stability.
Record 54 (1979), Record 4 (2014)	Possible chemical storage/spills associated with material from TCP Plant	TCDD	Further testing for TCDD was undertaken comprising; surface wipes (10 samples), soil sampling (8 samples), and sampling of wood shavings (2 samples) within the by-product anisole storage compound (presumed to be the Dangerous Goods Compound). Testing results recorded contaminant concentrations within all material sampled.
Record 57 (1981)	Chemical storage (and possible spills) from storage tank within the dangerous goods compound.	N/A	Potential contamination associated with a contaminated methanol tank, which may have been located within the Dangerous Goods Compound. This may also refer to Building 41, which exists outside the Dangerous Goods Compound.

Source	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 4 (2014), Anecdotal information (acquired 2023)	Chemical storage/spills over "deteriorated asphalt".	N/A	Report refers to an earlier investigation (Record 44) which suggests solvents "deteriorated the asphalt seal resulting in some soil contamination". The report notes an HDPE liner was lain beneath Building 68 following remediation of the area. Anecdotal) information suggests a large spill "melted" the asphalt and likely leaked to the underlying soil in this area. During a site visit an HDPE liner was observed on the exposed North bank within Building 68, it is unclear if this liner is the same liner referenced in the report, and/or is an extension of the liner which may exist beneath the concrete slab.
Record 46 (1984)	Chemical storage (and possible spills).	TCDD	Soil sampling from soils across the Dangerous Goods Compound (up to 0.2 m bgl). Contaminant concentrations were identified in surface samples. A depth profile in one location showed increasing TCDD with depth.
Record 55 (1988)	Chemical/material storage and associated spills. Potential historic infilling of contaminated material (drummed production waste, soil, and gravel).	N/A	The document mentions two areas of the site with known contamination, both having been covered with an HDPE liner and concrete. The document states sampling of gravel beneath Building 68 confirmed ground contamination. Crushed organophosphate drums believed to be buried in the compacted clay used to fill the area during construction.
Record 44 (1992)	Chemical storage/spills of production wastes.	Solvents	Production wastes unsuitable for off-site disposal were stored within the Dangerous Goods Compound. The wastes were generally stored in drums. Weathering of drums led to contents being spilt, consequently deteriorating the asphalt, and impacting soil. Contaminated soil remains beneath Building 68, which was used to store wastes prior to incineration.
Record 19 (1996)	Chemical storage/spills.	Phenoxies, chlorophenols	The document notes contamination is sourced (in-part) from the storage of chemicals over "inadequate" areas.
Record 7 (2017)	Chemical storage (and possible spills) and/or historic infilling.	Metals, VOCs, phenols, PAHs, volatile halogenated hydrocarbons,	Limited soil sampling within the Dangerous Goods Compound, targeting soils up to 1.0 m bgl. Ground Penetrating Radar (GPR) undertaken did not identify the targeted buried drums. Soil testing results indicate contamination within the northern area of the compound.

Source	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
		chlorobenzenes, PCBs, pesticides, phthalates, TPH	Sample locations were confined to accessible areas of the base of the compound. Building 68 was present at time of investigation and samples were not collected beneath it. No sampling was undertaken over the banks of the compound.
Anecdotal information (acquired 2023)	Chemical storage/spills and/or historic infilling.	TCA in xylene (containing high levels of TCDD).	Waste drums exhumed from Ngahoro/Waireka stored in Dangerous Goods Compound subsequently leaked. Waste drums from the TCP solvent extraction purification process was also stored here with some small leaks due to drum corrosion. Potentially beneath Building 68.

10.5 Liquids and solids incinerators

The liquids incinerator (Building 30) and solid wastes incinerator (Building 64) are located on either side on an access road which borders the Central portion of the site. Reviewed information sources indicate potentially contaminating activities have occurred over these areas, in relation to incineration of contaminated material, stockpiling of contaminated material within the building compounds, and/or spills associated with contaminated material storage/building processes.

Table 10.6: Summary of reviewed information

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
Record 57 (1981), Record 59	Possible disposal (incineration) of contaminated material.	N/A	Steel vessels may have been cut up and incinerated. Such vessels may have included storage tanks (including USTs).
Record 45 (1979)	Possible storage of contaminated material.	TCA, TCDD and xylene	Document mentions the liquids incinerator as the source area of some contaminated material (assorted rubbish).
Record 46 (1984)	Possible chemical/material storage and associated spills.	TCDD	Two samples of surface soil collected within the liquid incinerator compound. Concentrations of TCDD were recorded within both samples.
Record 52 (1985)	Chemical/material storage and associated spills.	TCDD	Soil sampling surrounding liquid incinerator compound, located immediately north of the liquids' incinerator building. Concentrations of TCDD were recorded within all (six) samples. Odours and visual evidence of contamination noted over a section of the area investigated.
Record 47 (1986)	Storage of contaminated material.	TCA and TCDD	Sampling of excavated material (soil and concrete rubble) stockpiled in incinerator compound. Concentrations of TCA and TCDD were recorded in all samples.
Record 58 (1985), Record 51 (1985), Record 48 (1986)	Possible residual contamination from incinerator emissions	TCDD	Protocol and results for limited soil sampling targeting incinerator emissions. Soil sampling undertaken in 1985 did not record TCDD concentrations above the laboratory limit of reporting. However, analysis from a different laboratory did record concentrations within select samples.

Source (Year)	Potentially Contaminating Activity	Stated CoC	Key commentary/previous investigations
			It cannot be confirmed if identical samples were used across both laboratories. However, based on sampling dates (both during April 1985), and sample IDs, it is likely the same samples were used.
Record 55 (1988)	Chemical/material storage and associated spills.	N/A	The document mentions two areas of the site with known contamination, both having been covered with an HDPE liner and concrete. The document states sampling of gravel beneath Building 30 confirmed ground contamination.
Record 44 (1992)	Disposal (incineration) of contaminated material	N/A	Liquid and solid wastes disposal (incineration) undertaken on an as-required basis. Incinerated content included (solid) wastes exhumed from Ngahoro and other solid wastes generated by plant activities.
Record 22 (1994)	Possible residual contamination from incinerator emissions	PCDD/F (namely TCDD)	Contaminants emitted from the incinerator included PCDD/F. The concentrations of these contaminants were monitored as required by the discharge (to air) consent. Select monitoring data (1994-1995) has indicated concentrations complied with the consent limit.
Record 43 (1988), Anecdotal information (acquired 2023)	Residual contamination from incinerator ash	PCDD/F, metals	Comment that ash from the solid incinerator was stockpiled (location not specified) over recent years while analytical capability was upgraded. At the time of the reporting, disposal arrangements were being renegotiated with NDPC. Anecdotal information indicates the ash was stored in sealed 200L drums at various times in Building 18, Building 19, and Building 68 prior to disposal.

10.6 Other areas (all portions)

In addition to the specific areas mentioned above, reviewed information suggests potentially contaminating activities have been undertaken across other areas of the site. The activities are largely similar to those mentioned above, and primarily relate to the chemical manufacturing activities undertaken on site as well as the management of raw materials and by-products (production wastes).

Table 10.7: Summary of reviewed information

Source (Year)	Potentially Contaminating Activity (Area)	Stated CoC	Key commentary/previous investigations
Record 4 (2014), Record 55 (1988), Record 46 (1983), Record 53 (1983), Record 49 (1986)	Chemical storage/spills near the northern boundary of the site.	N/A	Redundant/obsolete manufacturing vessels and equipment were reportedly stored near the north-west boundary of the site. Select (largely anecdotal) information suggests this may have included storage within a building (Building 56). Whilst not stated in the records, historical imagery shows materials stored on bare ground over this general area.
Record 4 (2014), Record 55 (1988), Record 44 (1992), Record 59, Anecdotal information (acquired 2023)	Possible chemical storage and/or spills associated with save-alls and the tradewaste system outside the central portion of the site.	Phenoxies, solvents, sulphur, solids ('sludge')	Predominantly across the Central portion (main production areas), however also within the Northern and Southern portions. Ground contamination may have occurred throughout the tradewaste sewer network, particularly where blockages, or deterioration have resulted in leakages. Reported vertical extent of potential contamination beneath tanks associated with the tradewaste (effluent) system between 2-4 m bgl. Tradewastes were captured within some save-all locations. Repairs to the integrity of save-alls were undertaken during early 1988. Phenoxy and chlorophenol concentrations have been recorded in groundwater bores within the northern portion of the site (MW20, MW41 and MW42) during select groundwater monitoring rounds.
Record 4 (2014), Record 44 (1992), Record 47 (1986), Record 55 (1988), Anecdotal information (acquired 2023)	Chemical storage (and possible spills) and/or historic infilling over the Southern portion of the site.	TCA, TCDD	In 1986, sampling of contaminated soil and demolition material behind "R&D" (Building 20). Recorded concentrations of TCA and TCDD. Anecdotal observations and select documents suggest drums stored in the south-eastern corner of the site and possibly buried within grassed areas of the southern portion. Excavation of a stormwater line unearthed "green

Source (Year)	Potentially Contaminating Activity (Area)	Stated CoC	Key commentary/previous investigations
			bag shaker dust". Information from select documentation (Record 44) indicates this may be dusts from filter bag collectors. Demolition material reportedly used as fill in the Southern portion of the site. Drummed raw materials and production wastes reportedly stored immediately south/west of Buildings 18 and 19, including a washdown area for exhumed drums with runoff allowed to soak to ground. Buried production wastes (unsuitable for offsite disposal) south of Building 19.
Record 55 (1988), Record 44 (1992)	Historic infilling adjacent to the western boundary of the site.	N/A	Demolition material used as fill over an elevated section of the site, adjacent to the western boundary. Crushed drums may have also been used as fill material within the general area. Buried production wastes (unsuitable for offsite disposal) within the bank north of the Dangerous Goods Compound.
Record 55 (1988)	Possible chemical spills from the manufacturing process areas and associated infrastructure.	N/A	Excavations in areas west and south of Building 15 exposed liquid with a very 'obnoxious' smell noted. Similar contamination may be present beneath the floor of select buildings in/around the main production area (refer to **Section 10.1**).
Record 4 (2014), Record 44 (1992), Record 57 (1981), Anecdotal information (acquired 2023)	Chemical storage (and possible spills) associated with USTs.	Numerous (refer to Record 57), namely contaminated xylene, methanol, iso-butanol, iso-octanol, diesel	Potential contamination associated with diminished structural integrity of two underground storage tanks. Reporting (Record 44) following removal of underground storage tanks stated all contaminated soil was removed for treatment. Limited validation testing of ground contamination following removal of USTs. Soil testing results could not be verified
Record 43 (1988)	Residual contamination from site emissions across Southern portion (particularly the southeastern corner) - grassed area between Incinerators and Paritūtū Road (downstream of predominant wind direction).	PCDD/F	Sampling of surface soils across the site. Concentrations of PCDD/F were recorded in multiple samples. The report stated that, in areas now covered by an asphalt cap, elevated concentrations of PCDD/F may be present.

Source (Year)	Potentially Contaminating Activity (Area)	Stated CoC	Key commentary/previous investigations
Record 57 (1981), Record 44 (1992), Record 4 (2014)	Chemical storage and/or spills associated with the above-ground storage tanks.	Numerous (refer to Record 57), namely 2,4,5-T and 2,4-D esters, contaminated methanol	Various materials have been stored within above ground storage tanks. Where necessary, underground storage tanks were replaced by above ground tanks and located within bunded areas of the site.
Record 13 (2001)	Buried drums across the site containing potentially contaminating material from manufacturing processes.	Numerous, namely 2,4,5-T and 2,4-D esters, contaminated methanol	TRC undertook an investigation into alleged dump sites across New Plymouth. Part of the investigation included GPR surveys across three select areas of the Paritutu Site. The areas included “Site 1: adjacent to wellsite No 1” (MW1), “Site 2: adjacent to wellsite No 4” (MW4) and “Site 3. Adjacent to wellsite Nos 6 and 43” (MW6 and MW43). GPR scan lines were taken at 5 m spacings. The data collected from each location show normal undulating soil strata and no evidence of drum burial on site.
Record 61 (2022, 2023)	ACM in building materials, and surrounding soil.	ACM,	The site transfer record details provision by Corteva of an asbestos register which listed asbestos containing material (ACM) in buildings 2, 3, 5, 7, 13, 18, 19, 24, 45, 46, 47, 48 and 58. ACM was also identified in underground pipes and the tradewaste flow meter pit cover. Corteva provided asbestos removal certification for all of the above identified sources of asbestos prior to demolition. Further works were carried out by Corteva in Building 19 due to the identification of asbestos in roofing material, which was then stored on the building footprint. This asbestos was verified as being removed. As part of the determination of any contamination from this additional asbestos at Building 19, soil tests from the perimeter of the building were collected and confirmed presence of asbestos, considered likely to be from legacy wear and tear of the building cladding. Asbestos in soil remains present at select locations surrounding the former building 19 and a perimeter fence has been erected around the former building footprint.

11 Site walkover

Regular inspections are undertaken by T+T as part of the Dow legacy site management. The most recent site walkover was in October 2023. General photographs of the site are included in **Appendix G**.

Overall, key features noted during recent site walkovers are as follows:

- All the buildings have been demolished with the exception of:
  - The concrete buildings (Building 03) integral to the retaining walls of the raised process area, located in the Central portion of the site.
  - The Dangerous Goods Compound (Buildings 29 and 68).
  - Stormwater retention systems (Buildings 16 and 17).
  - Tradewaste flowmeter shed (Building 58) and adjacent below ground covered flowmeter pit.
  - Tradewaste under/over separator (SV1000) structure filled and capped on bank north of tradewaste Buildings 11 and 12.
- Demolition material (including wood, glass, and plastic) was observed across the former building areas of the site. However, potential asbestos-containing material (ACM) (among other demolition material) was observed surrounding the concrete base of Building 02, with potential ACM fragments observed adjacent to Buildings 64, 57, 46, and 19.
  - Along the retaining wall associated with Building 03, demolition material and sediment were observed falling from the gaps.
- A black (presumably plastic) liner and timber were observed along the western side of Building 03, between the top the retaining wall and the overlying concrete floor. A similar black liner was also observed beneath the concrete floor of the northernmost side of Building 64.
  - A black liner (potentially thicker) was also observed along the northern (interior) wall, within Building 68.
  - Segments of a black liner (or similar) were also observed protruding from beneath the building footprints of Building 44 and Building 20.
- The grassed areas of the site were in good condition being regularly mowed and weed controlled.
- Areas around the former Building 03 appeared to have demolition debris and sediment deposition in low areas of the concrete where rainwater was pooling. A strong solvent odour was evident within these areas.
- There was evidence of former storage of round drums on the concrete adjacent to Buildings 03 and 30, as rust staining and/or fragments of deteriorated (rusted) metal were observed.
- A strong localised solvent odour was also evident when inspecting the vicinity of former Building 04.
- A strong localised hydrocarbon odour was noted when inspecting the vicinity of the Brine extraction and tradewaste areas (Buildings 11, 12, 60, and 61).
- Three fill points were observed adjacent to Buildings 09, 15 and 30. The fill points had been welded shut. Anecdotally (via a site contact) these were process / town water pipes that could not be fully isolated and sealed until the end of site demolition.
- Pumps were servicing stormwater ponds SV9000/9100 and SV8000. Stormwater from the ponds is irrigated to the grassed area south of the Dangerous Goods Compound.

12 Potential for contamination

The site has had a long history of agrichemical manufacturing and formulation. From the reviewed information and corroboration of anecdotal information, the following sections outline the historical environmental events and potentially contaminating activities which may have led to contamination of the soil and groundwater at the site.

It is evident that industrial hygiene practices today have evolved considerably from those used at the site in the 1960s – 70s. From the 1980s onwards, and particularly when the RMA came into force in 1991, industrial hygiene practices at the site were improved greatly and incident reporting, health and safety, and recording practices were more apparent.

12.1 Potential for contamination

This investigation has identified that HAIL activities were (or are likely to have been) undertaken at this site. The activities, potential contaminants, and assessment of the potential magnitude of the effects are presented in **Table 12.1.**

Table 12.1: Potentially contaminating activities

Land use/activity	Potential contaminants	Likelihood, magnitude, and possible extent of contamination	Ministry for the Environment Hazardous Activities and Industries List (HAIL)
Manufacture, storage, and/or spills of numerous chemicals across the site (including those associated with USTs, save-alls, and the tradewaste system), primarily across the main production areas (Central portion) of the site	Various – dependant on the particular process area, likely to include: Metals, Phenoxies, Aromatic acid herbicides, Chlorophenols and chloroanisoles, OCPS, OPS, Triazines, Solvents (particularly, methanol, iso-butanol, xylene) TPH, PCDD/F (TCDD), Sulphates.	Numerous lines of evidence acquired through this investigation indicate soils have been contaminated by former onsite manufacturing activities, and/or releases from the associated infrastructure. The limited investigations undertaken across the Central portion indicate ground contamination exists beneath buildings and associated infrastructure (such as tradewaste service lines). Given the age of investigations undertaken and the areas assessed, the extent/magnitude of any associated ground contamination cannot be accurately determined. Where present, associated ground contamination is likely to be focused within near surface soils across the main production area(s), and/or former chemical storage areas (such as the Dangerous Goods Compound). Additionally, deeper ground contamination is indicated to have occurred as the result of certain deteriorating sub-surface features (e.g., USTs, save-alls, tradewaste network, and the former lagoon/pond). Specific areas of contamination include near/beneath Buildings 03, 13, 15 and 48, where there is documented evidence of chemical spills and/or leaks.	A2 – *Chemical manufacture, formulation, or bulk storage* A3 – *Commercial analytical laboratory sites* A6 – *Fertiliser manufacture or bulk storage* A9 – *Paint manufacture or formulation (excluding retail paint stores)* A10 – *Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds* A11 – *Pest control including the premises of commercial pest control operators or any authorities that can carry pest control where bulk storage or preparation of pesticide occurs, including preparation of positioned baits or filling or washing of tanks for pesticide application* A12 – *Pesticide manufacture (including animal poisons, insecticides, fungicides, or herbicides) including the commercial manufacturing, blending, missing, or formulating of pesticides* A14 – *Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of drugs with the potential for environmental discharges* A17 – *Storage tanks or drums for fuel, chemical or liquid waste* G2 – *Drum or tank reconditioning or recycling*

Land use/activity	Potential contaminants	Likelihood, magnitude, and possible extent of contamination	Ministry for the Environment Hazardous Activities and Industries List (HAIL)
Incineration of contaminated materials (within dedicated solids and liquids incinerator compounds)	PCDD/F, TCA, xylene, metals, PAHs.	Reviewed information suggests incineration of material since the mid-1970's has been undertaken on an as-required basis. Numerous documents indicate material incinerated included contaminated wastes, both solid (refuse) and liquid (such as contaminated manufacturing by-products). Limited soil sampling data does indicate contamination within soil at the site boundaries.	G5 – *Waste disposal to land* I – *Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment*
Collection of potentially contaminated stormwater flows and/or wastes from the main production area of the site	Unknown, contaminants may vary depending on the particular process area, however, may include: Phenoxies, Aromatic acid herbicides, Chlorophenols and chloroanisoles Solvents PCDD/F (TCDD).	Reviewed information suggests the presence of two ponds existing near the western boundary of the site, which are indicated to have primarily received stormwater (overland) flows. However, disposal of other potentially contaminated materials (sludges and drums) is believed to have occurred. Results from soil (and groundwater) sampling indicate contamination across this general area of the site (e.g., the former pond ("lagoon")). Given the age and extent of investigations which have been undertaken over this area (with particular regard to soil contamination), the extent/magnitude of any ground contamination cannot be accurately determined. We note soil results collected across the general area of the former pond ("lagoon") recorded elevated contaminant concentrations, with detections of such contaminants in soil at depths up to 25 m bgl.	G6 - Waste recycling or waste or wastewater treatment I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment
Isolated historic infilling, including production wastes, timber, demolition material, and contaminated soil/gravel	Unknown but a broad range of contaminants possible, particularly if fill materials were	Reviewed documentation indicates that infilling has been undertaken across multiple areas of the site. Based on the reviewed information, historic infilling is indicated to have occurred in multiple isolated areas within the Southern and Central portions of the site including grassed areas of the site (Southern portion), as well as within the Dangerous Goods	G5 – Waste disposal to land I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment

Land use/activity	Potential contaminants	Likelihood, magnitude, and possible extent of contamination	Ministry for the Environment Hazardous Activities and Industries List (HAIL)
	sourced from manufacturing areas of the site or produced waste. Specific contaminants include those similar to that mentioned above, in addition to: Metals, PCP, PAHs, Asbestos.	Compound (specifically below Building 68), and the land immediately to the north. Based on the reviewed information, fill material may have included production wastes, raw materials, building materials, crushed barrels and/or contaminated soil/gravel. Depending on the nature of the fill materials used, surrounding soils and/or groundwater may have been impacted.	
Above ground storage of chemicals (including production wastes).	Various – dependant of the particular process area (refer above).	Based on the reviewed information, above ground storage of chemicals is indicated to have occurred in multiple isolated areas of the site (across all portions). Particular areas include the Dangerous Goods Compound (particularly Building 68), Building 41, Building 30, Building 19, Building 20, and the south-eastern corner of the site.	A17 – Storage tanks or drums for fuel, chemical or liquid waste I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health
Workshop/maintenance buildings	Metals, hydrocarbons, PCBs in addition to contaminants associated with chemical manufacture (refer above).	Potential spillages from the former (but unverified) workshops, which may have included refuelling areas (not confirmed) and a maintenance area (Building 05), and fork truck garage (Building 55). Additionally, anecdotal information indicates forklifts were commonly used to transport exhumed drums, and therefore may have accumulated (and tracked) contaminants associated with buried waste products (particularly if inadequate decontamination between uses).	I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment

Land use/activity	Potential contaminants	Likelihood, magnitude, and possible extent of contamination	Ministry for the Environment Hazardous Activities and Industries List (HAIL)
Substations and Transformer	Metals, hydrocarbons (TPH/PAH), solvents, PCBs and asbestos.	Both existing and former substations are present within four isolated areas of the Central portion of the site, and one former transformer in the South portion of the site. Spills and leaks resulting from the general operational activities associated with these areas may have impacted surface soils. Contamination of deeper soils and/or local groundwater may have occurred depending on factors such as the volume of product released to ground. Investigation of potential ground contamination over these isolated areas has not been undertaken to date.	B2 – Electrical transformers, including the manufacturing, repairing, or disposing of electoral transformers or other heavy electrical equipment. B4 – Power stations, substations, or switchyards I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment
Fire Fighting foam storage/training/ use	PFAS	Anecdotal information reports the storage of firefighting foam in Building 52. Aqueous firefighting foams used in the 1970s - 1980s may contain C8 PFAS. Spillage or leaks from storage, as well as training and use in fire response could have led to contamination. Contamination of deeper soils and/or local groundwater may have occurred depending on factors such as the volume of product released to ground. Investigation of potential ground contamination has not been undertaken to date.	I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment
Former structures (buildings and underground services) which may have incorporated lead-based paint and/or asbestos containing materials (ACM) in their construction.	Lead, asbestos (fibres or fragments)	Former buildings located across the site since the 1960s may have included lead paint and/or asbestos roofing or cladding. Anecdotal information indicates sand blasting occurred periodically during maintenance of onsite structures. Accordingly, surface soils in the vicinity of the structures may have been contaminated by such materials during weathering, or demolition works, the latter of which being influenced by uncontrolled removal/demolition works. Contamination (if any) may be highest in near surface soils immediately surrounding the former buildings. ACM (in particular) was confirmed within construction material associated with Building 13, Building 19, and Building 20.	I – Land subject to intentional or accidental release of a hazardous substance in sufficient quantity to be a risk to human health or the environment

Land use/activity	Potential contaminants	Likelihood, magnitude, and possible extent of contamination	Ministry for the Environment Hazardous Activities and Industries List (HAIL)
		Furthermore, anecdotal information indicates underground ACM pipes (firewater, town/process water) may be present across the site (particularly within the Southern portion). Asbestos contamination from buried pipes is generally low risk (e.g., not exposed to weathering) except where the uncontrolled disturbance of pipes has occurred.	

12.2 Conceptual site model

A Conceptual Site Model (CSM) as defined by MfE in the Contaminated Land Management Guidelines[17], sets out known and potential sources of contamination, potential exposure pathways, and potential receptors. For there to be an effect from the proposed activity there has to be a contamination source and a mechanism (pathway) for contamination to affect human health or the environment (receptor).

A preliminary conceptual site model has been developed for the site which takes into account the available information about the site, and our understanding of the potential effects on human health and the environment. Potential exposure is influenced by current or proposed land use, a proposed land use is not yet known however (based on the current land use and potential future remediation works) an industrial land use has been assumed for the site given this is the current listed land use.

The CSM is presented in **Table 12.2** and a graphical representation of the CSM is provided in **Appendix H**.

[17] Ministry for the Environment, updated 2021, *Contaminated Land Management Guidelines No. 5 Site Investigation and Analysis of Soils.*

Table 12.2: Preliminary Conceptual Site Model

Source	Potential exposure pathways	Receptor	Pathway Assessment
Groundwater contamination (Shallow and Deep Aquifer)	Groundwater flow to cliff seeps (Deep Aquifer)	Recreational users Shore biota Public consuming biota	**Potentially Complete:** Further sampling would be required to inform impacts from site contamination.
	Groundwater flow to coastal marine area (Deep Aquifer)	Recreational users Marine biota Public consuming biota	**Potentially Complete:** Further sampling would be required to inform impacts from site contamination.
	Groundwater flow to Herekawe Stream (Shallow Aquifer)	Recreational users	**Potentially Complete:** Limited testing undertaken. Contaminants detected at concentrations historically assessed as several orders of magnitude below site specific screening levels, unclear if contaminants are from the site or another upstream source.
		Freshwater biota	**Potentially Complete:** Further sampling would be required to inform impacts from site contamination.
		Public consuming biota	**Potentially Complete:** Limited testing undertaken. Contaminants detected at concentrations historically assessed as several orders of magnitude below site specific screening levels, unclear if contaminants are from the site or another upstream source.
	Groundwater flow to nearby properties (Shallow Aquifer)	Abstraction of groundwater for drinking or other uses	**Incomplete:** No nearby consented water abstraction takes have been identified and future groundwater usage is considered unlikely.
Stormwater contamination	Stormwater directly discharged to Herekawe Stream	Recreational users Freshwater biota Public consuming biota	**Potentially Complete:** Further sampling would be required to inform impacts from site contamination.
Ground Contamination (soil and concrete)	Dermal contact Ingestion of contaminated materials (soil) Inhalation of volatile contaminants, dust, fibres Mobilisation during disturbance works (including discharge to surface water or groundwater)	Site users (those involved in ground disturbance works) Potential future site users (if contaminated soils are not managed appropriately to prevent future exposure pathways) Terrestrial ecology	**Onsite receptors - complete:** (DSI required): The limited sampling that has been undertaken within certain areas of the site has confirmed contamination. Moreover, there has been limited soil sampling across the wider site. Uncertain contamination extent (both laterally and vertically). Limited recovery of some samples/results, with associated analytical data unavailable.

Source	Potential exposure pathways	Receptor	Pathway Assessment
			Limited soil sampling undertaken across some potential areas of concern (e.g., main process areas of the site), with the validity of contaminant concentrations unable to be determined (given age of investigations). Additionally, potential CoCs (e.g., asbestos in soil) have not been targeted during previous investigations. Potential ACM identified during the site walkover within the site boundary would reflect a potential pathway to site and future site users only. Highly reliant on future use of the site and remediation works.
	Inhalation of volatile contaminants, dust, fibres Mobilisation during disturbance works (including discharge to surface water or groundwater)	Offsite - residents of surrounding properties and general public utilizing recreational areas	**Offsite receptors - incomplete currently:** The pathway would be complete if contaminated soils are not managed appropriately to prevent future exposure pathways.
	Vapour intrusion	Potential future site users	**Potentially Complete:** Vapour intrusion is considered most likely to present a potential risk to onsite receptors (via accumulation within onsite structures if contaminated soils are not managed appropriately to prevent future exposure pathways.
		Offsite - residents of surrounding properties and general public utilizing recreational areas.	**Incomplete:** Vapour intrusion is not considered to present a potential risk to offsite receptors.
	Excavated material disposed offsite (if required)	Offsite – receptors in vicinity of the disposal site, provided offsite disposal is required.	**Potentially Complete:** If offsite disposal is required there are potential receptors within the vicinity of the disposal site that could be affected if materials are not managed appropriately at the disposal site. There will be negligible human health effects if materials are disposed of to an appropriate receiving facility.

The preliminary CSM indicates that there is a potential for contamination to exist in surface soils, underlying soils, and groundwater (shallow and deep), which may present potential risks to receptors if future soil disturbance is proposed. Particular risks include those to site users, excavation workers, and downgradient environmental receptors. Further intrusive investigations involving soil sampling would be required to better inform actual and potential risks with respect to ground/groundwater contamination.

13 Data gaps

Several data gaps in the current understanding of contamination at the site have been identified, including:

- Relatively limited (and aged) soil sampling undertaken at the site, including in areas assessed as potentially at high risk of contamination (for example, around the main production facilities, including beneath recently demolished buildings). Specifically:
  - Limited soil sampling has been undertaken across the main production area of the site (e.g., beneath production buildings associated infrastructure). However, given the age of some (early) investigations, reported contaminant concentrations cannot be validated (e.g., no accompanying laboratory transcripts and varying laboratory methods of detection).
  - Where recent soil sampling has been undertaken, this has often been confined to the locations of soil boreholes, some of which were later converted into monitoring wells. As a result, lateral delineation of soil contamination has been largely limited to the locations of "delineation wells".
  - Some investigative sampling (test pitting) was undertaken during a 2015 (shallow soil and groundwater) assessment. Seven test pits were positioned to target areas of the site used for drum storage and/or waste disposal. In addition to a limited number of test pit locations, these test pits targeted soils up to 2.3 m bgl depth, it is possible (particularly in the elevated areas of the site), that potential sources of contamination (e.g., buried wastes/drums) exist at depths beyond that targeted in this investigation. Observations from the test pitting (as detailed in the report) did not indicate evidence of buried waste material, with the exception of a single fragment of plastic encountered at a depth of approximately 0.9 m bgl, within a single test pit. Furthermore, findings of the PSI indicate the presence of historical infilling beyond the general areas of the site where test pits were positioned in this investigation, and at greater depths.
  - Investigative sampling was also undertaken across the Dangerous Goods Compound, during a 2017 upgrade of the surface, however, the investigation locations were limited to a depth of 1.0 m bgl. As stated in **Section 10.4**, reviewed documentation from the Dangerous Goods Compound indicates the area was "cleaned", and "a HDPE liner was laid over the bunded area". This information suggests that a demarcation layer (HDPE liner) is present above potentially contaminated soils, given such a layer was not noted in the previous investigation report, it may be possible contaminated soils are present in the area and exist at a depth greater that that targeted in this investigation (1.0 m bgl). Alternatively, reviewed documentation also suggests contaminated soil is present beneath Building 68, an area of the Dangerous Goods Compound which could not be assessed due to investigation locations being confined to generally accessible areas.

- As stated in multiple reports for the site, the understanding of the Shallow Aquifer onsite is not comprehensive. Questions remain as to the lateral extent, flow direction, and magnitude/extent of potential contamination associated with the shallow groundwater, particularly within the Northern and Central portions of the site.
- While a series of groundwater monitoring wells are positioned around the area of known (soil and groundwater) contamination near MW39R, the precise area of soil and/or groundwater contamination is not well defined. This includes the lateral and vertical boundaries, as well as the original contamination source.
- The geometry and physical characteristics of the underlying andesite unit are not well understood. This includes the source of the andesite, lateral extent beneath the overlying sequence of sands, silts, and clays, depth to top of the andesite across much of the site, and the nature of jointing in the unit (if any). Jointing (if present) may result in preferential pathways for contaminated groundwater to reach sensitive environmental receptors. It is also unclear whether groundwater in the andesite is part of the Deep Aquifer or should be considered a separate aquifer.
- Data gaps in relation to the hydrogeological understanding limit establishing if there is a complete pathway for contaminated groundwater to reach the offsite freshwater and marine receptors. Marine ecological inspections and freshwater biological monitoring completed by TRC in annual monitoring[18] indicate that, if the pathway is complete, it is not causing any adverse ecological impacts and consequently likely a negligible to low risk.
- Asbestos has been identified as a potential CoC, and identified within onsite structures, however, has not been targeted during previous investigations, with the exception of Building 19 where asbestos was identified within the surface soils. Surface soils surrounding Buildings 20 and 13 have not been sampled for asbestos. Validation samples may need to be collected over these (and similar) areas to ensure the presence of these materials over the site's history and/or their removal (during site demolition) has not impacted soils which remain on the site.
- PFAS has also been identified as a potential CoC, through anecdotal accounts of Building 52 (a sprinkler station) using fire-fighting foam. Additionally, reviewed documentation lists Building 44 as a firewater tank. Limited soil sampling has been undertaken around Buildings 52 and 44, with no sampling for PFAS having been undertaken. Validation samples may need to be collected over these areas to determine the nature and extent of ground contamination from these potential contamination sources.
- Findings of the PSI have indicated hardstand surfaces such as roads, car parks and pavements present onsite within the period of time coal tar was commonly incorporated into such products[19]. Furthermore, select documentation indicated the presence of coal tar within roading of the northern portion of the site. On this basis, coal tar constituents may be present within roading (and associated surfaces) onsite. Validation samples may need to be collected from within these surfaces to determine the nature and extent of potential contamination associated with coal tar.

[18] Taranaki Regional Council, 2023. *Dow Chemical (NZ) Ltd Monitoring Programme Annual Report 2022-2023*. Technical Report 2023-71.

[19] Waste Management Institute New Zealand Incorporated (WasteMINZ), 2023. *Guidelines for Assessing and Managing Coal Tar Contamination in Roading*. Coal tar in roading guidance. Version 1.0 December 2023.pdf (wasteminz.org.nz).

14 Regulatory framework and resource consent requirements

Resource consents may be required to undertake a Detailed Site Investigation (DSI) which will include earthworks activities such as test pits and boreholes to sample soil. Therefore, a preliminary assessment of the potential resource consent requirements has been undertaken below.

Further detailed statutory analysis of the proposed activities will be required once the investigations have been planned and as part of the resource consent and Assessment of Effects on the Environment (AEE) preparation process.

14.1 Relevant RMA statutory documents

The following statutory planning documents are relevant to the site investigations:

- The Operative New Plymouth District Plan (ONPDP).
- The Proposed New Plymouth District Plan (PNPDP).
- Taranaki Regional Council Regional Freshwater Plan.
- Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)) Regulations 2011.
- Resource Management (National Environmental Standards for Freshwater (NESF)) Regulations 2020 (and 2023 amendments).

The rules that apply are determined by the site zoning and planning overlays. These are outlined in the table below.

Table 14.1: Zoning and planning notations

Zoning/planning notation	Comment
NPDC Proposed District Plan	
General Industrial Zone	Applies to the entire site
Site of Significance to Māori	Site 719 is located onsite. This is a Wahi Tapu site and mana whenua are Ngati Te Whiti.
National Grid Subdivision Corridor	This passes over the southeastern section of the site and along the western boundary of the site.
Papawhere/Mt Moturoa viewshaft	Applies to the entire site.
Airport flight path surface	Applies to the entire site.
NPDC Operative District Plan	
Zone: Industrial C and A	The majority of the site is zoned as Industrial C, with an area along the southern boundary zoned as Industrial A.
Waahi Taonga/Sites of Significance to Māori	Site 719 is located onsite.
Urban viewshaft 3	Applies to the entire site.
High Voltage Electricity Lines	These pass over the southeastern section of the site and along the western boundary of the site. Noting that at the time of this report issue these are being removed.

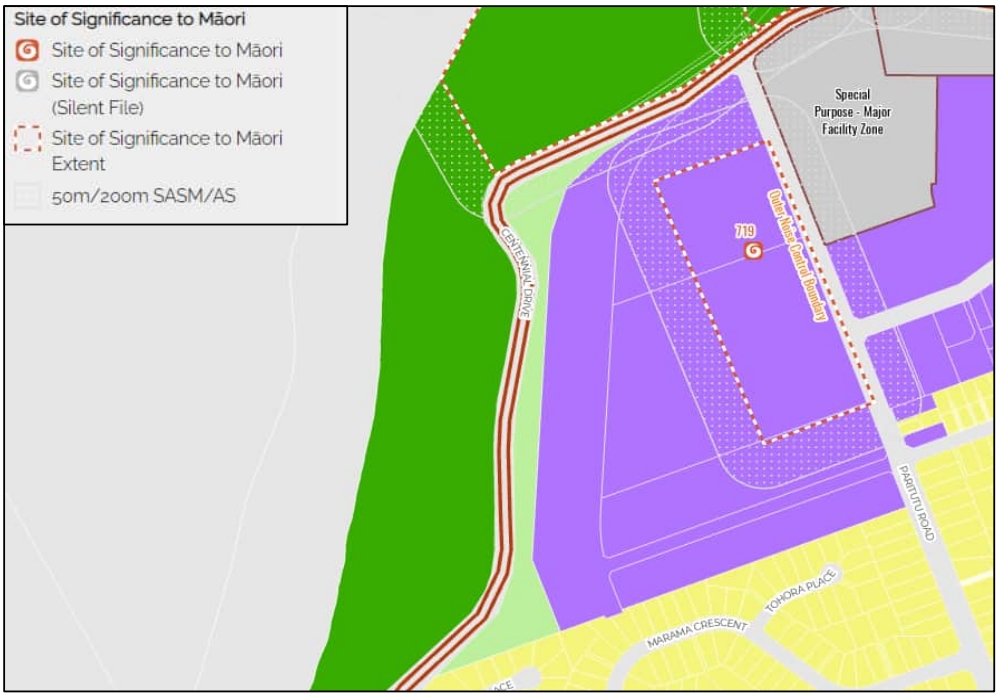

Figure 14.1: Sites of significance to Māori. Source: NPDC Proposed District Plan online maps

14.2 Taranaki Regional Council

A summary of the potential resource consent triggers is set out in **Table 14.2** below Our assessment indicates that the earthworks associated with site investigations can likely be a permitted activity.

This table constitutes a preliminary assessment of resource consent requirements. The resource consent requirements will be confirmed once the site investigations have been planned.

Table 14.2: Key potential resource consent requirements under the Regional Freshwater Plan

Activity	Rule	Comment
Earthworks for site investigations, namely test pits, and associated stormwater discharges	Permitted activity rule 25	**Permitted** The earthworks will likely be less than 1 ha in area and 3,000 m^3 in volume. Given the lack of streams nearby a discharge to surface water is unlikely. The disturbed areas can be stabilised following the completion of the soil disturbance. Therefore, the earthworks can likely comply with the permitted activity conditions.
Construction of a well[20], bore[21], or piezometer[22] for investigations	Permitted activity rule 46	**Permitted** Any bores or wells can likely comply with the permitted activity conditions. This should be confirmed once the details of the well or bores is known.

14.3 New Plymouth District Council

A summary of the potential resource consent triggers is set out in **Table 14.3** and **Table 14.4** below. Our assessment indicates that resource consent will be required overall as a discretionary activity. Given earthworks will likely be within a site of significance to Māori consultation with mana whenua will be required to understand and assess potential cultural effects.

This table constitutes a preliminary assessment of resource consent requirements. The resource consent requirements will be confirmed at the time of preparing the relevant resource consent applications.

[20] The TRC Regional Freshwater Plan for Taranaki defines a well as "a hole dug, augered or drilled, tapping the water-table or springs to a depth of 20 metres or less below the ground surface".

[21] The TRC Regional Freshwater Plan for Taranaki defines a bore as "a hole drilled into the ground and completed for the abstraction of water or hydrocarbons to a depth of greater than 20 metres below the ground surface".

[22] The TRC Regional Freshwater Plan for Taranaki defines a piezometer as "means a stand-pipe in the ground constructed for monitoring purposes only."

Table 14.3: Key potential resource consent requirements under the PNPDP – Appeals version.

Activity	Rule	Comment
Earthworks for site investigations, namely test pits	Permitted activity rule EW-R13.2 for earthworks in the General Industrial Zone (under appeal)	**Restricted discretionary activity** The 1,000 m^3 volume limit can likely be complied with. However, test pits may be up to 5 m deep which exceeds the permitted depth of excavations under EW-S2. Therefore, resource consent is likely required as a restricted discretionary activity under rule EW-R13.2.
Earthworks for site investigations, namely test pits, within a site of significance to Māori	Discretionary activity rule SASM-R17 (operative)	**Discretionary activity**
Earthworks for site investigations, namely test pits, within the National Grid Yard	Permitted activity rule NU-R33 (under appeal)	**To be confirmed** It needs to be confirmed whether earthworks will occur within the National Grid Yard to confirm if resource consent is required. The details of the earthworks (depth/diameter) are also required.

Table 14.4: Key potential resource consent requirements under the operative District Plan (ONPDP)

Activity	Rule	Comment
Earthworks for site investigations, namely test pits	Permitted activity rule IND49	**Restricted discretionary** The maximum cut depth limit of 3 m will likely be exceeded.

14.4 NESCS

14.4.1 Applicability

The NESCS came into effect on 1 January 2012. This legislation sets out nationally consistent planning controls in relation to managing soil with regard to human health.

The NESCS applies to activities on land where a HAIL activity has, or is more likely than not, to have occurred. Activities covered under the NESCS include soil disturbance, soil sampling, fuel systems removal, subdivision, and land use change.

The following table (**Table 14.5**), as provided in the NESCS Users Guide (April 2012), confirms the NESCS is applicable to the site.

Table 14.5: NESCS Applicability

NESCS Requirement	Applicable to site:
Is an activity described on the HAIL currently being undertaken on the piece of land to which this application applies?	No, the site is non-operational.
Has an activity described on the HAIL ever been undertaken on the piece of land to which this application applies?	Yes
Is it more likely than not that an activity described on HAIL is being or has been undertaken on the piece of land to which this application applies?	Yes
If 'Yes' to any of the above, then the NESCS may apply. The five activities to which the NES applies are:	
Is the activity you propose to undertake removing or replacing a fuel storage system or parts of it?	Potentially
Is the activity you propose to undertake sampling soil?	Yes
Is the activity you propose to undertake disturbing soil?	Yes
Is the activity you propose to undertake subdividing land?	No
Is the activity you propose to undertake changing the use of the land?	Potentially, the future use of the site has not been decided.
Conclusion: **The NESCS applies to the site.**	

Because known and potentially contaminating activities included on the HAIL have been carried out on the site, and the results of previous soil sampling investigation show that contaminant concentrations exceed background concentrations, **the NESCS regulations apply to the site**. In accordance with the NESCS, a DSI is required to adequately assess contamination risks to human health as part of the soil disturbance (among other potential activities) as part of the roadmap to remediation. Additional investigation is required to further assess contamination risks at the site.

The sampling, as part of the DSI, can likely be undertaken as a permitted activity under regulation 8(2), and the soil disturbance for test pits can likely be a permitted activity under regulation 8(3) provided the volume of soil disturbance is below 7,800 m^3. However, controls will need to be in place to protect human health, the soil will need to be reinstated to an erosion resistant state within 1 month, the works must take < 2months, and structures designed to contain contaminated soils must not be compromised. The final resource consent requirements should be confirmed once the investigations are confirmed.

Once a DSI is complete, the main remediation works will require likely require a **Restricted Discretionary** activity consent under Regulation 10 of the NESCS for soil disturbance. A Contamination Site Management Plan (CSMP) and a Remedial Action Plan (RAP) outlining how the works are proposed to be undertaken will be required to support the consent application. The CSMP would detail procedures to be followed to mitigate potential risks from soil contamination. The RAP would outline the remediation works to be undertaken based on the findings of the DSI. We anticipate that NPDC may agree to include the requirement for a CSMP and RAP as a condition of consent.

14.5 NESF

The NESF freshwater restricts earthworks within 100 m of natural wetlands. We are not aware of any natural wetlands onsite, therefore, the NESF is unlikely to be relevant. Whether any natural wetlands are present onsite should be confirmed prior to site investigations being undertaken.

14.6 Other consents and approvals required

14.6.1 Archaeological authority

We have reviewed the Archaeological Associations 'ArchSite' database. There are no registered archaeological sites or features onsite that may be affected by the works. However, there are a number of sites in the surrounding area and as noted above, the District Plan identifies there to be a wāhi tapu site onsite.

We recommend early discussions with mana whenua, NPDC, Heritage New Zealand Pouhere Taonga and an archaeologist to better understand the nature of the site of significance onsite. Whether an archaeological authority is required for its modification or destruction can then be confirmed.

With all earthworks there is a risk of accidentally discovering archaeological material. Should there be such a discovery, works will be required to cease onsite, and an Archaeological Authority may be required from Heritage New Zealand Pouhere Taonga to recommence. From lodgement of an application, this process takes approximately eight weeks. To minimise potential programme delays it is advisable to obtain a proactive archaeological authority prior to works commencing. This will require an assessment from an archaeologist to determine the risk of uncovering archaeological features and consultation with mana whenua.

14.6.2 New Zealand Electrical Code of Practice for Electrical Safe Distances 2001

Transpower completed the process of dismantling and removing the transmission towers and overhead wires surrounding the boundary of the site by the end of 2023. If earthworks are proposed in close proximity to the former transmission towers, we recommend that Transpower are contacted to confirm the proposed earthworks comply with the requirements of the New Zealand Electrical Code of Practice for Electrical Safe Distances 2001 (NZECP34:2001).

14.6.3 Health and Safety at Work (Asbestos) Regulations 2016

The management of asbestos in soils is regulated under the Health and Safety at Work (asbestos) Regulations 2016 (Asbestos Regulations). To achieve compliance with the Asbestos Regulations, Worksafe New Zealand has prepared an Approved Code of Practice (ACoP): Management and Removal of Asbestos (September 2016). The ACoP refers readers to the Asbestos in Soil Guidelines[23]. As outlined in the sections above, the PSI has identified asbestos as a potential CoC, with some investigation having identified impacts to soil form the use of ACM on site. On this basis, the Asbestos Regulations will apply to future ground disturbance works, where asbestos is present in soils.

The Asbestos in Soil Guidelines define the level of oversight and controls (including personal Protective equipment, decontamination etc.) that are required to be implemented dependent on the concentration of asbestos fibres/fines or fragments that are present in the soils. Soil sampling undertaken in May 2023 indicates the presence of asbestos in soil surrounding a former onsite structure (Building 19), at concentrations above human health criteria and will require Class B asbestos controls for any removal works.

In the absence of a sufficient quantity soil sampling data from remaining areas of the site, it is not possible to confirm the level of control that would be required. If asbestos in soil is present in these areas, and at concentrations above human health limits (as outlined in the Asbestos in Soil Guidelines), additional controls above standard earthworks controls and hygiene may be required to manage and mitigate potential risks. The findings of a DSI will provide further indication on the controls required to manage asbestos in soil. Where required, these controls will be outlined in a CSMP.

[23] New Zealand Guidelines for Assessing and Managing Asbestos in Soil – BRANZ, November 2017.

15 Conclusions

T+T has undertaken this PSI to evaluate the potential for contamination to be present at the Paritūtū site and assess the need for further investigations and contaminated land related consents for the ultimate remediation of the site in relation to the Remediation Roadmap. This investigation has compiled information from a majority or sources including council information, prior investigations, historic documentation (e.g. monitoring plans), and aerial photographs. The investigation has identified that potentially contaminating HAIL activities have been undertaken throughout the site's history and have resulted in soil and groundwater contamination, these include (but are not limited to) activities associated with chemical manufacture and other related operations (e.g. incineration), historical infilling, as well as the presence of workshops, substations and other structures which may have incorporated potential CoCs in their construction or intended use(s).

The preliminary conceptual site model indicates that there is potential for effects to human health, and/or the environment, which will depend on the magnitude and extent of contamination (to be determined as part of a DSI).

Although numerous contamination investigations and reporting have been carried out at the site historically, our assessment has identified a number of data gaps which need to be addressed as part of the roadmap to remediation. Additionally, consideration of asbestos and other potential contaminants are required under the current regulatory framework, including the Asbestos Regulations.

Because known and potentially contaminating activities included on the HAIL have been carried out on the site, and the results of previous soil sampling investigation show that contaminant concentrations exceed background concentrations, **the NESCS regulations apply to the site**. In accordance with the NESCS, a DSI is required to adequately assess contamination risks to human health as part of the soil disturbance (among other potential activities) as part of the roadmap to remediation. Additional investigation is required to further assess contamination risks at the site.

Additional investigation is required to further assess contamination risks at the site in order that the combined site investigations constitute a DSI to a scale and degree of detail commensurate with the potential effects associated with future ground disturbance works at the site. As stated in **Section 14.4.1**, the onsite activities and respective activity statuses based on the findings of this investigation are as follows:

The sampling, as part of the DSI, can likely be undertaken as a permitted activity under regulation 8(2), and the soil disturbance for test pits can likely be a permitted activity under regulation 8(3) provided the volume of soil disturbance is below 7,800 m^3. However, controls will need to be in place to protect human health as stated in **Section 14.4**.

Investigative sampling within the SASM in relation to a DSI, is considered likely to be undertaken as a Discretionary activity under SASM-R17 (operative) and resource consent is required within this area.

Once a DSI is complete, the main remediation works will require likely require a Restricted Discretionary activity consent under Regulation 10 of the NESCS for soil disturbance. Soil disturbance (and/or removal of a fuel storage system(s)) in relation to the ultimate remedial works, is considered likely to be undertaken as a Restricted Discretionary activity under Regulation 10 of the NESCS. On this basis, a CSMP and RAP would be required for implementation during any soil disturbance works.

16 Applicability

This report has been prepared for the exclusive use of our client Dow Chemical (NZ) Limited, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd
Environmental and Engineering Consultants

Report prepared by:

[redacted] ..... [redacted] .....

Authorised for Tonkin & Taylor Ltd by:

.....

Sarah Schiess
Project Director

Report certified by a suitably qualified and experienced practitioner (SQEP)as prescribed under the NESCS and the NESCS Users Guide (April 2012):

.....

Dr Andrew Pearson
Senior Environmental Consultant

11-July-2024
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SQEP Statement

Andrew Pearson SEQP qualification: BSc (Hons) Toxicology, PhD Environmental Science, CEnvP general. Andrew is a senior environmental consultant with 18 years of experience in chemical risk assessment and over 10 years of experience in risk assessment of contaminated sites. Andrew has been a senior/lead chemical risk assessor for central government and at Tonkin + Taylor on a range of high-profile issues including the MV Rena grounding, emergence of PFAS, the 2019 Whakaari eruption, and land and marine contamination investigations. Andrew has contributed on working groups for development of ecological soil guideline values and an Aotearoa strategy for emerging contaminants, and also led development of a national guideline for investigating hexachlorobenzene contamination in grazed vineyards and an international guideline for rapid risk assessment. Andrew is on the joint WHO/FAO roster of technical experts for exposure assessment of dietary contaminants and is a recognised data assessor for assessment of pesticides under the Agricultural Compounds and Veterinary Medicines Act.

Appendix A Figures

- **Figure 1. Site Location Plan**
- **Figure 2. Site Layout**
- **Figure 3. Key Site Activities 1960-1968**
- **Figure 4. Key Site Activities 1968-1970**
- **Figure 5. Key Site Activities 1970-2000**
- **Figure 6. Key Site Activities 2000-2014**
- **Figure 7. Potentially Contaminated Areas**
  - **Figure 7.0. Attribute table**
  - **Figure 7.1. Northern portion**
  - **Figure 7.2. Central portion**
  - **Figure 7.3. Southern portion**
- **Figure 8. Site and Monitoring Well Location Plan**

\\ttgroup.local\corporate\Wellington\TT Projects\21795\21795.0210\WorkingMaterial\GIS\Map_Documents\Figures\P21795_0210_Figures\P21795_0210_Figures.aprx Layout: P21795_0210_Figure 1 A3 Landscape 2024-Feb-08 12:56 pm Drawn by CHUT

Building No.	Most recent building use	Building No.	Most recent building use
1	Grounds (Gates etc)	37	Not Assigned
2	Administration/Laboratories	38	Maintenance Oil Store
3	Raw Material, Boilerhouse, Packaging and Waste Storage, Herbicide, and Insecticide Formulations	39	Spill Control Shed
4	Herbicides Packing, Raw Material Storage	40	No detailed record after demolition (possible caretaker building; appears to have been demolished late 1960s)
5	Maintenance Workshop and Store	41	Bulk Tank Compound (demolished 1988)
6	Finished Goods Warehouse, Cafeteria and Laundry	42	Bulk Tank Compound
7	Packaging Storage	43	Bulk Tank Compound
8	Storage Room	44	Fire Water Tank
9	Drawing Office/Process Engineering (removed in mid-1990s)	45	Fire Pump Shed
10	Offices (removed mid 1990s)	46	No.5 Substation
11	Equalisation Tank (Tradewaste)	47	Security Gatehouse
12	Retention Tank (Tradewaste)	48	Commodity Herbicides Plant
13	Disused TCP Plant (demolished 2014)	49	Sprinkler Station (Formulations)
14	Cooling Tower Chemicals	50	Container Test Storage
15	Product Development Laboratory	51	Dangerous Goods Storage 2 (Lab)
16	Stormwater Pond (SV9000, SV9100/SV9200)	52	Sprinkler Station (Phenoxy)
17	Stormwater Pond (SV8000)	53	Process Water Tank
18	Storage/Packaging	54	Paint Shop
19	Equipment / Packaging Storage	55	Fork Truck Garage
20	Disused Pilot Plant (demolished 2014)	56	No detailed record after demolition (Potential storage shed; demolished early 1990s)
21	No detailed record after demolition[1]	57	Packaging Storage
22	No detailed record after demolition[1]	58	Trade Waste Monitoring
23	Not Assigned	59	Dangerous Goods Storage (Maintenance)
24	Health Clinic	60	Brine Extraction Process
25	Packaging Storage	61	Brine Extraction (Storage Tanks)
26	Office (Tanker Drivers) (demolished early 1990s)	62	Materials Flow Offices
27	No.4 Substation	63	Site Services Offices (removed mid-1990s)
28	Cooling Tower	64	High Temperature Incinerator
29	Dangerous Goods Store	65	Not Assigned
30	Liquids Incinerator (demolished 2000)	66	Electric Fire Pump
31	Town Main Booster Pump	67	Emergency Equipment Shed (demolished early 1990s)
32	Sprinkler Station (Pilot Plant)	68	Hazardous Waste Storage
33	Covered Stairway	69	Valve House (Brine Extraction)
34	Not Assigned	70	Finished Goods Office
35	Sprinkler Station (Engineering)	71	Valve House (Building 06)
36	Dangerous Goods Storage 1 (Lab)		

Notes: 1 - Buildings 21 and 22 did not have detailed records over uses prior to demolition and site decommissioning, however they are considered likely to relate to small site offices, temporary portable offices or a caretaker shed in the vicinities of Buildings 4, 5 or 6.

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NOTES:
Basemap Aotearoa New Zealand Hillshade - Alpha: Eagle Technology, Land Information New Zealand. Hybrid Reference Layer: Esri Community Maps Contributors, LINZ, Stats NZ, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS. World Imagery: LINZ, Taranaki RC. NZ Topographic Relief (Vector): Eagle Technology, LINZ, StatsNZ, NIWA, Natural Earth, © OpenStreetMap contributors.. Historic Aerials 2007 - 2022:

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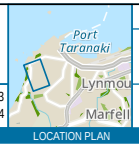
4	Fourth version	CHUT	CHSA	08/02/24



LOCATION PLAN

PROJECT No.	21795.0210	
DESIGNED	CHUT	FEB.24
DRAWN	CHUT	FEB.24
CHECKED	CHSA	FEB.24
APPROVED		DATE

CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE PARITUTU SITE BUIDING IDENTIFICATION
SCALE (A3) 1:2,000 FIG No. FIGURE 1. REV 4

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DESIGNED	CHUT	OCT.23	PROJECT	PARITUTU CONTAMINATED LAND ASSESSMENT
DRAWN	CHUT	OCT.23	TITLE	PARITUTU SITE LAYOUT
CHECKED	CHSA	OCT.23		
APPROVED	DATE		SCALE (A4)	1:3,500
			FIG No.	FIGURE 2.
			REV	0

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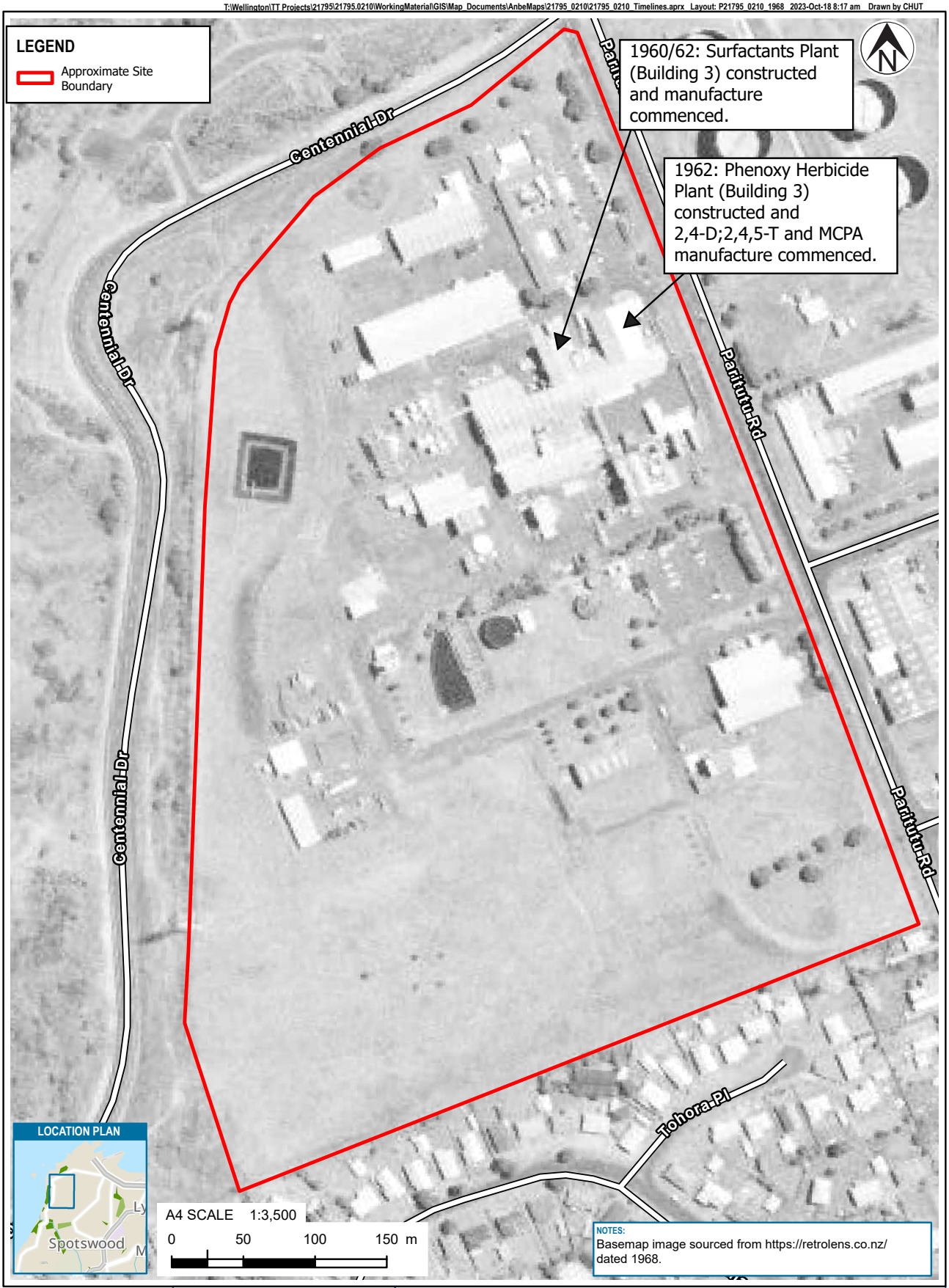

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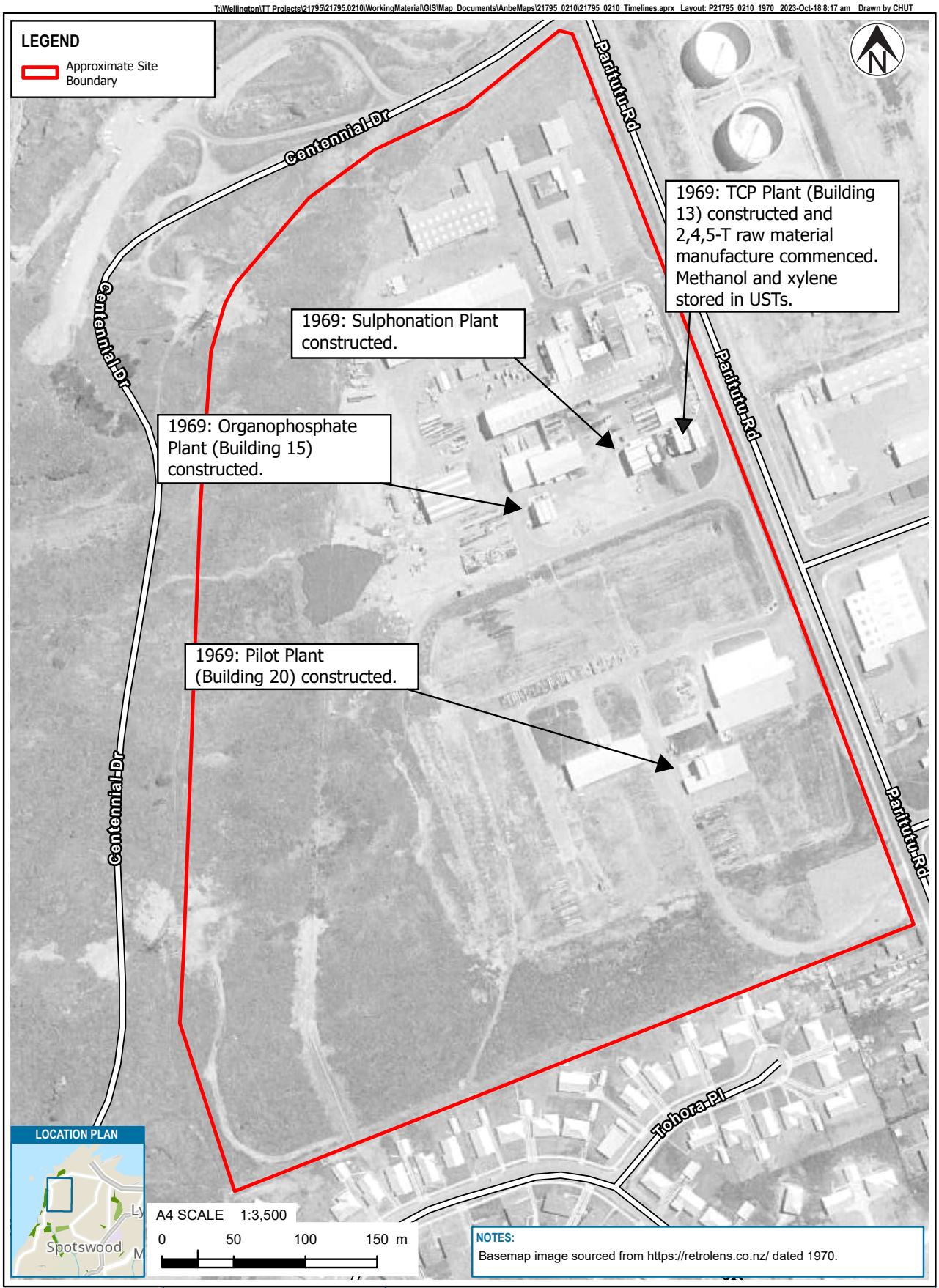
CLIENT **DOW CHEMICAL (NZ) LIMITED**

PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**

TITLE PARITUTU SITE KEY ACTIVITIES - 1960-1968

SCALE (A4) 1:3,500 FIG No. FIGURE 3. REV 0



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CLIENT **DOW CHEMICAL (NZ) LIMITED**

PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**

TITLE PARITUTU SITE KEY ACTIVITIES - 1968-1970

SCALE (A4) 1:3,500 FIG No. FIGURE 4. REV 0

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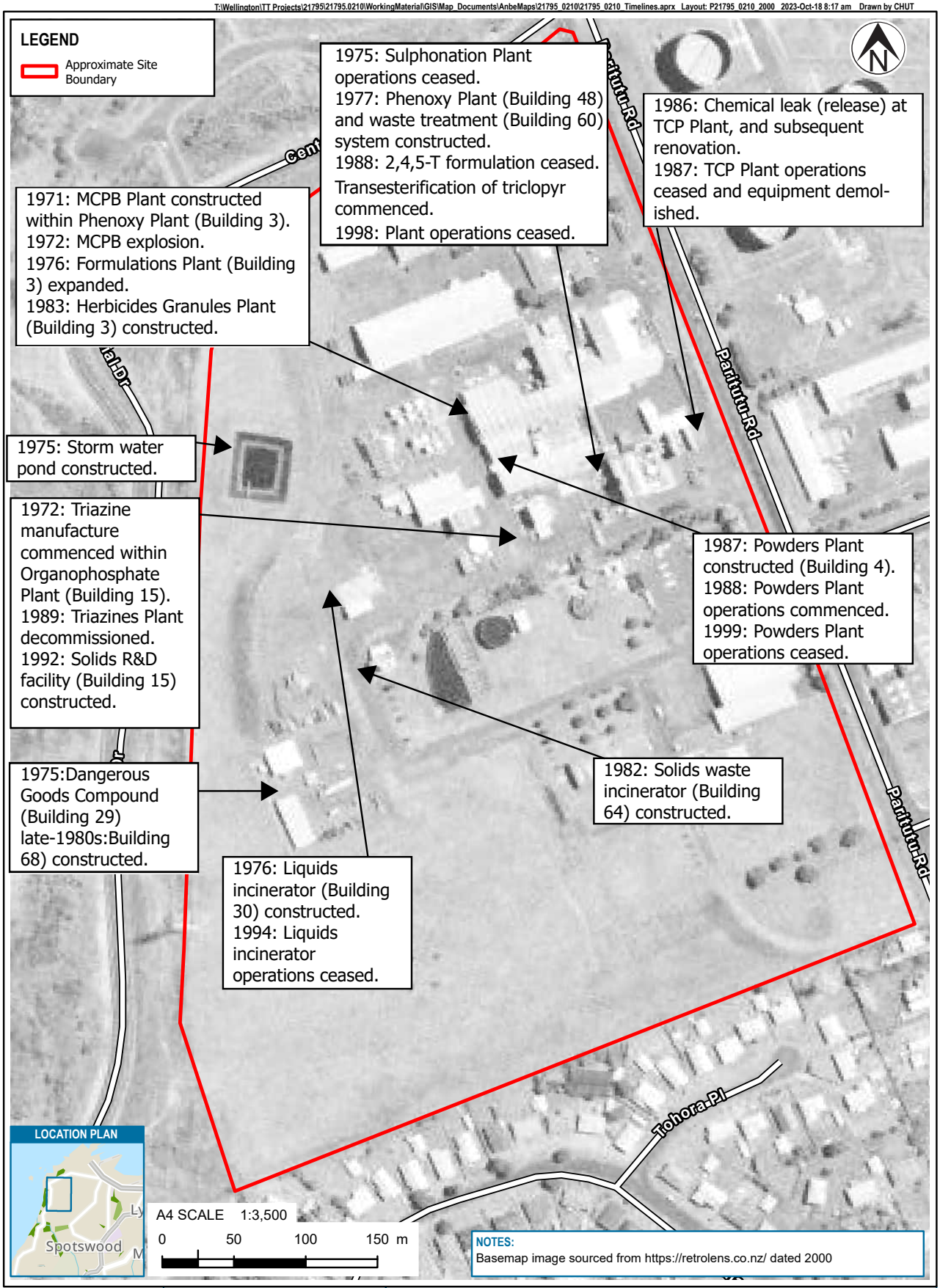

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APPROVED	DATE	

CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE PARITUTU SITE KEY ACTIVITIES - 1970-2000
SCALE (A4) 1:3,500 FIG No. FIGURE 5. REV 0

