

19 May 2023

Auckland Shooting Club
C/- Terra Group
79 Grafton Road
Auckland 1010

Attn: Corné Roelofse

PSI Addendum - 287 Tuhirangi Road, Makarau, Auckland
(Our Reference: 13704.001.001_02)

1 Introduction

ENGEO Ltd was requested by Auckland Shooting Club to prepare an addendum to the existing Preliminary Site Investigation (PSI) report¹ to support the proposed redevelopment of the property at 287 Tuhirangi Road, Makarau, Auckland. This work has been carried out in accordance with our proposal, dated 4 May 2023 (reference 13704.001.001_01), and verbal authorisation to proceed.

We understand that a consent will be sought for additional development works, including stormwater drainage upgrades and establishment of a new shooting bay.

As discussed further in Section 3, the 2017 PSI concluded that no contaminated land related consents were required for construction of the shooting range under the Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (the "NESCS") or the Auckland Unitary Plan. Therefore, the purpose of this document is to describe recent and upcoming construction activities and how the previous report findings relate to these activities.

2 Development Activities

As discussed previously, since issue of the PSI report in 2017 an accessway, two parking areas, and five shooting bays have been constructed on-site. A site layout plan prepared by Terra Consultants (drawing number RC-103; dated 1 March 2023) indicates that future works include construction of a new shooting bay to replace one of the existing bays and drainage works. