

IN THE MATTER of the Resource Management Act 1991
("RMA" or "the Act")

AND

IN THE MATTER of an application under section 88 of the
Act to **NAPIER CITY COUNCIL** (ref
RMA19006) by **DURHAM PROPERTY
INVESTMENTS LIMITED** to subdivide
and develop the Main Residential Zone
at 16 and 38 Willowbank Avenue, Te
Awa, Napier.

**STATEMENT OF EVIDENCE OF CARL VERNON O'BRIEN
CONTAMINATED LAND**

1. INTRODUCTION

- 1.1 My full name is Carl Vernon O'Brien. I am General Manager at Geosciences Ltd ("GSL"), a specialist contaminated land advisory consultancy.
- 1.2 This evidence is given in respect of resource consent application RMA19006 ("Application") by Durham Property Investments Limited ("Applicant") to Napier City Council ("Council") for the development of 162 dwellings and a staged subdivision to form 181 residential lots, at 16 and 38 Willowbank Avenue, Napier ("Site").

Qualifications and experience

- 1.3 I hold a Post Graduate Diploma in Environmental Management (Distinction) (2013) and a Bachelor of Science (Biology) (2008) from Auckland University.
- 1.4 I have some 12 years' experience working in resource management consultancies. My specialist area of expertise is in environmental management; that is, understanding the effects of human activities on the environment and assessing risks to both human health and the natural environment.
- 1.5 My current role focuses on contaminated land management, and includes undertaking preliminary and detailed site investigations, development of remediation and site management processes commensurate with the scale and degree of impacts identified.
- 1.6 My qualifications and experience meet the requirements of a 'Suitably Qualified and Experienced Practitioner' as detailed in the User's Guide: National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health

(MfE 2012). A selection of significant projects I have been involved with is attached in **Annexure 1**.

Involvement in the project

- 1.7 Geosciences Ltd became involved in the project in 2018 when engaged alongside Development Nous Ltd to conduct a detailed site investigation across the piece of land identified for development.
- 1.8 In my role as General Manager for GSL I became specifically involved in the project in May 2021 at the time a hearing was determined necessary in order to provide expert evidence with respect to contaminated land matters on behalf of GSL. I am familiar with the experience and qualifications of both authors of the report.

Site visits and background material

- 1.9 I have reviewed the Detailed Site Investigation prepared by GSL and Development Nous Ltd and visited the site and its surrounds on 6 May 2021 to familiarise myself with the development area.
- 1.10 In preparing this evidence I have read:
- (a) The Council Officer's Report ("s42A report");
 - (b) Geotechnical Evidence and Investigation Reports from Resource Development Consultants Ltd; and
 - (c) Detailed site investigation report compiled by Johan Faurie of Geosciences Ltd and Sophia Edmead then of Development Nous Ltd.

Purpose and scope of evidence

- 1.11 The purpose of my evidence is to provide an assessment of the suitability of the piece of land for development in light of any actual and / or potential soil contamination and as required under the National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health ("NESCS").
- 1.12 My evidence is structured as follows:
- (a) Briefly describe the site (Section 3);
 - (b) Briefly describe the proposal (Section 4);
 - (c) Provide an overview of the regulatory framework relevant to my assessment (Section 5);

- (d) Detail the methodology used to assess contamination risks encountered during the site investigation (Section 6);
- (e) Document the detailed site investigation completed on the piece of land and comment on the appropriateness of the site for development from a site contamination perspective (Section 7);
- (f) Comment on issues raised by the Council Officer's report relevant to my area of expertise (Section 8);
- (g) Comment on issues raised by submitters relevant to my area of expertise (Section 9);
- (h) Comment on conditions (Section 10); and
- (i) Provide a brief conclusion (Section 11).

1.13 A summary of my evidence is contained in Section 2.

1.14 My evidence should be read together with the planning evidence, prepared by Matthew Holder (Development Nous Limited).

Expert Witness Code of Conduct

1.15 I have been provided with a copy of the Code of Conduct for Expert Witnesses contained in the Environment Court's 2014 Practice Note. I have read and agree to comply with that Code. This evidence is within my area of expertise, except where I state that I am relying upon the specified evidence of another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

1.16 I understand and accept that it is my overriding duty to assist the Independent Commissioner in matters which are within my expertise of Contaminated Land assessment.

2. SUMMARY OF EVIDENCE

2.1 As a result of Durham Property Investments Ltd proposal to develop the site for residential landuse, GSL were engaged alongside Development Nous Ltd to undertake a detailed site investigation to identify the location and extent of any actual and potential contaminating activities alongside assessing whether those activities had had any material impact on soil quality on site.

2.2 The DSI identified:

- (a) The site has a long history of agricultural landuses with pastoral farming notable in the earliest (1948) aerial imagery before being developed into market garden activities through until the 1980's;
- (b) In the late 1980's the south western portion of 38 Willowbank was planted into orchard and remained until the mid-200's when it was removed; and
- (c) Rotating pastoral landuse and market garden crops were observable from 2009 onwards.

2.3 Actual and potential contamination issues were noted to be primarily associated with primary productive landuse and associated potential bulk storage and use (application) of persistent pesticides. Secondary potential causes of contamination were identified within animal pens and within an area of burnt miscellaneous refuse.

2.4 Based on the historical history developed, intrusive soil sampling was undertaken to quantify any impacts to soil with 12 composite soil samples collected from areas of the site identified as likely to be subject to uniform distribution of contaminants. Composite soil samples were comprised of 10 sub samples and were targeted to areas of the site that had been under different crop patterns and divided into approximate 1 ha blocks. Seven discrete soil samples were collected from areas surrounding historic structures that represented potential hotspots of contamination.

2.5 Analysis of soil samples revealed:

- (a) All analytical results complied with the Soil Contaminant Standard for residential landuse as set under the NESCS and the applicable standard for the proposed development;
- (b) Results from all 12 composite soil samples were generally within the expected naturally occurring background ranges of soil for the site with the exception of composite soil sample 3 which was marginally elevated (10.8 mg/kg as opposed to the expected upper background limit of 9.0);
- (c) Low level elevations of heavy metals (arsenic, cadmium, copper, lead, nickel and / or zinc) were recorded in six of the seven discrete soil samples collected, but not at a level that was considered to present any risk to human health or the environment.;
- (d) Trace detections of the persistent pesticide DDT was recorded in one discrete sample while trace levels of Polycyclic aromatic Hydrocarbons were recorded in one other discrete soil sample; and

- (e) A blind field duplicate sample collected in accordance with the MfE CLMG revealed percentage variations within the range considered to represent a suitable repeatability standard confirming that the data set is consistent and the soil samples representative of the site conditions.
- 2.6 Based on the findings of the intrusive investigation, it was concluded that although soil on site showed detectable impacts from historic landuses, concentrations of priority contaminants were not recorded at a level considered to present any risk to human health under the current or proposed landuse.
- 2.7 The identification of HAIL ("MfE Hazardous Activities and Industries List or "HAIL") activities on site coupled with the detection of priority contaminants above the expected naturally occurring background ranges resulted in GSL concluding while the propose developed was considered to trigger the requirements of the NESCS as a controlled activity, no specific remediation or management activities would be required.
- 2.8 Standard erosion, dust and sediment controls consistent with best practice earthmoving activities are considered sufficient controls with regards to the requirements of Regulation 9 of the NESCS and no specific conditions or recommendations were considered necessary for the proposes development in light of the findings of the DSI.
- 2.9 Consequently, while the NESCS is applicable to the proposed development, I do not consider that there is any material reason related to soil contamination that would preclude the site for being suitable for residential development.

3. **SITE DESCRIPTION AND EXISTING ENVIRONMENT**

- 3.1 The site identified for development comprises two properties located at 16 and 38 Willowbank Avenue, legally described as Lots 1 & 2 DP 14417 and comprising a total of 13.7 ha in area (hereafter referred to as "the piece of land").
- 3.2 The piece of land is located some 3km west of Napier Town Centre on a rural landuse strip within the wider Napier urban residential area. At the time of GSL's site inspections, the Site consisted of open agricultural fields used for primary production purposes. A residential dwelling associated with the landuse was located in the north western corner of the portion of 16 Willowbank Avenue with a number of detached buildings within the centre of the piece of land.
- 3.3 Subsurface investigations undertaken by GSL during soil sampling, and Resource Development Consultants Ltd during liquefaction potential assessment, confirmed the subsurface soil profile to be consistent with the described natural geology comprising sand and silt within intermittent layers of clay and occasional organic soil horizons.

4. **DESCRIPTION OF PROPOSAL**

- 4.1 It is proposed to develop the site into intensive residential housing over a number of stages to result in full coverage of the site by single dwelling residential lots. The proposal results in subdivision of the current titles to form up to 181 residential lots, being a change in landuse of the site from primary production to residential. The development will also require the disturbance of an undercut of some 41,466 m³ of the existing ground surface, fill of 26,481 m³ of imported hardfill and some 22,683 m³ of cut to fill in order to facilitate the construction of accessways, services and building platforms.
- 4.2 The NESCS defines the end landuse as *Residential – Standard Residential lot for single dwelling sites with gardens, including homegrown produce consumption (10%)*.

5. **REGUALTORY FRAMEWORK**

National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health ("NESCS")

- 5.1 The NESCS came into effect on 1 January 2012. The NESCS supersedes any corresponding plan rules that relate to contaminated land, in accordance with section 43B of the Resource Management Act 1991 ("RMA").
- 5.2 The objective of the NESCS is to ensure that land affected by contaminants is identified and, where necessary, remediated or managed when being redeveloped in order to protect human health.
- 5.3 Section 5 of the NESCS provides that it only applies when the following activities are being undertaken on land where an activity or industry described in the HAIL is being, has been, or is more likely than not to have been, undertaken on the piece of land:
- (a) Removing or replacing all, or part of, a fuel storage system;
 - (b) Sampling the soil;
 - (c) Disturbing the soil;
 - (d) Subdividing land; and
 - (e) Changing the landuse.
- 5.4 Where those activities meet relevant criteria, they can be classified as permitted activities under section 8 of the NESCS. If they do not, the NESCS provides (in sections 9 to 11) that they will require resource consent as either controlled, restricted discretionary or discretionary activities.

- 5.5 The exception being Regulation 5(9) of the NESCS which notes the regulations do not apply where a detailed site investigation has been completed that demonstrates that any contaminants in or on the piece of land are at or below background concentrations.

Napier District Plan

- 5.6 Chapter 64 of the Napier District Plan delegates assessment of soil contamination matters to the NESCS instrument. No further requirements are present within the Napier District Plan.

Hawke's Bay Regional Resources Management Plan

- 5.7 Section 30(1)(f) of the RMA provides the Hawkes Bay Regional Council with a statutory duty to investigate land for the purpose of identifying and monitoring contaminated land and for the control of discharges of contaminants into or onto land or water and discharges to air.

- 5.8 With respect to the Regional Plan, Rules 47 – 52 (Chapter 6.6.7 Generic Discharges of Contaminants – Discharges to Land/Water) cover the discharges of contaminants to land. The RRMP outlines the classification status of each activity, conditions, standards, and terms to be met and matters for Council's control / discretion.

6. CONTAMINATION ASSESSMENT METHODOLOGY

- 6.1 In accordance with the MfE Contaminated Land Management Guidelines ("CLMG") and industry best practice, GSL undertook a two-tiered investigation and risk assessment to:

- (a) Determine the likelihood of actual or potential contamination existing on site through desktop assessment; and
- (b) Quantify of soil quality considering the potential for contamination to be present through targeted intrusive soil sampling.

Desktop review

- 6.2 The first phase of assessment was to undertake a desktop review of all available historical information (Council files, aerial imagery, certificates of title) relating to uses of the site that may present a risk of actual or potential soil contamination.
- 6.3 Where evidence was identified during desktop assessment for activities included on the MfE HAIL to have been, currently be, or more likely than not to have been, undertaken within the piece of land, a potential risk was identified and flagged as requiring further investigation.

Intrusive investigation

- 6.4 Following completion of the desktop assessment, a conceptual model of actual and potential contamination was developed to inform an appropriate soil sampling methodology to determine whether historic landuses had resulted in any adverse effects to soil quality on site. These areas were then subject to collection of representative soil samples and subsequent analysis at an accredited laboratory for the identified contaminants of concern.
- 6.5 Based on the analytical results returned, assessment is then made against the applicable Soil Contaminant Standard as directed under the NESCS for the particular landuse scenario, in this instance the Residential Standard.
- 6.6 Wider assessment of the analytical results is also undertaken to ensure that discharges from contaminated sites do not trigger any specific issues with respect to discharges to groundwater, surface water or air as directed by the Regional Resources Management Plan.
- 6.7 The MfE CLMG's directly provide for combining stages of investigation where it is practicable to do so. In this instance, I note that the site history directly provides combining of investigation stages on account of a long-standing use for primary production purposes with issues related to bulk application and storage of persistent pesticides.
- 6.8 It should be noted that the presence of actual or potential contamination does not preclude a piece of land being 'fit for purpose'. Rather, the intent of the NESCS regulations are to use subdivision, change in landuse, and / or development activities as a trigger for investigation and identification of actually and potentially contaminated land. Without such a trigger in place, contamination is otherwise unlikely to be directly assessed. Where soil contamination is identified, this enable requirements to be imposed (through conditions) to ensure that any risks to human health and / or the environment are appropriately remediated, managed or contained.

7. DETAILED SITE INVESTIGATION - RESULTS

- 7.1 A detailed site investigation was undertaken in 2018 with a final report compiled on 17 January 2019.
- 7.2 The desktop review revealed:
- (a) The majority of the site has a long history of agricultural use with the earliest 1948 aerial image confirming pastoral land cover followed by market garden activities through until the 1980's;

- (b) In the late 1980's the south western portion of 38 Willowbank was planted under orchard cover which remained until the mid 2000's when it was removed;
 - (c) From 2009 onwards, pastoral landuse with rotating market garden crops was observed.
- 7.3 Actual and potential contamination issues were noted to be primarily associated with primary productive landuse and associated potential bulk storage and use (application) of persistent pesticides. Secondary potential causes of contamination were identified within animal pens and within an area of burnt miscellaneous refuse.
- 7.4 All potentially contaminating landuses were considered to have the highest potential impact on the superficial topsoil layer and beyond hotspots surrounding the storage locations identified within the site walkover, would be considered to be uniform in nature.
- 7.5 Based on the above assessment, 12 composite soil samples were collected from areas of the site identified as likely to be subject to uniform distribution of contaminants. Composite soil samples were comprised of 10 sub samples and were targeted to areas of the site that had been under different crop patterns and divided into approximate 1 ha blocks. Seven discrete soil samples were collected from areas surrounding historic structures that represented potential hotspots of contamination.
- 7.6 Analysis of soil samples revealed:
- (a) All analytical results complied with the Soil Contaminant Standard for residential landuse as set under the NESCS and the applicable standard for the proposed development;
 - (b) Results from all 12 composite soil samples were generally within the expected naturally occurring background ranges of soil for the site with the exception of composite soil sample 3 which was marginally elevated (10.8 mg/kg as opposed to the expected upper background limit of 9.0);
 - (c) Low level elevations of heavy metals (arsenic, cadmium, copper, lead, nickel and / or zinc) were recorded in six of the seven discrete soil samples collected, but not at a level that was considered to present any risk to human health or the environment.;
 - (d) Trace detections of the persistent pesticide DDT was recorded in one discrete sample while trace levels of Polycyclic aromatic Hydrocarbons were recorded in one other discrete soil sample; and

- (e) A blind field duplicate sample collected in accordance with the MfE CLMG revealed percentage variations within the range considered to represent a suitable repeatability standard confirming that the data set is consistent and the soil samples representative of the site conditions.

7.7 Based on the findings of the intrusive investigation, it was concluded that although soil on site showed detectable impacts from historic landuses, concentrations of priority contaminants were not recorded at a level considered to present any risk to human health under the current or proposed landuse.

7.8 The development was considered to trigger the requirements of the NESCS and would be considered a controlled activity under Regulation 9 subject to appropriate controls for the duration of soil disturbance activities. I note that appropriate controls would be focussed on suppression of dust, mitigation of erosion and sediment, and provision for accidental discovery of unexpected contamination consistent with general best practice for earthworks activities.

7.9 I do not consider anything identified within the detailed site investigation raises any fundamental concern regarding actual or potential contamination issues that would prevent the piece of land from being suitable for development. That is, while HAIL activities were identified, these are typical of historic primary production activities and have been shown to not have caused material impacts above the applicable Soil Contaminant Standard for residential landuse.

8. **ISSUES RAISED BY OFFICER'S REPORT**

8.1 I have read the Council Officer's report and note that the assessments made adopt the conclusions reached within the Detailed Site Investigation, being:

- (a) There are minimal exceedances of the background levels applicable to the Hawke's Bay;
- (b) The applicable standard as detailed in Regulation 7 of the NESCS is not exceeded; and
- (c) There are no specific soil management requirements necessary to mitigate effects regarding soil contamination.

9. **ISSUES RAISED IN SUBMISSIONS**

9.1 No submissions received raise any material concerns regarding soil contamination matters.

10. **CONDITIONS**

- 10.1 Based on my findings above, I do not consider that any specific conditions addressing site contamination are required.
- 10.2 I consider that it will be sufficient for the purposes of managing any potential risk arising from earthworks activities to impose standard conditions consistent with best practice for earthworks activities, relating to:
- (a) suppression of dust;
 - (b) erosion and sediment controls; and
 - (c) accidental discovery of unexpected contamination.

11. **CONCLUSIONS**

- 11.1 Investigations of the site have not identified any significant contamination constraints that would impact on the proposed development. Rather, low level impacts typical of historical primary production activities have been identified on account of the piece of land's long standing historical and current primary production landuses.
- 11.2 Development of the site triggers the requirements of the NESCS. It is my opinion that control measures consistent with industry best practice for earthmoving activities (dust suppression, erosion and sediment control, and contingency steps for unexpected discovery) are sufficient to control any minor risks associated with the proposed subdivision, change in landuse and development.

Carl O'Brien
Geosciences Ltd

14 May 2021

Annexure 1 – Summary of Significant Recent Projects

Ambury Properties Ltd – Sleepyhead Masterplan, Ohinewai: Preliminary and Detailed Site Investigations of 177 ha of land located at Ohinewai for a mixed use commercial / industrial and medium to high density residential and recreational mixed use development. Works included supervision of GSL environmental scientists undertaking investigations and presentation of evidence with respect of Ambury Properties Ltd submission on the Proposed Waikato District Plan.

Millennium Group Ltd – Sandy Lane Residential Development: Contaminated Land Advisor for the implementation of a revised Remediation Action Plan to address former landfill activities. Works included on call services for environmental advice, accidental discovery of a significant volume of refuse during earthworks, liaison with WorkSafe NZ and Licensed Asbestos Removalists and undertaking a staged validation approach over the site to minimize disruptions during earthworks. Following completion of works, the project required production of expert evidence and technical witness caucusing for High Court claims of loss by the Client against the previous consultancies;

NZ Storage Holdings Ltd - Otahuhu Power Station Redevelopment (ongoing): Resource consent works to obtain relevant permissions for staged investigation and redevelopment of the former Otahuhu A and Otahuhu B power stations and associated infrastructure (switchyards, transformer bays, DG Stores etc). Detailed investigation of underlying soil quality across the parcel is ongoing.