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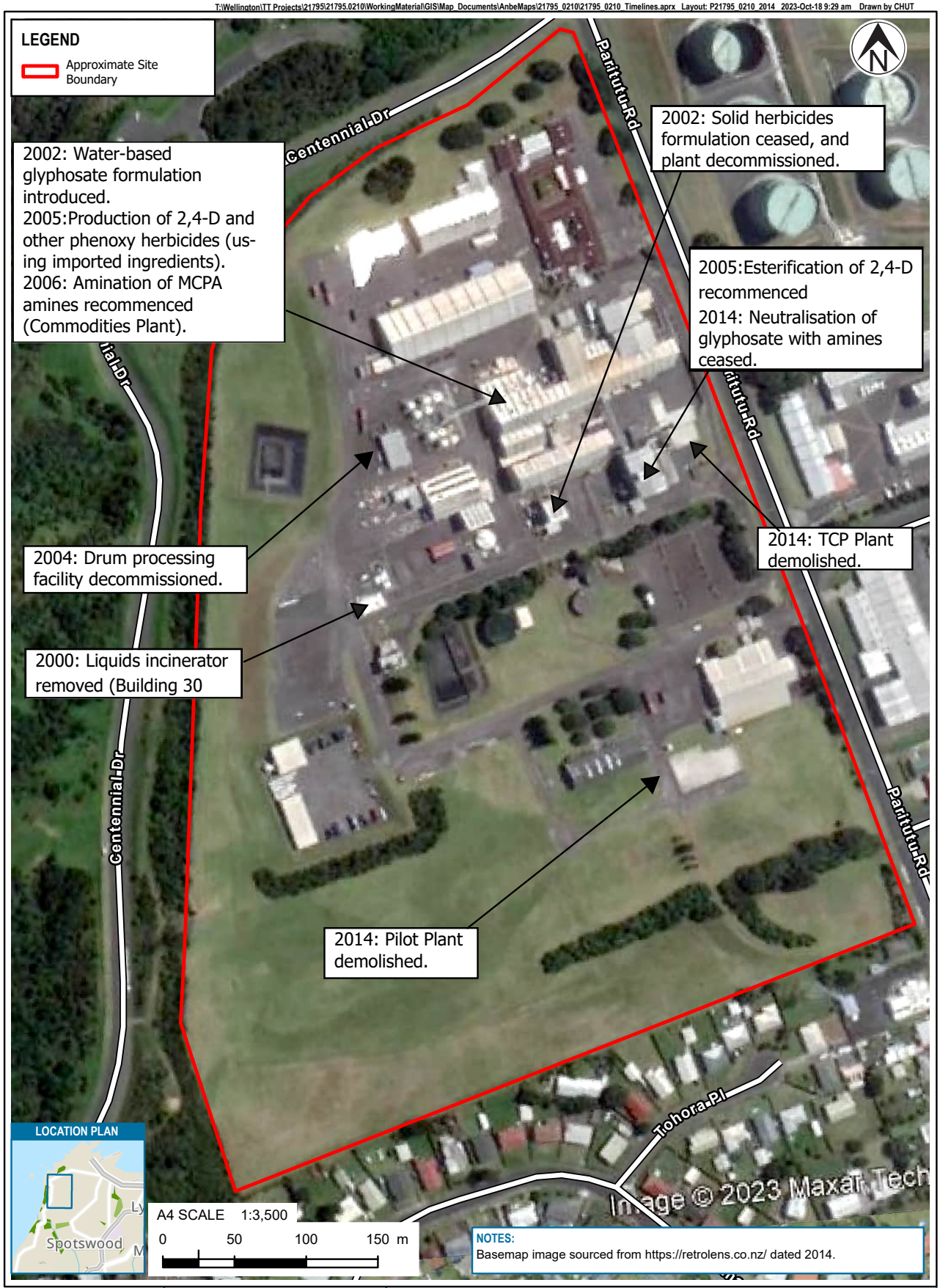

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DRAWN	CHUT	OCT.23
CHECKED	CHSA	OCT.23
APPROVED	DATE	

CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE PARITUTU SITE KEY ACTIVITIES - 2000-2007
SCALE (A4) 1:3,500 FIG No. FIGURE 6. REV 0

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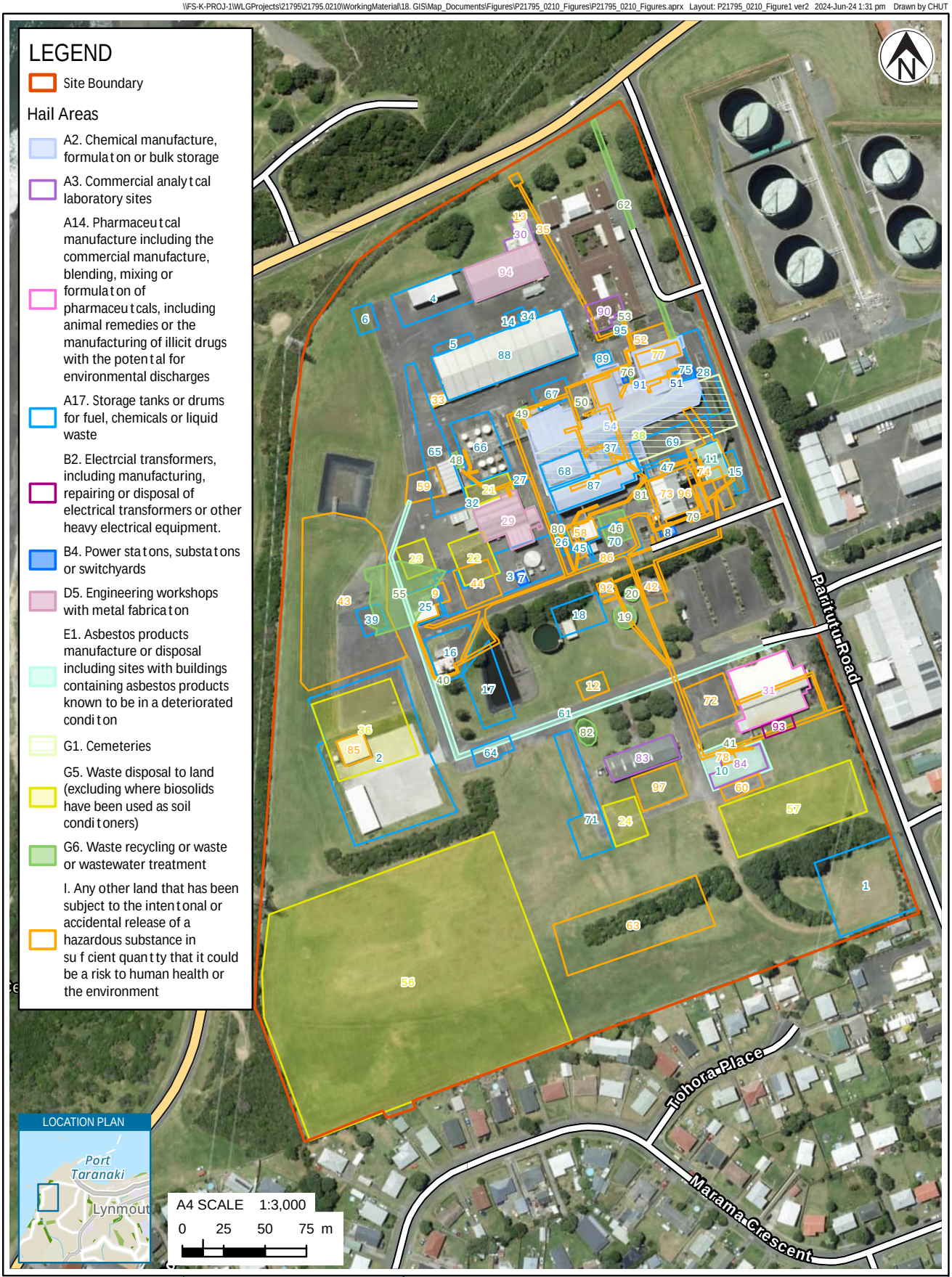

PROJECT No.	21795.0210		
DESIGNED	CHUT	JUN.24	
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CHECKED	CHSA	JUN.24	
APPROVED	DATE		

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CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE HAIL AREAS - SITE
SCALE (A4) 1:3,000 FIG No. FIGURE 7. REV 4

Activity ID	Title - Potential Activity	Comments	Prelime_Risk	Risk Comment	Confidence	HAIL_Category	Additional_HAIL_Category	HAIL_Status	Spatial_Accuracy	Accuracy Comment	Source (Record, Appendix C)
1	Drum storage	Former drum storage area in the southeast corner of the site.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Records 4, 41, 44, 55
2	Drum storage	Former drum storage area within/near Dangerous Goods Compound. Spills in "Dangerous Goods Store" resulting in contaminated material beneath Building 68.	Moderate	Contaminants dependent on specific contents stored/spilt. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Moderate to high	A17. Storage tanks or drums for fuel, chemicals or liquid waste	G5. Waste recycling or waste or wastewater treatment	Contamination Confirmed	Moderate	Potentially outdated	Records 4, 55, anecdotal evidence
3	Drum storage	Former drum storage area adjacent to liquids incinerator.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Potentially outdated	Record 4
4	Drum storage	Known drum storage area. Description of building as "Finished Goods Shelter No 2".	Low to moderate	Chemicals stored within the shelter are likely to have been subject to less leakages.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
5	Drum storage	Former drum storage area immediately north of finished goods warehouse.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Potentially outdated	Record 4
6	Equipment storage	Storage area for redundant/obsolete manufacturing vessels and equipment, including within Building 56.	Moderate	Contaminants dependent on specific manufacturing areas. Concentrations dependent on factors such as integrity of vessels and cleanliness of equipment. Area may be partially unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Potentially outdated	Records 4, 46, 49, 53, 55
7	Substation	Substation No. 5	Low to moderate	Contamination may have resulted from spills and leaks.	Low to moderate	B4. Power stations, substations or switchyards		Verified HAIL	Moderate	Potentially outdated. Based on building footprint.	Record 4
8	Substation	Substation No. 4	Low to moderate	Contamination may have resulted from spills and leaks.	Low to moderate	B4. Power stations, substations or switchyards		Unverified HAIL	Moderate	Potentially outdated. Based on building footprint.	Record 4
9	Chemical storage/spills	Contaminated soil beneath liquid incinerator building. Stockpiling of contaminated material (refuse, soil/gravel in area).	Moderate to high	Contamination known to be present beneath building.	Moderate to high	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate	Based on building and associated compound.	Records 4, 45, 46, 47, 52, 55
10	Asbestos and laboratory activities.	Laboratory demolished in 2014. Confirmed asbestos in buildings. Physical record of demolition.	Moderate	Contamination dependent on nature of demolition, condition of asbestos, and chemical storage/use during laboratory activities.	Moderate	E1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	A3. Commercial analytical laboratory sites	Verified HAIL	Low to moderate.	Likely confined to building footprint, and immediately surrounding land area.	Record 4, (physical) demolition documents

11	Asbestos	Asbestos containing material identified for demolition (2014).	Moderate	Contamination dependent on nature of demolition, condition of asbestos, exposed soil over surrounding areas.	Low to moderate	E1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Verified HAIL	Moderate	Likely confined to building footprint, and immediately surrounding land area.	Physical demolition documents
12	Soakage area	Surfactants soak hole.	Unknown		Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Uncertain		Anecdotal evidence
13	Save-all	Save-all location receiving residues from laboratory.	Moderate	Contaminants dependent on chemicals stored/used in laboratory	Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Uncertain	Based on anecdotal information	Anecdotal evidence
14	Underground storage tank	Underground storage tank located immediately north of Finished Goods Warehouse and Cafeteria.	Low to moderate	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Records 4, 5, 55
15	Underground storage tank	Underground storage tank area may have leaked. May have contained TCP related compounds and/or contaminated solvents. HDPE liner placed below grassed area upon demolition of tanks and bund in 1990s.	Low to moderate	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Records 4, 55, 57, anecdotal evidence
16	Solids incinerator	Storage area associated with solids wastes incinerator.	Moderate	Stored material may have included drums and refuse.	Moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Records 4, 55
17	Drum storage	Drum storage area southeast of solids incinerator.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
18	Drum storage	Drum storage area east of fire water tank.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
19	Tradewaste	Tradewaste equalisation tank	Low to moderate	Tradewaste network has been subject to leaking. Known contamination associated with sewer lines.	Low	G6. Waste recycling or waste or wastewater treatment	Other	Verified HAIL	Moderate	Based on structure footprint.	Record 4
20	Tradewaste	Tradewaste retention tank	Low to moderate	Tradewaste network has been subject to leaking. Known contamination associated with sewer lines.	Low	G6. Waste recycling or waste or wastewater treatment	Other	Verified HAIL	Moderate	Based on footprint of structure	Record 4

21	Onsite burial	Historical burial area located north of Maintenance building.	Moderate to high	Contamination dependent on the nature of the fill materials used.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 44
22	Onsite burial	Historical burial area located southwest of Maintenance building.	Moderate to high	Contamination dependent on the nature of the fill materials used.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 44
23	Onsite burial	Historical burial area located north of liquids incinerator.	Moderate to high	Contamination dependent on the nature of the fill materials used.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 44
24	Onsite burial	Historical burial area located southwest of disused laboratory.	Moderate to high	Contamination dependent on the nature of the fill materials used.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 44
25	Underground storage tanks	Two (largely subsurface) liquid waste tanks within Building 30. Underground storage tank located immediately north of liquids incinerator building.	Low to moderate	Liquid waste tanks supplied to incinerators. One tank was demolished in 2000. The other was used until site closure and removed during building demolition. Tank cavities were back filled and capped with concrete. Tanks removed between 1989 and 1991.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Records 4, 5, anecdotal information
26	Underground storage tank	Underground storage tank area located west of powders plant.	Low to moderate	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Records 4, 5, 55
27	Underground storage tank	Underground storage tank area. Located northeast of maintenance building.	Low to moderate	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Record 4
28	Underground storage tank	Series of underground storage tanks for various chemical (including solvents).	Moderate to High	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs. May have been subject to leaking. Odour noted when a nearby Monitoring Well (MW16) was drilled.	Moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated. Approximate location only.	Record 4, 55, 57, anecdotal evidence
29	Engineering workshop	Building within Central portion of the site described as "Maintenance" building.	Low	HAIL categorisation is conservative. Potential chemical storage/use associated with engineering activities within building.	Low	D5. Engineering workshops with metal fabrication	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Moderate	Limited to workshop area - if confirmed as workshop	Record 4, 26
30	Laboratory and chemical storage	Based on building description of "Laboratory/Storage". Chemical storage/use based on laboratory activities within the northeastern section of Building 07.	Unknown		Low	A3. Commercial analytical laboratory sites	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Moderate	Based on building footprint	Record 4, anecdotal evidence

31	Pharmaceutical manufacture /chemical storage	Chemical storage/use based on former vet medical manufacture. Area recently used for "storage/packaging".	Unknown		Low	A14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges		Unverified HAIL	Moderate	Based on building footprint	Record 4, 5
32	Chemical (oil) storage	Based on name of building "Oil Store".	Low		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Based on building footprint	Record 4
33	Chemical spill/vehicle workshop	Based on description of building as Fork Truck Garage	Low to moderate	Workshop activities considered unlikely as they Building was primarily used for charging forklift batteries. Additionally, fork trucks were known to have been used to transport wastes, which may have resulted in contaminated equipment.	Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate	Based on building footprint	Record 4
34	Chemical storage	Potential chemical storage within/near building. Based on descriptions of 'despatch store' and 'finished goods warehouse and cafeteria'.	Low		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Uncertain	Based on building footprint	Records 4, 26
35	Tradewaste	Tradewaste sewer network coming from the Old Phenoxy Plant (Building 03) and discharge point at northern boundary. Subject to leaking.	Moderate to high	Network has been subject to leaking. Known contamination associated with sewer lines.	Moderate to high	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Low to moderate	Based on indicative pipe alignment.	Records 4, 55, anecdotal evidence
36	Onsite burial	Potential "remaining" burial site of waste drums. Waste drums also stored in Dangerous Goods Compound - contained dioxins. Smalls leaks from drum corrosion.	Moderate	Contamination dependent on the nature of the fill materials used. Drums in Dangerous Goods Compound in poor condition and subject to leaking.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated.	Records 4, 44, anecdotal evidence
37	Underground storage tank	Underground storage tank. Approximate location within Building 03.	Low to moderate	Tanks removed between 1989 and 1991. Limited validation of soils beneath USTs.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Potentially outdated. Approximate location only.	Records 4, 5, anecdotal information
38	Potential Waahi Tapu area	Approximate location and extent of site known to be associated with Urupa (cemetery) and Pa (historic villages). HAIL categorisation is conservative.	Unknown		Low	G1. Cemeteries		Unverified HAIL	Moderate	Potentially outdated. Approximate location only.	Records 6, 36
39	Chemical storage	Former Anisole Waste Storage Tank (AST)	Unknown	Disused bulk anisole storage tank. Deconstructed in the early 1990s.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Based on building footprint.	Records 4
40	Save-all	Save-all location southwest of solids incinerator.	Low to moderate	Contaminants dependent on materials at solids incinerator.	Moderate to high	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated. Approximate location only.	Record 4, 55, anecdotal evidence

41	Save-all	Save-all location immediately north of research lab library (former pilot plant).	Low to moderate	Contaminants dependent on chemicals stored/used in laboratory (and pilot plant).	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated. Approximate location only.	Record 4, 55, anecdotal evidence
42	Chemical spills	Potential contamination beneath structures associated with brine extraction area.	Moderate to high	Documentation suggest ground contamination beneath this building. Presumed to be associated with the tradewaste network.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate	Based on building footprint	Records 4, 55, anecdotal evidence
43	Historic infilling and stormwater collection	Building material appears to have been used as fill in this area, with some bore logs from drilling locations in this area indicate presence of fill (building materials).	Moderate	Identified as a "higher risk area" in previous reporting. Historic soil sampling has reported concentrations at depth.	High	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Contamination Confirmed	Uncertain	Approximate location/extent only	Records 4, 18, 50, 55
44	Chemical spills	Area surrounding Building 63, where solvent damage of an underground waterpipe may have occurred.	Unknown	Understood to have been replaced in 1970s due to corrosion. Mentioned potential contaminants are solvents and xylene.	Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	G6. Waste recycling or waste or wastewater treatment	Unverified HAIL	Low	General location is thought to be Building 63 (site services office).	Anecdotal evidence
45	Save-all	Location of underground save-alls near protectants plant and powders, triazanes plant.	Low to moderate	Contaminants dependent on chemicals stored/used in associated plants.	Moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate to high	Approximate location understood to be located West/Southwest of powders plant.	Record 4, anecdotal evidence
46	Chemical spills	Potential spills/leaks associated with the waste water treatment (brine extraction) process, including a save-all.	Moderate	Waste water treatment process understood to have been demolished in 1990's.	Moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Potential contamination beneath the west bund of Building 48.	Record 55, anecdotal evidence
47	Chemical storage	Understood to be a bulk storage area for sulphur for old sulphonation plant. Located "behind retaining wall between top yard and Building 48".	Unknown		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Uncertain	Approximate location only	Anecdotal evidence
48	Save-all	Save-all location adjacent to drum processing plant.	Low to moderate	Contaminants dependent on chemicals stored/used in associated plants.	Moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Approximate location only	Record 4, anecdotal evidence
49	Save-all	Save-all location northwest of Building 03, for herbicides formulations plant.	Moderate to high	Contaminants dependent on chemicals stored/used in associated plants.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Approximate location only	Record 4, anecdotal evidence
50	Save-all	Save-all location north of Building 03, for surfactants/insecticides plant.	Moderate to high	Contaminants dependent on chemicals stored/used in associated plants.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Approximate location only	Record 4, anecdotal evidence

51	Substation	Old substation area located immediately west of phenoxy plant.	Low to moderate	Contamination may have resulted from spills and leaks from substation and/or adjacent manufacturing activities.	Low to moderate	B4. Power stations, substations or switchyards	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Potentially outdated. Based on building footprint.	Record 4, anecdotal evidence
52	Save-all and chemical spills	Possible save-all and spill area located north of phenoxy plant.	Moderate	Anecdotal information of save-all overflows and spill area for phenoxies and solvents.	Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	G6. Waste recycling or waste or wastewater treatment	Unverified HAIL	Low	Based on anecdotal information	Anecdotal evidence
53	Save-all	Save-all location at southern boundary of laboratory/administration building.	Low to moderate		Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Approximate location only	Record 4
54	Chemical manufacture	Phenoxy plant. Known areas of chemical storage/use.	High	Possible contamination (odour) from exposed soil when recently demolished. Building material impacted with (potentially) contaminated dust from manufacture processes.	Moderate to high	A2. Chemical manufacture, formulation or bulk storage	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Based on building footprints	Records 4, 26, 55, anecdotal evidence
55	Former stormwater pond ("lagoon")	Small unlined pond ("lagoon") which may have received anything spilt on site before modern SW ponds (SV-9000/9100) were built.	Moderate	Received stormwater from manufacturing areas. Allegations of cyanuric chloride drums depressurised with rifle shooting over this area.	High	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Approximate location only	Records 4, 50, 55, anecdotal evidence
56	Onsite burial and drum storage	Multiple (potential) burial areas and drum storage areas in south west corner.	Moderate	Contamination dependent on the nature of the fill materials used, and specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether surface areas were unpaved.	Low	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Approximate location/extent only	Anecdotal evidence
57	Onsite burial	Historical burial area located southeast of Building 20.	Moderate to high	Contamination dependent on the nature of the fill materials used.	Low to moderate	G5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Potentially outdated	Record 4, anecdotal evidence
58	Chemical spills/storage	Ground contamination from a xylene tank outside Building 15.	Moderate to high	Evidence of contamination noted during excavations.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Low to moderate	Located immediately west of Building 15	Record 55, anecdotal evidence
59	Drum storage	Storage of empty drums adjacent to Building 25 (described as "drum processing").	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Moderate	Potentially outdated	Record 4, anecdotal evidence
60	Contaminated material storage	Excavated (contaminated) soil and rubble stored immediately south of Building 20.	Moderate	Material indicated to have been stored on hardstand area.	Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Contamination Confirmed	Low to moderate	Potentially outdated	Record 47, anecdotal evidence

61	Asbestos	Underground asbestos water pipe- from Gate 1 to lagoon/sump area. Updated to plastic pipe in 1980s/1990s	Low to moderate	Dependent on nature of demolition (removal) and condition of pipe. Understood to constructed of fibrolite. Instead of leaving the site under Gate 1 , the pipe may follow the trade waste network down to Building 20 and South of Building 18	Low	E1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Based on anecdotal information	Anecdotal evidence
62	Stormwater	Indicate layout of a stormwater network from the corner of the old phenoxy plant.	Low		Low	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Based on anecdotal information	Anecdotal evidence
63	Historic infilling	Historic infilling utilising demolition (building) material near the southern boundary.	Low to moderate		Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Low to moderate		Record 55
64	Drum storage	Former drum storage area east of the Dangerous Goods Compound.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
65	Drum storage	Drum and chemical storage area. Nearby building identified as Building 59 - "Dangerous Goods (P.P)"	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 26
66	Chemical storage	Above ground bulk chemical storage area (formulations tank farm).	Low to moderate		Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 26
67	Drum storage	Former drum storage area north of formulations plant.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
68	Drum storage	Former drum storage area within Building 03.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
69	Drum storage	Former drum storage area south of old phenoxy plant.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4
70	Drum storage	Former drum storage area southwest of powders plant.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved.	Low to moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4

71	Drum storage and historic infilling	Former drum storage area west/southwest of disused laboratory. Raw materials encountered during installation of a stormwater line.	Low to moderate	Contaminants dependent on specific contents stored. Concentrations dependent on factors such as integrity of vessels and whether underlying surface were unpaved. Materials believed to be sourced from protectants plant.	Moderate	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Moderate	Potentially outdated	Record 4, 55
72	Chemical spills and drum storage	Drum storage and washdown area for exhumed drums.	Moderate to high	Cleaning (washdown) carried out on non-hardstand area, with wash water soaking to ground.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Moderate	Potentially outdated. Approximate location only.	Record 4, 55, anecdotal evidence
73	Chemical storage/spills	Possible contamination beneath Building 48 and associated infrastructure (including associated tradewaste network). Chemical storage within phenoxy plant.	Moderate to high	Contamination may be present beneath building.	Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Unverified HAIL	Moderate	Based on building footprint and associated infrastructure	Records 4, 26, 55, anecdotal evidence
74	Chemical spills	Confirmed (TCDD) contamination beneath building and associated infrastructure (tradewaste network, and/or underground TCP Transfer line).	High	Previous soil sampling has recorded elevated concentrations within soil.	Moderate to high	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	A17. Storage tanks or drums for fuel, chemicals or liquid waste	Contamination Confirmed	Moderate to high	Potentially outdated	Record 4, 47, 55, anecdotal evidence
75	Chemical spills/storage	Bulk storage area located immediately east of old phenoxy plant.	Low to moderate		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low		Record 55
76	Save-all	Save-all location at north of old phenoxy plant.	Moderate	Contaminants dependent on chemicals stored/used in phenoxy plant.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Approximate location only	Record 4, 55, anecdotal evidence
77	Chemical spills	Area of old phenoxy plant subject to potential contamination (spills). Potentially beneath floor.	Moderate	Odours identified beneath floor over wider building footprint.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Low		Record 55
78	Chemical spills	Area of pilot plant subject to potential contamination (spills). Potentially beneath floor.	Moderate		Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Low		Record 55
79	Save-all	Save-all location immediately southeast of phenoxy plant.	Low to moderate	Contaminants dependent on chemicals stored/used in associated plants.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Approximate location only	Record 4
80	Save-all	Save-all location immediately southwest of powders plant.	Low to moderate	Contaminants dependent on chemicals stored/used in associated plants.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Approximate location only	Record 4

81	Save-all	Save-all location immediately west of phenoxy plant.	Low to moderate	Contaminants dependent on chemicals stored/used in associated plants.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Approximate location only	Record 4
82	Soakage area	Former stormwater manhole	Moderate	Previous reporting identified as a 'higher risk area'.	Low to moderate	G6. Waste recycling or waste or wastewater treatment	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Approximate location only	Record 4
83	Laboratory and chemical storage	Based on building description as "disused laboratory".	Unknown		Low	A3. Commercial analytical laboratory sites		Unverified HAIL	Moderate	Based on building footprint	Record 4
84	Laboratory and chemical storage/manufacture	Based on building description as 'Pilot Plant, Laboratory, chemical storage and Research lab library'. High purity TCP was developed in Building 20 for pharmaceutical purposes.	Unknown		Low	A3. Commercial analytical laboratory sites	A2. Chemical manufacture, formulation or bulk storage	Unverified HAIL	Moderate	Based on building footprint	Record 4, anecdotal evidence
85	Chemical storage/spills	Contaminated soil beneath Building 68 within Dangerous Goods Compound.	Moderate to high	Area known to be contaminated, concentrations unconfirmed.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate	Based on building footprint	Record 4, 55
86	Tradewaste	Indicative layout of the trade waste/sewer network across the site. Known to have contaminated soil near the TCP Plant.	Moderate to high	Previous soil sampling has recorded elevated concentrations within soil (near TCP plant).	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	G6. Waste recycling or waste or wastewater treatment	Unverified HAIL	Moderate to low	Based on indicative pipe alignment.	Record 55, 26, 23, 22.2
87	Chemical storage/spills	Chemical storage with building. Based on description of 'formulations plant'.	Low to moderate		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Based on building footprint	Record 26
88	Chemical storage	Chemical storage with building. Based on description of 'despatch store'.	Low to moderate	Building used for storage of finished goods prior to leaving site.	Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Based on building footprint	Record 26
89	Chemical storage	Known chemical storage with building. Based on description of 'sample despatch store'.	Low to moderate		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Based on building footprint	Record 26
90	Laboratory	Based on description of the area as 'Laboratory'	Low to moderate		Low	A3. Commercial analytical laboratory sites		Unverified HAIL	Moderate	Based on building footprint	Record 26, anecdotal evidence

91	Substation	Old substation located immediately north of the Old Phenoxy Plant.	Low to moderate	Contamination may have resulted from spills and leaks from substation and/or adjacent manufacturing activities.	Low to moderate	B4. Power stations, substations or switchyards	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low to moderate	Potentially outdated. Based on building footprint.	Anecdotal evidence
92	Tradewaste	Approximate location of tradewaste under/over separator.	Moderate to high	Cleaned, backfilled and capped with concrete during demolition.	Low to moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	G6. Waste recycling or waste or wastewater treatment	Unverified HAIL	Moderate	Based on approximate building footprint location.	Anecdotal evidence
93	Electrical transformer	Approximate location of transformer immediately south of Building 18.	Unknown	Contamination may have resulted from spills and leaks to ground.	Low	B2. Electrical transformers, including manufacturing, repairing or disposal of electrical transformers or other heavy electrical equipment.	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment	Unverified HAIL	Low	Precise location unknown	Anecdotal evidence
94	Engineering workshop	Based on former use of Building 07 for production of spray equipment.	Low to moderate	Contamination may have resulted from storage or use (spills) of chemicals from manufacturing (e.g. metal fabrication), or general workshop activities.	Low	D5. Engineering workshops with metal fabrication		Unverified HAIL	Moderate	Based on anecdotal information	Anecdotal evidence
95	Chemical storage	Based on description of area as 'Dangerous Goods Stores'. Known chemical storage area (Buildings 36 and 51).	Unknown		Low	A17. Storage tanks or drums for fuel, chemicals or liquid waste		Unverified HAIL	Moderate	Based on anecdotal information.	Anecdotal evidence
96	Firefighting foam (PFAS)	Based on anecdotal reporting and Building 52 being listed as a Sprinkler Station.	Unknown	Contamination could have resulted from spills and leaks, or from training or emergency use of the foam	Low	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate	Based on anecdotal information.	Anecdotal evidence
97	Contaminated material storage	Excavated (potentially contaminated) soil and rubble stored immediately south of Building 19.	Moderate	Contamination may have resulted from spills and leaks from substation and/or adjacent manufacturing activities.	Moderate	I. Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment		Unverified HAIL	Moderate to high	Potentially outdated	Anecdotal evidence, aerial image

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NOTES:

World Imagery: LINZ. NZ Topographic - Basemap Only: Eagle, LINZ, StatsNZ, OSM. Hybrid Reference Layer: Esri Community Maps Contributors, LINZ, Stats NZ, Esri, TomTom, Garmin, Foursquare, METI/NASA, USGS. NZ Topographic - Reference Labels: Eagle, OSM

REVISIONS	NO.	BY
First version (22/09/23)	0	JORB
Second version (29/09/23)	1	CHUT
Third version (02/11/23)	2	JORB
Fifth version (19/06/24)	4	CHUT

PROJECT No.	21795.0210		
DESIGNED	JORB	JUN.24	
DRAWN	CHUT	JUN.24	
CHECKED	CHSA	JUN.24	
APPROVED	DATE		

CLIENT **DOW CHEMICAL (NZ) LIMITED**

PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**

TITLE HAIL AREAS - NORTH

SCALE (A4) 1:1,000 FIG No. FIGURE 7.1 REV 4

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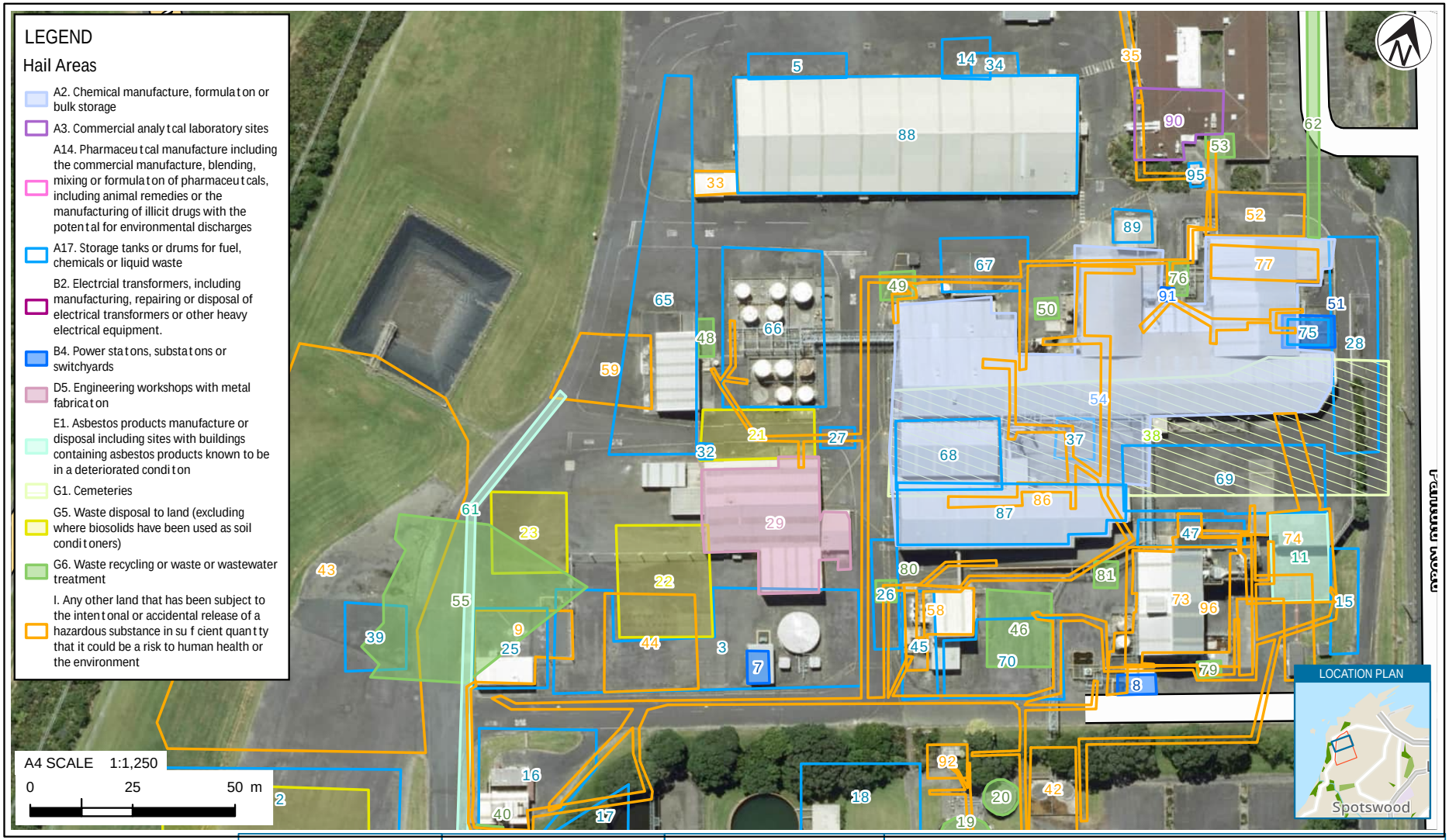

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REVISIONS	NO.	BY
First version (22/09/23)	0	JORB
Second version (29/09/23)	1	CHUT
Third version (02/11/23)	2	JORB
Fifth version (19/06/24)	4	CHUT

PROJECT No.	21795.0210	
DESIGNED	JORB	JUN.24
DRAWN	CHUT	JUN.24
CHECKED	CHSA	JUN.24
APPROVED	DATE	

CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE HAIL AREAS - CENTRAL
SCALE (A4) 1:1,250 FIG No. FIGURE 7.2 REV 4

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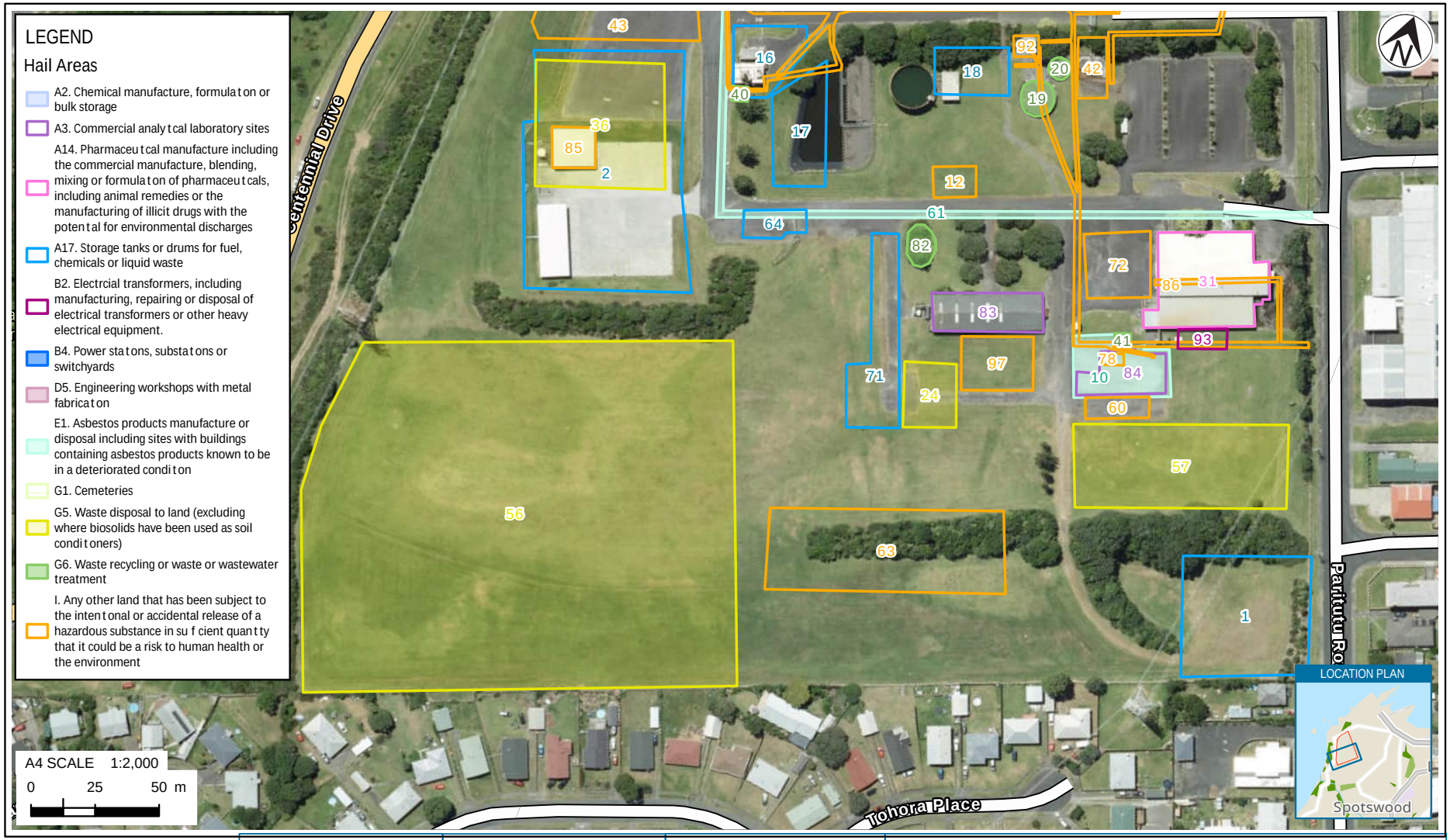

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First version (22/09/23)	0	JORB
Second version (29/09/23)	1	CHUT
Third version (02/11/23)	2	JORB
Fifth version (19/06/24)	4	CHUT

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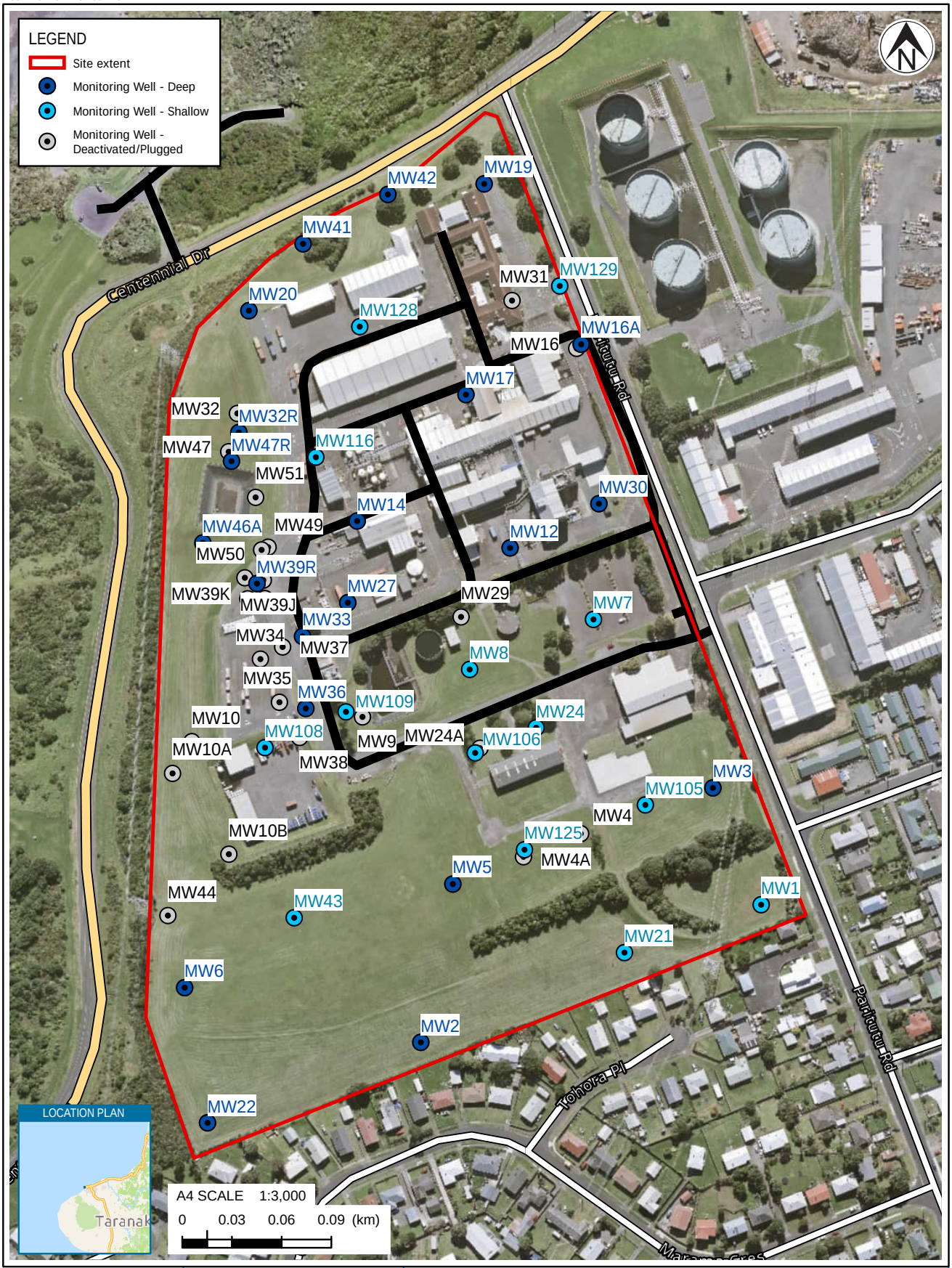
DESIGNED	JORB	JUN.24
DRAWN	CHUT	JUN.24
CHECKED	CHSA	JUN.24
APPROVED		DATE

CLIENT **DOW CHEMICAL (NZ) LIMITED**
PROJECT **PARITUTU CONTAMINATED LAND ASSESSMENT**
TITLE HAIL AREAS - SOUTH
SCALE (A4) 1:2,000 FIG No. FIGURE 7.3 REV 4



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PROJECT No.	21795.0210	
DESIGNED	BRAL	SEP.22
DRAWN	BRAL	SEP.22
CHECKED		
APPROVED	DATE	

CLIENT **DOW CHEMICAL (NEW ZEALAND) LTD**

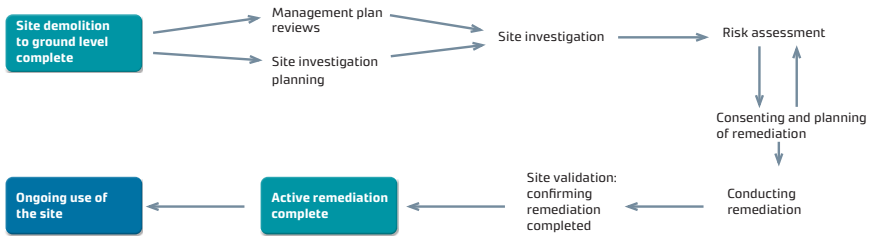
PROJECT **PARITUTU ROAD, NEW PLYMOUTH**

TITLE SITE AND MONITORING WELL LOCATION PLAN

SCALE (A4) 1:3,000 FIG No. FIGURE 8. REV 0

Appendix B Remediation Roadmap

DRAFT REMEDIATION ROAD MAP FOR DISCUSSION - OVERVIEW



Demolition completed to ground level

	DOW AND ENVIRONMENTAL CONSULTANTS	REGULATORY AUTHORITIES	MANA WHENUA	WIDER COMMUNITY
Review of existing plans Likely duration: 3- 6 months	**Review and update existing management plans for the site** Existing management plans (e.g., stormwater and groundwater management plans) updated to reflect new site status	**Regulatory Authorities provide input to new management plans**		
	Updated management plans submitted to Regulatory Authorities	**Updated management plans approved for use**		
	Ongoing site management and monitoring undertaken in accordance with updated plans			
Site investigation planning phase Likely duration: 6-12 months	**Review of existing data** • Compiling historical information about the site use and potentially contaminating activities • Discussions with former employees about site activities • Updating of preliminary Conceptual Site Model • Identification of data gaps	**Regulatory Authorities provide file documents relating to potentially contaminating site activities, previous investigations etc**	**Mana whenua input about site history and knowledge of potentially contaminated areas/site activities**	**Wider community input with local knowledge of potentially contaminated areas/site activities**
	Planning site investigation • Designed to fill data gaps • Soil and groundwater sampling • Preparation of Sampling & Analysis Plan for Regulatory Review	**Regulators provide input to Sampling Analysis Plan**	**Mana whenua consulted about any investigations, particularly excavations within or near wāhi tapu**	
	Consent application for site • Consents may be required for installation of new groundwater monitoring wells and/or soil disturbance	**Site investigation consent application reviewed Regulatory Authorities**		
Investigation and risk assessment phase Likely duration depending on results: 6-12 months **Investigation and risk assessment phase** **Iterative process Depends on results**		**Site investigation consent feedback and approval**		
	Conduct site investigation Soil and groundwater sampling and analysis in accordance with agreed Sampling Analysis Plan and consent conditions	**Site inspections and ongoing liaison**	**Mana whenua / kaitiaki supervision of excavations near wāhi tapu (if desired)**	
	Site investigation results reviewed and risk assessment conducted (health and environment)			
	Reporting of investigation Detailed Site Investigation Report and Site-specific Risk Assessment (health and environment)	**Reports provided to Regulatory Authorities**	**Communicate key findings to mana whenua**	**Communicate key findings to wider community**
Consenting and planning phase Likely duration: 6 to 12 months	**Planning remediation goals** Determine remediation goals taking into account site investigation results. Includes preparation of Remedial Options Assessment and Remedial Action Plan	**Discuss remediation goals with Regulatory Authorities**	**Opportunity for mana whenua input into remediation goals**	**Opportunity for wider community input into remediation goals**
	Determining consenting requirements Consents are likely to be required based on future use of the site and remediation method (e.g., national environmental standards and regional consents)	**Discuss remediation goals and consents with Regulatory Authorities**		
	Preparation of consents documents e.g., Assessment of Environmental Effects, Contaminated Site Management Plan, Long-term Management Plan		**Opportunity for mana whenua input into consent application**	**Opportunity for wider community input into consent application**
	Consent application(s) submitted	**Regulatory Authorities review consent applications and supporting documents**		
		Consent feedback and approval		
Active remediation phase (where required) Likely duration: 2-4 years	**Implementation of remediation** Conducting site works in line with approved consents	**Site inspections and ongoing liaison**	**Regular updates to mana whenua** **Mana whenua / kaitiaki monitoring and supervision of remediation**	**Regular updates to wider community**
	Site validation Investigations and monitoring to confirm site remediation and management targets are achieved	**Results provided to Regulatory Authorities**	**Mana whenua / kaitiaki monitoring and supervision of validation**	
		Confirmation from Regulatory Authorities that remediation completed	**Validation confirmation communicated to mana whenua**	**Validation confirmation communicated to wider community**