ERGO Consulting Ltd – Substation Upgrades (ongoing): Preliminary and detailed investigation of existing substations throughout Northland, Auckland and Northern Waikato for the purpose of undertaking upgrade works.

Gibbons & Co / Clem Consult – Residential Redevelopment Programme (ongoing): Detailed site investigations for residential intensification of properties within Auckland including staged assessment of soil quality for rationalising disposal works.

Southern Gateway Consortium Limited – Puhinui Road, Prices Road and State Highway 20 Master Plan (ongoing): Engaged by the consortium to undertake staged contamination investigations (PSI and DSI's) across an initial 27.6 ha footprint for the expansion of road network linkages and bridges with supplementary detailed investigation of green fields properties in Wiri. Future provision for assessment of the remaining ~150 ha of masterplan footprint was set out in the site management plan prepared.

St Pierre's Sushi Ltd – Restaurant Developments: Detailed site investigations for development of new drive through St Pierre's Sushi restaurants in Auckland and Hastings including development of remediation action plans to address asbestos and hydrocarbon contamination in soil.

The Mill Industrial Park Ltd – The Mill Industrial Park Subdivision and Development (ongoing): Initially commenced engagement to facilitate Environment Court mediation following Auckland Council abatement notices with respect to actual and potential contamination. Following mediation, contaminated land investigations commenced and works expanded into development of remedial action plans and site management plans for the containment of impacted soil within an engineered structure on site. Works also expanded to include detailed site investigation of areas of the Industrial Park to provide recommendations and controls for completing boundary adjustment subdivisions across the site alongside Contaminated Land Advisor role during earthworks;

Kāinga Ora Housing Corporation – Social Housing Stock Re-Development Programme: Preparation of PSI, DSI and feasibility assessments for the redevelopment of significant swathes of KOHC (formerly Housing New Zealand Corporation) properties in Whangarei, Auckland, Rotorua, Gisborne, Napier, Hastings, Taupo, Palmerston North, and Wellington. Works have included site management plans and remediation strategies to address a range of HAIL activities encompassed within the KOHC stock as well as technical caucusing to develop an internal KOHC policy on site assessment.

Northland Waste Ltd – Transfer Station Redevelopment: Preliminary and detailed site investigations of current waste transfer stations for redevelopment including preparation of Environmental Management Plans, design of stormwater and trade waste discharge monitoring regimes.

Ridge Road Quarry Ltd – Managed Fill & Quarry Expansion: Preparation of an Assessment of Environmental Effects of Leachate Discharge from the application to expand the Ridge Road Quarry Managed Fill to encompass up to 10 million cubic metres of fill over a life of quarry application. The scope of works included provisions for monitoring discharges from sediment retention ponds, management mechanisms for deposition of asbestos containing materials and generation of a site specific set of waste acceptance criteria.

Pro Floors Ltd – Clean & Managed Fill AEE’s and CLA Advice: Preparation of assessments of environmental effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

Dirtworks Ltd – Preparation of Managed Fill AEE’s and CLA advice: Preparation of assessments of environmental (discharge) effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of waste acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

P & I Pascoe Ltd – Clean & Managed Fill AEE’s and CLA Advice: Preparation of assessments of environmental effects for numerous managed fill locations across the Auckland Region including site specific risk assessments and development of waste acceptance criteria. In addition, ongoing contaminated land advice has been provided for accidental discovery of contamination, compliance with resource consent conditions and preparation of site closure reports at completion of filling activities.

Hauraki District Council – Contaminated Land Report Peer Review: Peer review of reports pertaining to investigation, remediation and management of contaminated sites within the Hauraki District with respect to the requirements of the *National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health*.