Active remediation completed

Together we create and sustain a better world

Ongoing use of the site
Long-term site management and monitoring as required

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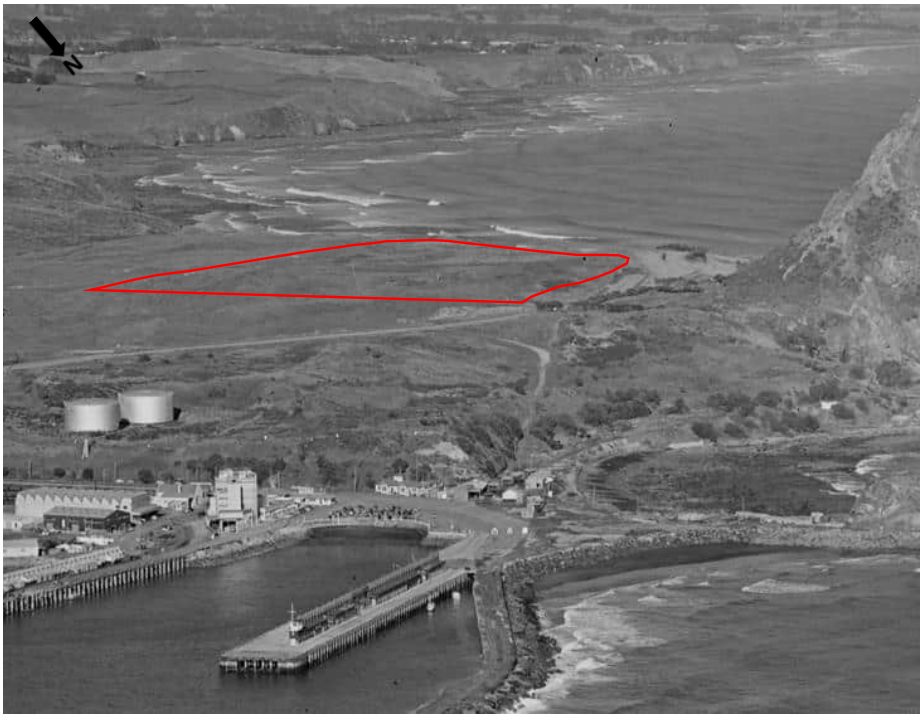
Appendix C Research Record

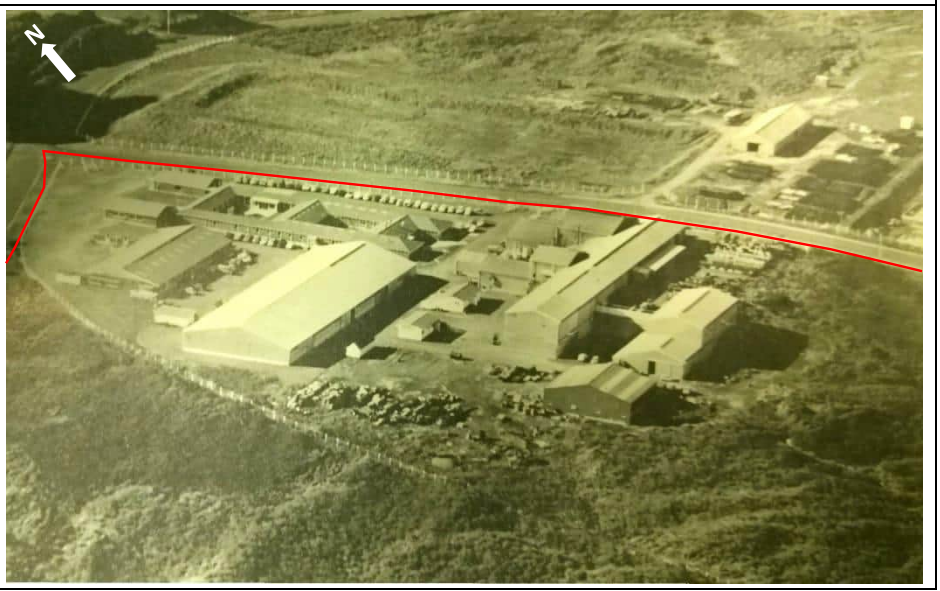
Document number	Onsite/offsite	Document Name	Year	Author	Client	Summary of document purpose
1	Onsite	1. Groundwater Modelling Report - Electrical Resistivity_1996	1996	Groundwater Technology (NZ)	DowElanco (NZ) Limited	An Electrical Resistivity survey undertaken at Paritutu to delineate the lateral and vertical extent of the andesite.
2	Onsite	2. Groundwater Modelling Report_Paritutu_1996	1996	Groundwater Technology (NZ)	DowElanco (NZ) Limited	Collection of baseline GW quality data to include in a fate and transport model. Development of a groundwater flow model and development of a predictive fate and transport model for chlorophenol and Phenoxies.
3	Onsite	3. Site Specific Screening Levels_Groundwater_2012	2012	ERM	Dow AgroSciences (NZ) Ltd	Develop water quality site specific screening levels for chemicals detected in GW at the Paritutu site for which there were no ANZECC water quality guidelines for. The SSSLs were used to screen groundwater date collected as part of the sites GMP and identify CoC that could pose a risk to ecological receptors downgradient of the site.
4	Onsite	4. Interpretive Groundwater Report _2014	2014	ERM	Dow AgroSciences (NZ) Ltd	A single technical reference document to support discussion with future stakeholders. Provide a CSM and assessment of data gaps and provide a confident basis for scoping further investigation.
5	Offsite	5. offsite human health risk assessment_2014	2014	ERM	Dow AgroSciences (NZ) Ltd	To provide communication with stakeholders about the human health risks to offsite receptors.
6	Onsite	6. Shallow Soil and GW Environmental Site Assessment	2015	ERM	Dow AgroSciences (NZ) Ltd	Assessment of shallow soil and groundwater quality in the key potential contamination source areas and assesses the significance of the shallow soil and groundwater contamination with respect to human and environmental receptors.
7	Onsite	7. Soil Investigation of Dangerous Goods Compounds_2017	2017	ERM	Dow AgroSciences (NZ) Ltd	Assessment of shallow soil quality within the dangerous goods compound, informing disposal options.
8	Onsite	8. Groundwater flow and transport model_2018	2018	ERM	Dow AgroSciences (NZ) Ltd	To provide an understanding of the 3D groundwater flow. Identify potential environmental receptors. Conduct conservative estimates of long term contaminant fate and transport using indicators for phenoxy acids and chlorophenols.
9	Onsite	9. 2021.02.04_21795.GMEReport.ISSUED	2021	T+T	Dow AgroSciences (NZ) Ltd	Annual groundwater sampling in accordance with the groundwater monitoring plan (GMP).
10	Onsite	10. Paritutu Groundwater Report V2 FINAL	2022	T+T	Dow AgroSciences (NZ) Ltd	Annual groundwater sampling in accordance with the groundwater monitoring plan (GMP).
11	Offsite	11. PDP Marfell Park Environmental Investigation	2009	PDP	Taranaki Regional Council	Assessment of shallow soils at Marfell Park following discovery of drums and elevated TCDD residue, providing risk assessment to park users.
12	Both	12. Dioxin Concentrations Paritutu - PDP	2002	PDP	MfE and IESR	The study was to measure 2,3,7,8-TCDD concentration trends within surface soil within the residential areas to the east and south of the Dow Plant with some properties to the northeast.
13	Both	13. Investigation of alleged agrichemical waste disposal sites in New Plymouth	2001	Taranaki Regional Council	N/A	Investigation into alleged dump sites to determine contamination associated with the sites, with findings used to inform an environmental risk assessment.
14	Onsite	Natural Biological Attenuation of Phenoxy Herbicides in Groundwater, Dow AgroSciences, Paritutu Site, New Zealand	2001	Gary Klecka (Dow)	Bioremediation Journal (Potentially) Dow Agrosciences (NZ) Ltd	Academic publication - natural attenuation of phenoxy herbicides at Paritutu.
15	Onsite	15. Dow Paritutu Site Overview	2023	Taranaki Regional Council/T+T	Dow AgroSciences (NZ) Ltd	High level background of site (ownership history, iwi association, previous investigations and consent information). An outline of remediation roadmap for the Paritutu site.
16	Offsite	16. A Study of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) Exposures in Paritutu, New Zealand	2005	ESR	Dow AgroSciences (NZ) Ltd	Results of blood testing for residents (during production years) and contaminant pathway modelling. Soil contamination modelling.
16.1	Offsite	16.1 Summary of Paritutu Serum Dioxin Study	2005	ESR	Dow AgroSciences (NZ) Ltd	High level summary of blood testing for residents (during production years) and contaminant pathway modelling. Soil contamination modelling.
17.2	Offsite	17.2 Appendices associated with the TRC investigation (2001)	2001	Taranaki Regional Council	N/A	Appendix items V to IX for TRC investigation includes sampling results from; water, sediment, marine diversity and biota sampling/investigations. Dioxin testing of shellfish.
17.1	Offsite	17.1 Investigation of alleged agrichemical waste disposal sites in New Plymouth	2001	Taranaki Regional Council	N/A	Investigation into alleged dump sites to determine contamination associated with the sites, with findings used to inform an environmental risk assessment. Duplicate of Record 13.
18	Onsite	18. New Plymouth Site Hydrogeology Survey Report	1996	DowElanco	DowElanco (NZ) Ltd, and affiliates	Summary report of initial hydrogeology characterisations and geology from bore logs, including some contamination observations and field parameters (temperature and conductivity).
19	Onsite	19. DowElanco Environmental Assessment Project - Media Release	1996	DowElanco		Media release and high-level summary of 1996 groundwater investigation which showed concentrations of phenoxy herbicides and chlorophenols in groundwater.
19.1	Onsite	19.1 DowElanco Environmental Assessment Project	1996	Groundwater Technology (NZ)	DowElanco (NZ) Limited	Extracts of information including groundwater results, site monitoring location plans, initial conclusions and recommendations.
20	Offsite	20. Investigation into PCBs and organochlorine discharges from sites in the New Plymouth District	1995	Taranaki Regional Council	Taranaki Regional Council	Referencing other PCB refuse sites across Taranaki. Does not included Paritutu site.
21	Onsite	21. Dow Oct 2021 Groundwater Management Report New Plymouth site 2020-21	2021	T+T	Dow	Groundwater results and reporting from monitoring undertaken in 2021
22	Onsite/Offsite	22. Trade Waste Consent - Dow Agrosciences - April 1991 to April 1997	1997	DowElanco (NZ) Limited TRC NPDC	DowElanco (NZ) Limited TRC NPDC	Combined resource of trade waste consenting for NPDC, variations to consent, record of volumes, sludge sampling, concerns of trade waste put in domestic waste, concerns of highly saline trade waste. Results for trade waste testing.
22.1		22.1. Resource Consents Monitoring Programme Annual Report 1994-95	1995	TRC	DowElanco (NZ) Limited	Annual monitoring report for the Paritutu site, prepared for the monitoring period of 1994-95, with respect to emissions and stormwater.
22.2	Onsite	22.2. Stormwater and sewer/trade waste plans from 1995	1995	DowElanco (NZ) Limited	DowElanco (NZ) Limited	Site plans for trade waste and stormwater networks at the site.
23	Onsite	23. Trade Waste Consent - Dow Agrosciences - April 1997 to March 1999	1999	DowElanco (NZ) Limited	DowElanco (NZ) Limited	Assorted documents which contained consents, Trade waste results (1998), trade waste network plans, stormwater discharge/standard operating procedures. Trade waste sampling protocol for chlorinated dibenzo-p-dioxins.
23.1	Offsite	23.1. A world compendium: The pesticide manual - Incorporating the Agrochemicals Handbook (Tenth Edition)	1994	British Crop Protection Council Royal Society of Chemistry	N/A	Pesticide handbook, chemical information, toxicology, applications, commercialisation. Triclopyr, Picloram, MCPB, MCPA, fluroxypyr, 2,4-D, clopyralid, spinosyn (highlighted)
24	Onsite	24. Trade Waste Consent - Dow Agrosciences - April 1999 to October 2000	2000	DowElanco (NZ) Limited NPDC	DowElanco (NZ) Limited NPDC	Documented trade waste results and correspondence
25		25. Trade Waste Consent - Dow Agrosciences - October 2000 to September 2012	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents including; trade waste discharge reports, testing, Chemical lists- t.2000L of Trojan insecticide repackaged, (not manufactured) in 2004, Trojan 150 g/L of gamma-cyhalothrin. Safety data sheet for "Trojan insecticide", copy of councillor complaint , and articles in 'Investigate' and 'Listener'.
26	Onsite	26. Trade Waste Consent - Dow Agrosciences - 2014	2014	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Trade waste consent (renewal) application, active agents lists, locations of chemical storage areas, trade waste retention and batch release system details.

26.1	Onsite	26.1. Active ingredients managed onsite	2014	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	From Record 26, list of active ingredients managed onsite
27	Onsite/offsite	27. Investigation of Land Contamination - Redacted	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents, including: letters of concern to the council, detailed reporting on the dioxin study MoH (includes report) evaluation of the toxicity of dioxins and dioxin-like PCBs; A health risk appraisal of the New Zealand population, TRC report titled 'Alleged contamination by Dow AgroSciences (NZ) Ltd.
28	Onsite/offsite	28. Chemical Dumping	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents including; letter/email correspondence (including mention of site investigations), Memorandum of Lease 1962, Initial survey maps, subdivision plans. Council report on investigation of media article "The dumped it under Paritutu". Annette King Minster of Health 200 media response for blood dioxin tests. Waireka landfill monitoring - NPDC land use consent, construction. Investigation reports from release of TCDD at TCP Plant (1986).
29	Onsite/offsite	29. Complaint - Kennedy_Redacted	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents including; certificates of title. correspondence regarding development, releases, trade waste, Waireka establishment, letter of clean air compliance, Waireka disposal list. Confirmation of hormonal damage to vegetable plants - not tied to IWD.
30	Onsite	30. Complaint - Odour - 2002_Redacted	2001-2002	Dow AgroSciences (NZ) Ltd NPDC	N/A (Various)	Odour complaint - troubles with incinerator identified.
31	Onsite	31. Complaints - Noise - 2003_Redacted	2002-2003	NPDC	NPDC	Noise complaint - site alarm, triggered low pressure in sprinklers was cause.
32	Onsite/offsite	32. Development of Land Adjoining IWD Manufacturing Plant (1)	1991-1992	NPDC	NPDC	Extracts of information also within Record 29.
32.1	Offsite	The management of hazardous wastes disposal - A review of government systems	1992	N/A	N/A	High level government review of policy in 1992.
33	Offsite	33. Development of Land Adjoining IWD Manufacturing Plant	1991-1992	NPDC	NPDC	Duplicate of Record 32.
34	Onsite	34. Drainage Plan	1984-1985	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Trade waste sewer and domestic waste sewer networks.
35	Onsite/offsite	35. Information Request - Gibbs 1_Redacted	1986	N/A (Various)	N/A (Various)	Assorted documents including, The use of 2,4,5-T in New Zealand: A report to the environmental council. Possible health effects of manufacture of 2,4,5-T in New Plymouth, reports of dump sites, shellfish study for TCDD.
36	Onsite/offsite	36. Information Request - Gibbs 2_Redacted	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents including, waahi tapu significance queries, health impacts, soil dioxin investigation (of residential properties) and a timeline of events (handwritten notes). Dioxin investigation - disease study in Paritutu and Moturoa.
37	Onsite	37. LIM06-88174	2006	NPDC	Ministry of Health (MoH)	Lim Request from MoH, including a list of building permits
38	Onsite	38. Management of Trade Waste	2005	Dow AgroSciences (NZ) Ltd	NPDC	Change of location for laboratory work from the Pilot Plant to Building 07. Mention of controls for wastewater, utilizing Building 07 Save-all.
39		39. Overseas Investment Certificate	1997	Govett Quilliam NPDC	Govett Quilliam NPDC	Certificates of title in relation to Overseas Investment Regulations 1995
40	Onsite/offsite	40. Trade Waste Consent - Dow Agrosciences - November 1970 to February 1991	N/A (Various)	N/A (Various)	N/A (Various)	Assorted documents including, details of trade waste releases, report on the failed rupture disk in TCP Plant (1986). Investigation of bursting disc failure by Department of Scientific and Industrial Research. Correspondence regarding Waireka dump leachate issues and removal.
41		41. DowAggriscience site layout	2014	ERM	Dow AgroSciences (NZ) Ltd	Site plan including suspected burial sites and drum storage areas. Identical plan included within Record 4.
42		42. Groundwater Monitoring Event Dow Agrosciences 2010 (physical document)				
43		43. Assessment of dioxins in the vicinity of a 2,4,5-t manufacturing facility in New Plymouth, NZ (physical document)	1998	CanTox Inc	Dow AgroSciences (NZ) Ltd	
44	Onsite	44. New Plymouth/Waireka environmental assessment project (physical document)	1992	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Environmental assessment with the introduction of the RMA in 1992.
45	Onsite	45. Contaminated Anisole Compound and Contaminated Solid Waste	1979	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Report from anisole contaminated bulk material (drums, timber and refuse) stored in the Dangerous Goods Compound. Includes discussions of potential solutions to dealing with contamination.
46	Onsite	46. Laboratory request form	1983-1984	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	1983: Soil sampling from the dangerous goods compound, scheduled for TCDD analysis. 1984: Soil sampling across site, scheduled for TCDD analysis.
47	Onsite	47. Soil from excavations for expansion tank and blowdown tank at TCP plant.	1986	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Hand written notes and reported concentrations (TCA) from soil sampling following excavations along the western wall of the TCP plant. Excavated refuse material (concrete and other rubble) stored under tarpaulins in liquids incinerator compound. Excavated soil stored behind R&D.
48	Onsite/offsite	48. TCDD content of soils	1986	N/A	Dow AgroSciences (NZ) Ltd	Soil sampling with locations positioned at the site boundary ('A') and beyond the boundary ('B'), submitted for TCDD analysis.
49	Onsite and offsite	Trichlorophenol (TCP) process release, 15 April 1986 Department of Scientific and Industrial Research Report	1986	Department of Health	Dow AgroSciences (NZ) Ltd	Department of Health investigation report following TCP Plant release. Wipe tests and soil samples were collected from areas downwind of the TCP Plant. TCDD is expected to not have travelled far beyond the immediate vicinity, with a significant fraction of the release believed to be confined to the TCP process building.
50	Onsite	Untitled document	1989	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	A site plan showing soil sampling between 1979 to 1988 (analyte unknown, likely to be TCDD). Accompanied text mentions investigation required in "areas where rubble has been dumped following building construction/alteration", "location of buried crushed drums discarded during construction of the Dangerous Goods Compound".
51	Onsite	51. Lab Request Form	1985	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Soil sampling with locations positioned at the site boundary ('A') and beyond the boundary ('B'), based on information from other documentation (Record 49). Samples submitted for TCDD analysis. Samples targeting stack emission dispersion based on a simulation.
52	Onsite	52. Lab Request Form	1985	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Soil sampling from compound associated with liquids incinerator building, submitted for TCDD analysis.
53	Onsite	53. Lab Request Form	1983	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Duplicate of Record 46. Soil samples at Ex manufacturing site for TCDD analysis.
54		54. Lab Request Form	1979	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Soil samples collected from "anisole storage compound", submitted for TCDD analysis.
55	Onsite	55. IWD Manufacturing Site	1988	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Report from Paritutu site which highlights potential areas of contamination, monitoring undertaken to date, and recommendations for further investigations and management (where identified).

56	Onsite	56. AST from old phenoxy plant (Building 3) and trichlorophenol plant (Building 13)	1986	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Hand written notes and reported concentrations (total phenoxies and chlorophenols, TCDD) from the sampling of building floors and underlying soil from beath Building 03 and Building 13.
57	Onsite	57. IWD Storage Tank List	1981	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	Register of storage tanks contained onsite, including contents, capacity, plant (area), construction, and whether or not underground.
58	Onsite/offsite	58. Soil Sampling Protocol	1985	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	The proposed soil sampling methodology for TCDD analysis (presumably associated with Record 48 - based on figures presented within each document).
59	Onsite	59. Survey of Ivon Watkins-Dow LTD Manufacturing Site, Paritutu Road, New Plymouth, New Zealand	N.D.	Dow AgroSciences (NZ) Ltd	Dow AgroSciences (NZ) Ltd	An indicative sampling program for the site (incomplete document).
60	Onsite	Natural Biological Attenuation of Phenoxy Herbicides in Groundwater: Dow Agrosciences, Paritutu Site, New Zealand	2001	Gary Klecka (Dow)	Bioremediation Journal (Potentially) Dow Agrosciences (NZ) Ltd	Academic publication - natural attenuation of phenoxy herbicides at Paritutu. Duplicate of Record 14.
61	Onsite	62. Site Transfer Report	2023	Tonkin & Taylor Limited	Dow Chemical (NZ) Ltd	Report summarising documents supplied by Corteva Agriscience NZ Ltd (Corteva) regarding demolition of buildings at 89 Paritutu Road, New Plymouth (the site) prior to transfer of the site to Dow ownership.

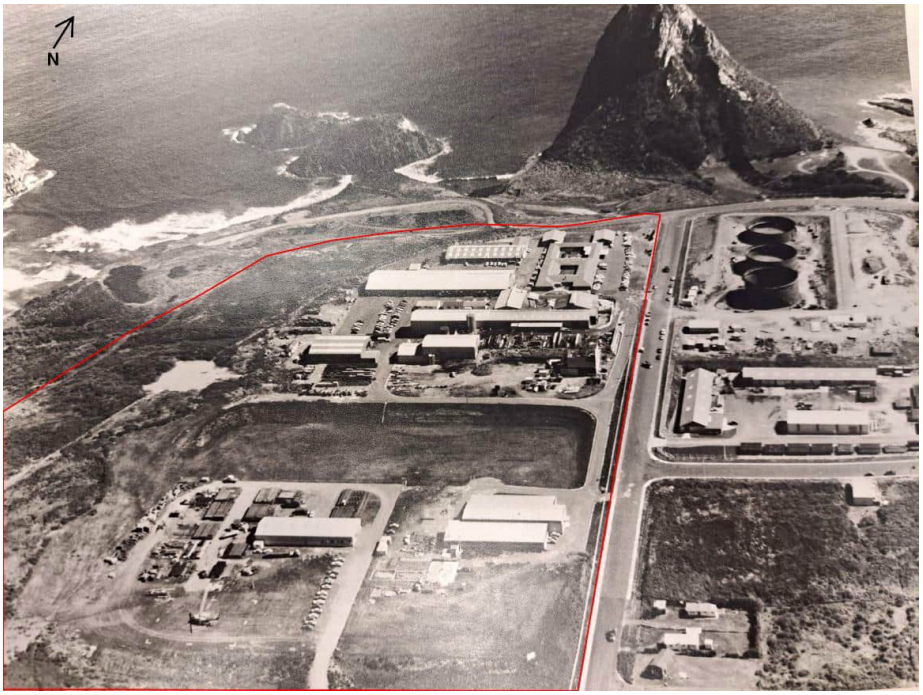
Appendix D Historical Aerial Photographs

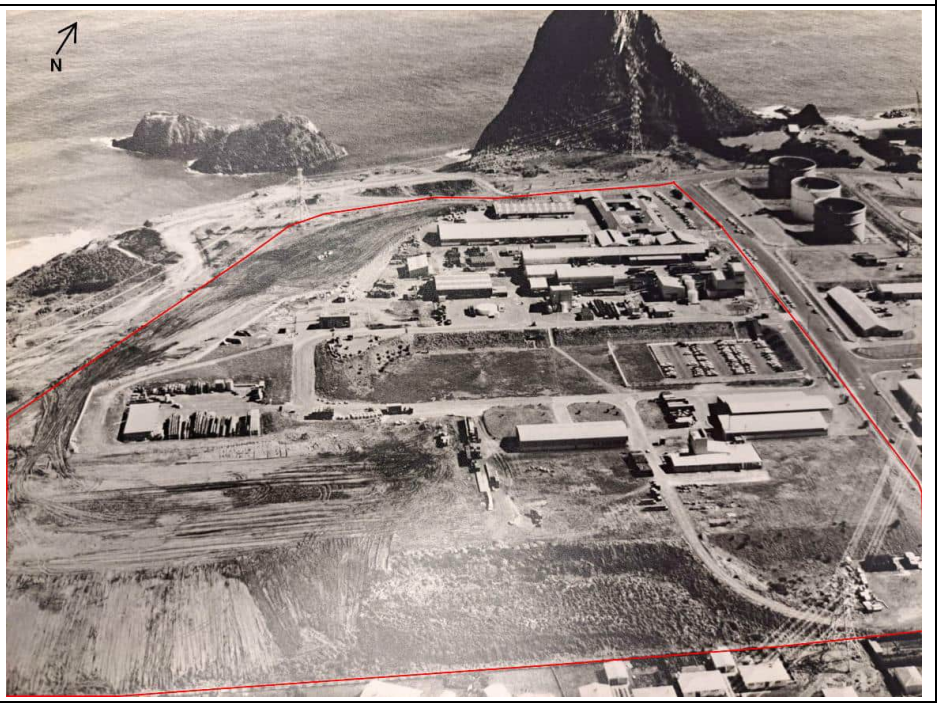
Date and source	Photograph showing orientation of image and approximate extent of the current site (red outline)
1949 Retrolens	
1958 Alexander Turnbull Library	

1965 Alexander Turnbull Library	
1965	

1967	

1968 Retrolens	
1968	

1968-69	
1970 Retrolens	

1975 Alexander Turnbull Library	
1975	

1984 Alexander Turnbull Library	
1991	

2000 Retrolens	
2007 Google Earth Pro (sourced from TRC)	

2017 Google Earth Pro	
2022 Google Satellite	

2023	

Appendix E Chemicals used/manufactured on site

E1 List of active substances

Appendix E Table 1: Active substances historically manufactured, reformulated and/or packaged at Dow Paritūtū [redacted] pers. comms). Not all substances were produced in bulk

Fungicides	Herbicides		Insecticides	Other
Dithiocarbamates: • Dazomet • Maneb • Mancozeb • Thiram • Ziram	**Aromatic acid:** • Aminopyralid • Chloramben • Clopyralid • Dicamba • Fluroxypyr-meptyl • Picloram • Triclopyr	**Other:** • Amitrole • Bensulide • Bromoxynil • Cacodylic acid • Cyhalofop-butyl • Dalapon • Dichlobenil • Dinitramine • Dinoseb • Diuron • Endothal • Florasulam • Flumetsulam • Glyphosate • Haloxyfop • Linuron • Metosulam • MSMA • Nitrofen • Oxyfluorfen • Paraquat • Phenmediphan • Propachlor • Propyzamide • Pyroxsulam • Sethoxydim • Sodium chloroacetate • Sodium chlorate • Sulfallate • Trichloroacetic acid • Trifluralin	**Organochlorine:** • DDT • Heptachlor • Lindane	**Fertilizer:** • Iron EDTA • Nitrapyrin • NPK (Nitrogen, Phosphorus and Potassium)
Inorganics: • Copper • Phenyl mercury • Sulphur • Zinc	**Phenoxy- acids**: • 2,4-D • 2,4-DB • 2,4,5-T • 4-CPA • Fenoprop/ 2,4,5-TP • MCPA • MCPB • Mecoprop		**Organophosphate:** • Bromophos • Chlorpyrifos • Coumaphos • Crufomate • Diazinon • Dichlofenthion • Dichlorvos • Ethoprofos • Fenchlorphos • Fenitrothion • Malathion • Phorate • Phosphamidon • Trichlorfon	**Sprout inhibitors and growth regulators:** • Chlorethephon • Chlorpropham • Maleic hydrazide • Naphthaleneacetamide • Propham **Disinfectants and surfactants** • Alkylaryl polyoxyethylene glycol • Benzalkonium chloride • Polyvinyl polymer Sodium hydroxide
Other: • Captan • Chlorothalonil • Dichlone • Dichlozoline • Fenarimol • Fenbuconazole • Myclobutanil • Quinoxyfen • Quintozene • Thiophanate-methyl • Triforine	**Triazine** • Atrazine • Prometryn • Propazine • Simazine • Terbutryne		**Other** • Buprofezin • Carbaryl • ʎ-Cyhalothrin • Cyhexatin • Fenpyroximate • Methoprene • Methoxyfenozide • Pyrethrins • Spinetoram • Spinosad • Sulfoxaflor • Tetradifon	**Other** • Coumafuryl (rodenticide) • Metaldehyde (molluscicide) • Methyl bromide (fumigant) • PCP (wood preservative) • Rifamycin (antibiotic) • 2,4,6-Trichlorophenol (wood preservative)

E2 Active ingredients managed on site

Appendix E Table 2: Active ingredients historically manufactured, reformulated and/or packaged at Dow Paritūtū in 2014. ***Source: Renewal Application for Discharge of Tradewaste, (2014), Dow AgroSciences (NZ) Limited***

Substance	Category	Formulated	Repacked	Assembled	Stored
2,4-D acid	Herbicide	X			
2,4-D ethyl hexyl ester	Herbicide	X			
2,4-DB	Herbicide	X			
Aminopyralid	Herbicide	X			
Buprofezin	Insecticide		X		
Chlorpyrifos	Insecticide	X			X
Chlorpyrifos-methyl	Insecticide	X			
Chlorpyrifos-butyl	Herbicide	X			
Clopyralid	Herbicide	X			
Dicamba	Herbicide	X			
Fenbuconazole	Fungicide				X
Fenpyroximate	Herbicide		X		
Florasulam	Herbicide	X			
Flumetsulam	Herbicide				X
Fluroxypyr	Herbicide	X			
Glyphosate	Herbicide	X			
Haloxyfop-P-methyl ester	Herbicide	X			
Lambda-cyhalothrin	Insecticide				X
MCPA	Herbicide	X			
MCPA ethyl hexyl ester	Herbicide	X			
MCPB	Herbicide	X			
Mancozeb	Fungicide				X
S-Methoprene	Insecticide	X			
Methoxyfenozide	Insecticide		X		
Myclobutanil	Herbicide		X		X
Nitrapyrin	Fertiliser		X		
Oxyfluorfen	Herbicide	X			
Picloram	Herbicide	X			
Picloram iso-octyl ester	Herbicide	X			
Propyzamide	Herbicide				X
Pyroxsulam	Herbicide				X
Quinoxyfen	Fungicide		X		
Spinetoram	Insecticide	X			

Substance	Category	Formulated	Repacked	Assembled	Stored
Spinosad	Insecticide	X			
Sulfoxaflor	Insecticide	X			
Triclopyr butoxyethyl ester	Herbicide	X			
Triclopyr triethylamine	Herbicide	X			
Trifluralin	Herbicide				X

Notes:

Formulated – Raw materials are formulated together into the finished product.

Repacked – Finished product is transported to site and repacked in new container(s).

Assembled – Finished product already packed into containers are transported to site and placed in different outer packaging.

Stored - Finished product in final packaging is transported to site and stored in the warehouse.

E3 List of storage tanks

Appendix E Table 3: List of IWD storage tanks and recorded contents in 1981. ***Source: IWD Storage Tank List, (1981), IWD.***

Plant	Content	Underground Storage Tank	Capacity (L)
Formulations	2,4,5-T Butyl Ester		47,000
	Triclopyr Butoxy Ethyl Ester		24,000
	2,4-D Butyl Ester		47,000
	2,4-D Amine Conc		53,000
	MCPA		73,000
	MCPB		73,000
	Gardemul C-55		8,200
	Empty		8,200
	Pegasol R-100		47,000
	Diesel Oil		47,000
	Empty		47,000
	Tordon 520 (Picloram)		47,000
	Hi Ester D		68,000
	Hi Ester T/Diesel		68,000
Surfactants	Bioquat 501 (Benzalkonium chloride)		13,000
	Obsolete	X	22,700
	Hydrochloric Acid		13,600
	Obsolete	X	22,700
	Mycosan S (Sulphur fungicide)		42,000
	Suds Tank		36,000
	Gardinol MLS (Fatty acid sulphate)		21,000
	Gardinol LEH30 (Fatty acid sulphate)		21,000

Plant	Content	Underground Storage Tank	Capacity (L)
	Gardinol NH (Fatty acid sulphate)		16,500
	Gardinol 4000 (Fatty acid sulphate)		16,500
Protectants	Empty	X	23,700
	(Former) Lepidex/Dursban (Triazophos/Chlorpyrifos)		13,700
Triazines	Propylene Glycol		19,000
	Xylene	X	11,400
	50% Caustic Soda		7,000
Fire Water Services	Fire Water		1,660,000
TCP	Methanol	X	34,000
	Wet Methanol	X	6,800
	50% Caustic Soda		12,700
	Contaminated Xylene	X	6,800
	Xylene	X	13,600
Phenoxy Prep	Overflow/Vent Tank	X	6,800
	Iso-butanol	X	14,000
	Iso-butanol	X	14,000
	n-Butanol	X	22,700
	Iso-butanol	X	6,800
	Empty	X	4,530
	Empty	X	4,530
	Iso-octanol	X	6,800
Services	Automotive diesel	X	5,000
	Regular Petrol		400
Utilities (Boiler, Dangerous Goods, Process Water)	Fuel Oil No. 5		45,600
	Contaminated Methanol		41,000

Plant	Content	Underground Storage Tank	Capacity (L)
	Process Water		181,800
Vet Med – Boiler	Fuel Oil No. 5		4,600
Pilot Plant	Empty		2,000
	Empty		2,000
Services (Mobil Tank)	Automotive diesel		4,600
Boiler (Mobil Tank)	Fuel Oil No. 5		45,600
Vet-Med Boiler (Mobil Tank)	Fuel Oil No. 5		4,600
Incinerator (Mobil Tank)	Fuel Oil No. 2 or Xylene		16,000
Protectants (Mobil Tank)	Certrex 47		23,700
TCP (Mobil Tank)	Xylene		13,600

E4 Summary of key chemical synthesis processes

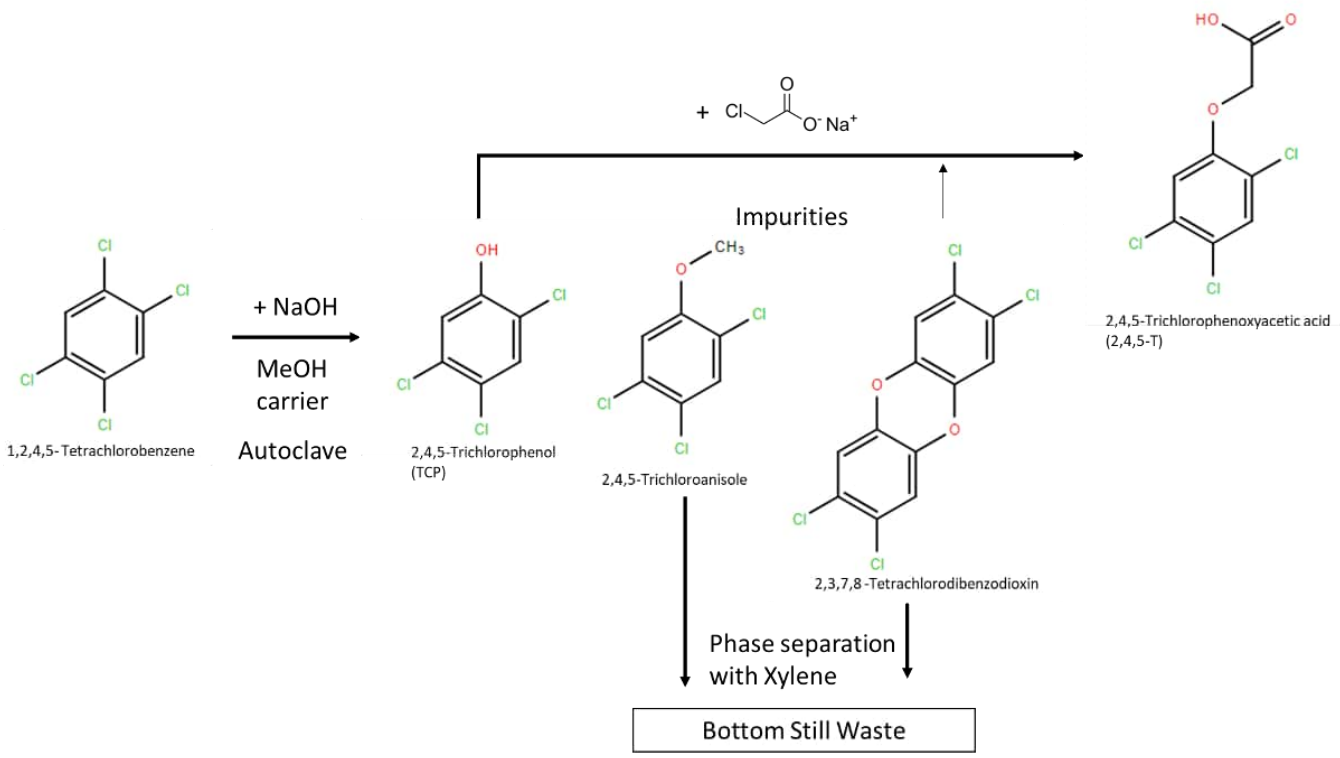


Figure Appendix E.1: Simplified synthesis pathway for 2,4,5-TCP and 2,4,5-T. The process also produced acidic brines as a waste. 2,3,7,8-TCDD was the major dioxin impurity, but other PCDD/F could also be inadvertently formed.

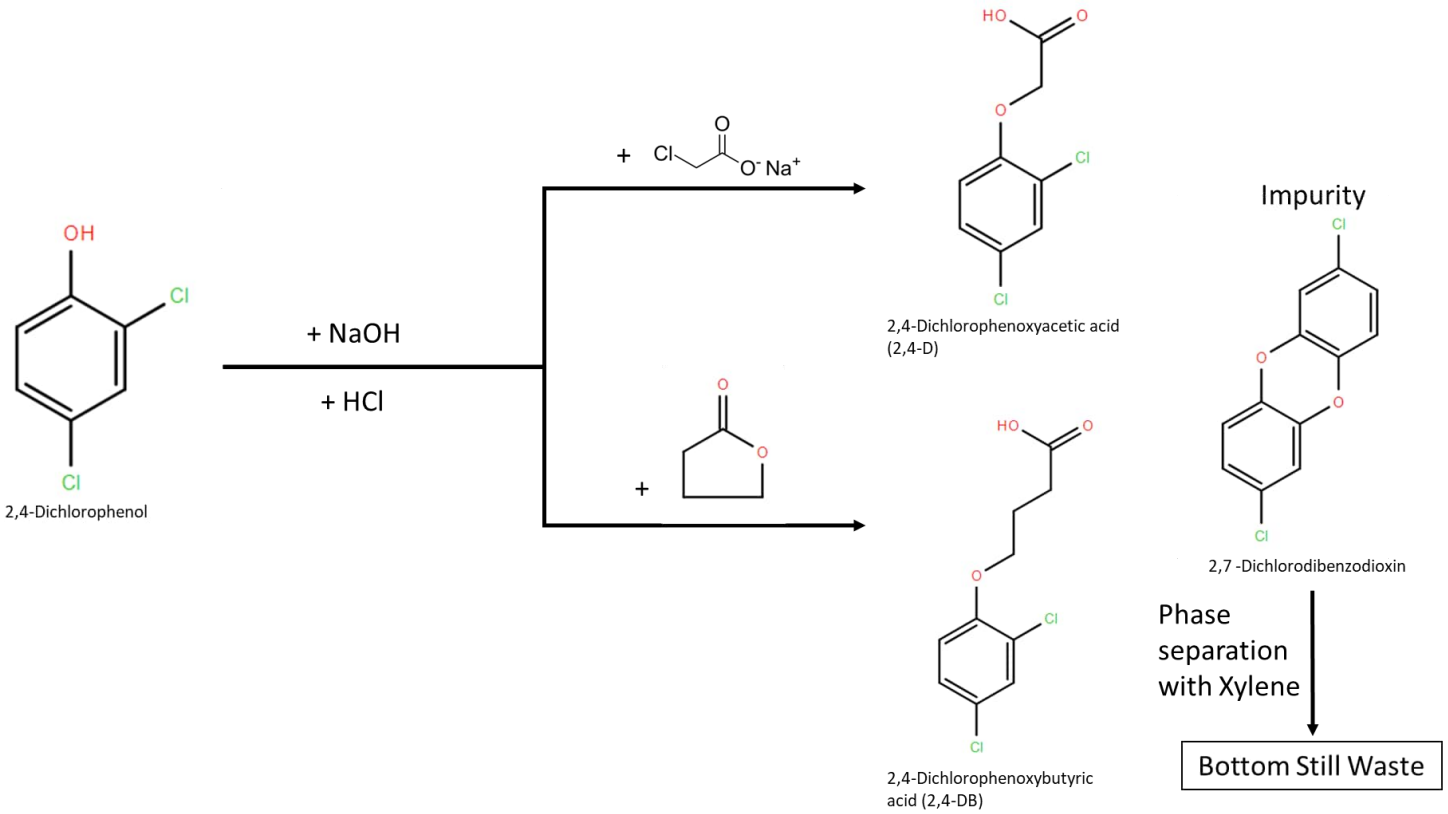
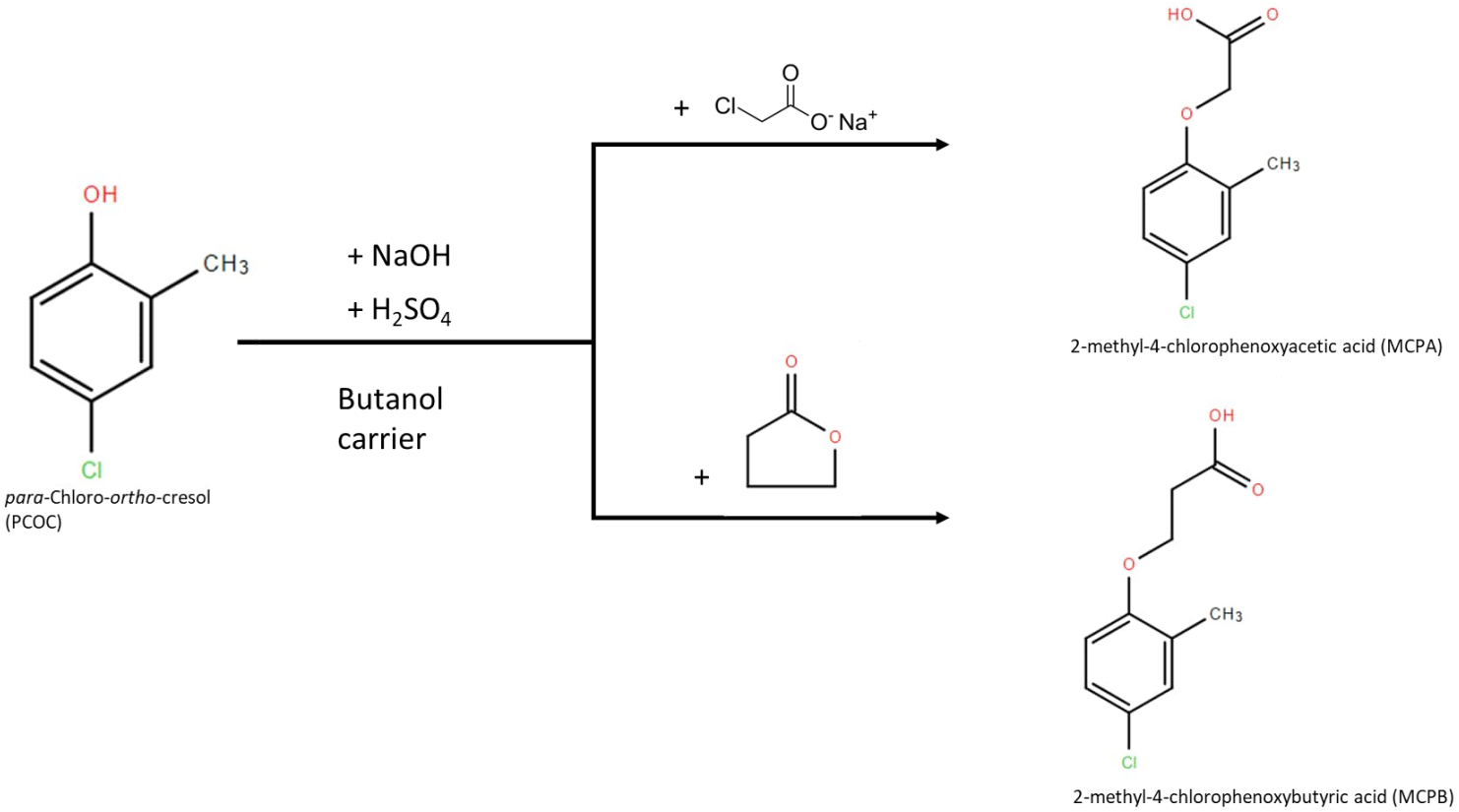


Figure Appendix E.2: Simplified synthesis pathway for 2,4- D. The process also produced acidic brines as a waste. Non- 2,3,7,8 substituted dioxins, for example 2,7-dichlorodibenzodioxin were the more common reported impurity in this process.



para-Chloro-*ortho*-cresol (PCOC)

2-methyl-4-chlorophenoxyacetic acid (MCPA)

2-methyl-4-chlorophenoxybutyric acid (MCPB)

Figure Appendix E.3: Simplified synthesis pathway for MCPA and MCPB. The process also produced acidic brines as a waste.

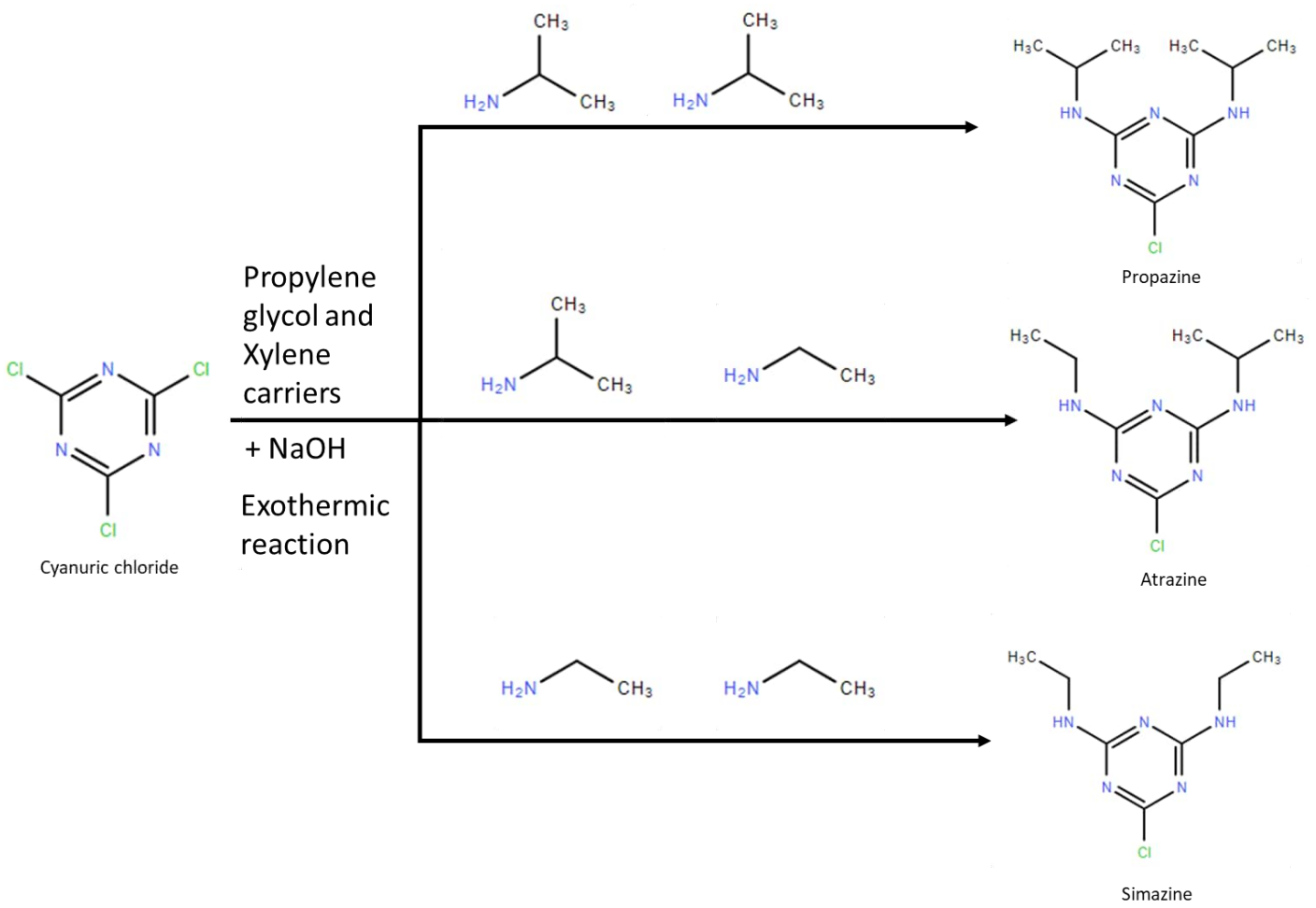


Figure Appendix E.4: Simplified synthesis pathway for Triazine herbicides. The process also produced acidic brines as a waste.

Appendix F Community Engagement Survey Questions

Paritūtū Site – community information gathering survey

Purpose

This initial short public survey serves two purposes at this stage of the project:

- To provide an early opportunity for the public to feel heard in relation to the Paritūtū site.
- To identify members of the wider community may also have information related to the Paritūtū site that hasn't been captured elsewhere.

Questions

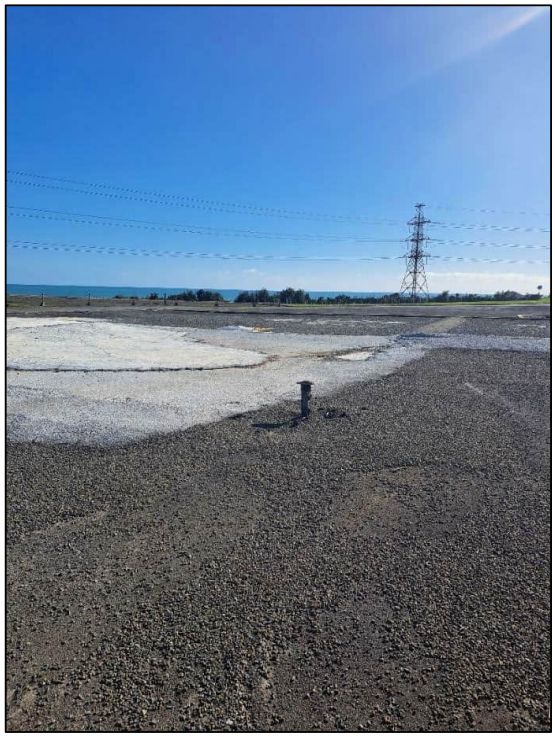
Questions and supporting text	Survey logic
Dow Chemical (NZ) Ltd assumed ownership of the Paritūtū site in February 2023, and has committed to undertaking a full detailed investigation of the site, followed by remedial works, as required. A thorough and complete site investigation is essential to confirm contaminated areas and the level of contamination. The project is long-term and expected to take a number of years to complete. No future use of the site has been proposed at this stage. Future use will be the subject of further discussion with regulatory authorities, iwi/hapū, and the community as the site investigation evolves. As part of the initial steps of the investigation process, Dow is interested in hearing from people who were involved with the Paritūtū site during its operational period. This short survey aims to gather information solely related to Paritūtū Site activities (i.e. activities which took place within the Paritūtū Site boundary), which could have led to potential contamination. Please be aware that offsite activities are not within the scope of the investigation. More information about what's involved in the project can be found here. If you have information you would like to share about offsite activities or other concerns, in the first instance please contact Taranaki Regional Council.	Introductory text
The responses to the survey will be used only for the purposes stated above and will not be shared with any external parties. Only Dow and Tonkin + Taylor will be able to see and review the responses. The information that is gathered will be summarised and used in the preparation of site reports that may be publicly shared. However, personal details or verbatim responses that could be attributed to an individual will not be included in any reporting. We may retain all the data we collect, including personal information (on both our active systems and our archive systems) for the duration of the project, which is likely to span some years. Please note that providing your contact information is **optional** for this survey. We are only asking for this information if you have relevant information about the Paritūtū site. This contact information will only be used by the Dow and Tonkin + Taylor project team, if we need to discuss your response further with you. Please do not send us sensitive personal information or include it in your survey response. You have the right to ask for a copy of any personal information we hold about you, and to ask for it to be corrected if you think it is wrong. If you'd like to ask for a copy of your information, or to have it corrected, please contact us at .	Privacy statement

Questions and supporting text	Survey logic
1. Please describe your association with the Paritūtū site. *Please identify how you were associated with the Paritūtū site, while it was in operation. For example, were you employed on the site, did you deliver products to or from the site, or were you a resident neighbouring the site?*	Free text cell response. Compulsory box. *Clarifying text.*
2. Are you aware of locations where significant spills/leaks of contaminating material may have occurred onsite at Paritūtū?	Yes/no question. If answering yes, go to question 3. If answering no, go to question 4.
3. You answered yes to the previous question. Please provide any details you may have about significant spills/leaks of contaminating material at the Paritūtū site. *For example, if known, please describe the locations of significant spills/leaks of contaminating material, approximate size of spill/leak, and chemicals involved.*	Free text cell response. *Clarifying text.*
4. Are you aware of locations where contaminated waste (e.g. waste drums) may have been buried onsite at Paritūtū?	Yes/no question. If answering yes, go to question 5. If answering no, go to question 6.
5. You answered yes to the previous question. Please provide any details you may have about contaminated waste that may have been buried onsite at Paritūtū. *For example, if known, please describe the locations of burial of contaminating material, approximate volume (or quantity of barrels), and chemicals involved.*	Free text cell response. *Clarifying text.*
6. Do you have any other information about activities onsite at Paritūtū that you think may be useful to the investigation?	Yes/no question. If answering yes, go to question 7. If answering no, go to question 8.
7. You answered yes to the previous question. Please provide details of any other information about activities onsite at Paritūtū that you think may be useful to the investigation.	Free text cell box.
8. If needed, would you be happy for a representative of Dow/the project team to contact you to discuss your answers further?	Yes/no question. Compulsory box. If answering yes, go to question 10. If answering no, go to end of survey.
9. Please provide your name if you wish to be contacted.	Free text cell box.
10. Please provide details on how best to contact you. *I.e. Phone number and/or email address.*	*Clarifying text.*
Thank you for taking the time to complete this survey. We value the information you have provided. Dow Chemical (NZ) Ltd is committed to undertaking a full detailed investigation of the Paritūtū site, followed by remedial works as required. As a reminder, please be aware that offsite activities are not within the scope of our investigation. More information about what's involved in the project can be found here. If you have information you would like to share about offsite activities or other concerns, in the first instance please contact Taranaki Regional Council.	Automatic response at survey completion.

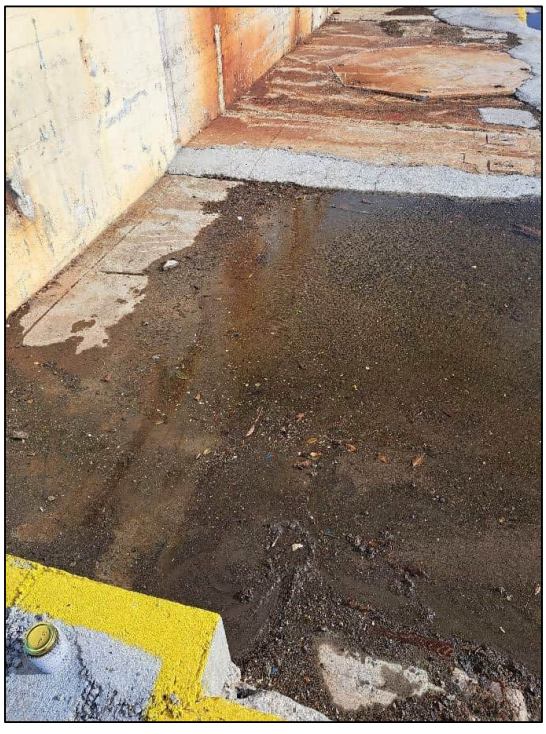
Appendix G General Site Photos

Photograph 1: Welded fill point for process water piping adjacent to Building 15.

Photograph 2: Welded fill point for process water piping adjacent to Building 09.

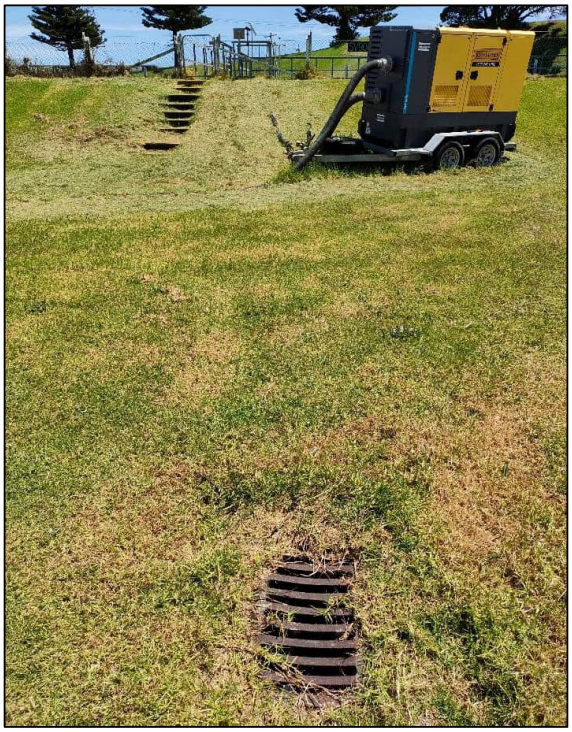


Photograph 3: Welded fill point for town mains water adjacent to Building 30.



Photograph 4: Demolition debris/sediment adjacent to Building 03.

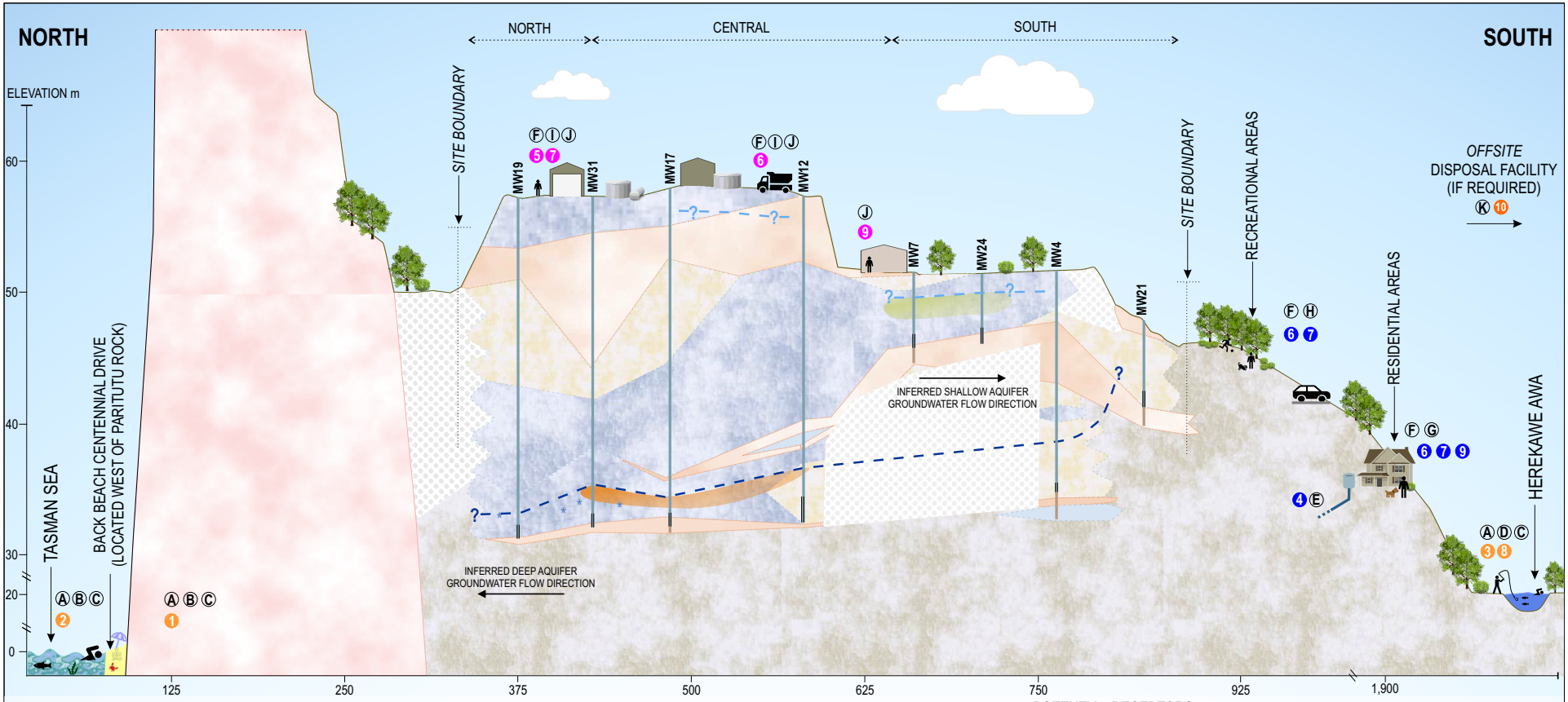
Photograph 5: Former storage of round drums on the concrete adjacent to Building 03.



Photograph 6: Pumps servicing the stormwater ponds SV9000/9100.

Photograph 7: View looking west showing the former footprint of Building 13, the retaining wall to the top yard behind Building 3.

Appendix H Conceptual Site Model



NOTES

1. THIS CONCEPTUAL SITE MODEL IS NOT TO SCALE AND IS INTENDED TO DISPLAY EXPOSURE PATHWAYS ONLY.
2. WITH RESPECT TO THIS INVESTIGATION, THE SOURCE OF POTENTIAL CONTAMINATION IS FROM SITE ACTIVITIES LEACHING INTO THE SURROUNDING SOILS, STORM WATER AND GROUNDWATER.
3. POTENTIAL EXPOSURE PATHWAYS ARE COLOUR CODED TO INDICATE IF THE PATHWAY IS:
   INCOMPLETE: **BLUE**
   POTENTIALLY COMPLETE: **ORANGE**
   COMPLETE: **PINK**

POTENTIAL EXPOSURE PATHWAYS (NOTE 3)

① GROUNDWATER FLOW TO CLIFF SEEPS (VIA DEEP AQUIFER)
② GROUNDWATER FLOW TO COASTAL MARINE AREA (VIA DEEP AQUIFER)
③ GROUNDWATER FLOW TO HEREKAWE AWA (VIA SHALLOW AQUIFER)
④ GROUNDWATER FLOW TO NEARBY PROPERTIES (VIA SHALLOW AQUIFER)
⑤ DERMAL CONTACT, INGESTION OF CONTAMINATED MATERIALS (SOIL)
⑥ MOBILISATION DURING DISTURBANCE WORKS (INCL. DISCHARGE TO SURFACE OR GROUNDWATER)
⑦ INHALATION OF VOLATILE CHEMICALS, DUST, FIBRES
⑧ STORMWATER DISCHARGED DIRECTLY TO HEREKAWE AWA
⑨ VAPOUR INTRUSION
⑩ EXCAVATED MATERIAL DISPOSED OFFSITE (IF REQUIRED)

POTENTIAL RECEPTORS

Ⓐ RECREATIONAL USERS
Ⓑ SHORE/ MARINE BIOTA
Ⓒ PUBLIC CONSUMING BIOTA
Ⓓ FRESHWATER BIOTA
Ⓔ ABSTRACTION OF GROUNDWATER (CONSIDERED INCOMPLETE)
Ⓕ TERRESTRIAL ECOLOGY
Ⓖ RESIDENTS OF SURROUNDING PROPERTIES (CONSIDERED INCOMPLETE WITH RESPECT TO VAPOUR INTRUSION)
Ⓗ GENERAL PUBLIC UTILIZING RECREATIONAL AREAS
Ⓘ SITE USERS (INVOLVED IN GROUND DISTURBANCE WORKS)
Ⓙ POTENTIAL FUTURE SITE USERS (IF CONTAMINATED SOILS ARE NOT MANAGED APPROPRIATELY TO PREVENT FUTURE EXPOSURE PATHWAYS)
Ⓚ RECEPTORS IN VICINITY OF THE DISPOSAL SITE, PROVIDED OFFSITE DISPOSAL IS REQUIRED (NEGLIGIBLE HUMAN HEALTH EFFECTS IF MATERIALS ARE DISPOSED OF TO AN APPROPRIATE RECEIVING FACILITY).

LEGEND

- LOAMY SAND/ SANDY LOAM
- ANDESITE
- UNCERTAIN
- UNKNOWN
- SAND
- SAND (WITH ASH)
- CLAY
- DEEP AQUIFER LEACHING
- SHALLOW AQUIFER LEACHING
- DEEP AQUIFER
- SHALLOW AQUIFER

TITLE
CONCEPTUAL SITE MODEL (NTS)
NORTH TO SOUTH

CLIENT, PROJECT
DOW CHEMICAL (NZ) LIMITED
PARITUTU CONTAMINATED LAND ASSESSMENT

Tonkin+Taylor

PROJECT No.	21795.0210
DRAWN	CLHE
APPROVED	
DATE	JUNE 2024

Appendix I Other information

- **RSLU**

Appendix I - Screenshot of information available on RSLU

RSLU Detail Report For 0048-0

26 July 2024

Authorisation Number	0048-0
Local Authority	New Plymouth District

Classifications

Anzsic Division	Manufacturing
Anzsic Subdivision	Petroleum, Coal, Chemical and Associated Product Manufacturing
Anzsic Group	Other Chemical Product Manufacturing
Anzsic Class	Pesticide Manufacturing

Location

Common Address	89 Paritutu Road
River (Catchment)	Tasman Sea (Tasman Sea)
Map References	P19:986-371 Global Positioning System
VNZ Legal Desc	LOT 3 DP 8465 LOT 1 DP 9022 LOTS 1 & 2 DP 9829 LOT 1 DP 10018
Valuation Ref	11720 568 - 0

Parameters

Classification	Chemical Processing/Manufacturing
Confirmation of Status	1(b)-Haz Subs Present-Risk acceptable for land use
HAIL	35
Land Use	Commercial/Industrial
RSLU Classification	Chemical Processing/Manufacturing

General Comments

Entered By: D Busing
Date: 12.7.93
Updated By: W McLarin
Date: 16.9.97 & 15/5/00

Known Owners and Occupiers:
Dow AgroSciences (NZ) Ltd
DowElanco NZ Ltd
Ivon Watkins Dow Ltd.

Information on this Site:
1993 Company investigating soil and groundwater on site.
TRC Annual Reports 93-50, 94-53, 95-78, 96-74,97-88, 98-77,99-39.
UIR 9596073 files.
P 3/19/3 NPDC UST list indicates tanks are located here.

0016wll ground water monitoring bores

UIR 9596073 leakage of trade waste pipes.
UIR 9596241 circulating tank overflow - 20 litres of sulphuric acid discharged.

Discharge Consents Issued By TRC or TCC:
TRK 924020 Air permit, synthesis and formulation of detergents, surface active agents, insecticides, herbicides, fungicides, plant hormones, like organic compounds and associated processes.
TRK 924107 Air discharge from an agrchemical formulation process (lapsed).
TRK964020 Air discharge.
TRK934108 Stormwater discharge.
TRK960269 Waireka Research Station.
TRK961229 Leachate discharge, Waireka Research Station.
TRK964571 Waireka coastal structure.(surrendered)
0016WLL groundwater monitoring bores.

Investigated for technical report 2001-42 "Investigation of alleged agrichemical waste disposal sites in New Plymouth"

26 July 2024

RSLU Detail Report For 0048-0

Site F (IWD-1 south eastern corner of property) 2598663-6237173
Site U (IWD-2 south west area of property)
Site Zf (IWD-3 south eastern corner of site, north of site F)
Site Zg (IWD-4 western area, middle of site)

Dioxin concentrations in residential soil, Paritutu, New Plymouth, Paddle Delamore Partners Ltd, September 2002

There may be other records of incidents, consents or reports associated with this site held by Taranaki Regional Council.

www.tonkintaylor.co.nz

Operations and Regulatory Committee
Public Excluded

In accordance with section 48(1) of the Local Government Official Information and Meetings Act 1987, resolves that the public is excluded from the following part of the proceedings of the Operations and Regulatory Committee Meeting on Tuesday 3 September 2024:

Item 13: Prosecution under the Resource Management Act 1991 for offences against section 338(1)(b) of the Resource Management Act 1991.

The matter to be considered while the public is excluded, the reason for passing this resolution in relation to the matter, and the specific grounds under section 48(1) of the Local Government Official Information and Meetings Act 1987 are as follows:

General subject of each matter to be considered	Ground(s) under section 48(1) for the passing of this resolution	Reason for passing this resolution in relation to each matter
Item 13: In accordance with Section 48(1) of the Local Government Official Information and Meetings Act 1987, this is to be considered with the public excluded as the public conduct of the whole or relevant part of the proceedings would be likely to prejudice the maintenance of the law, including the prevention, investigation, and detection of offences, and the right to a fair trial.	That the public conduct of the whole or the relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist under section 6 (a) and section 7 (2) (a) and (2) (g) of the Local Government Official Information and Meetings Act 1987.	The alleged offender(s) has not as yet had the opportunity to respond to the charges laid. It is therefore important that the principles of natural justice are applied and that legal privilege is maintained. Making any of this information publically available would result in a breach of the Privacy Act 2020. The public interest in knowing the nature of the offence and why Council has made the decision to prosecute is not outweighed by the harm that would be caused to the alleged offender(s).

AGENDA AUTHORISATION

Agenda for the Operations and Regulatory Committee meeting held on Tuesday 3 September 2024.

Confirmed:

26 Aug, 2024 12:20:51 PM GMT+12

A J Matthews
Director-Environment Quality

Approved:

26 Aug, 2024 3:06:57 PM GMT+12

S J Ruru
Chief Executive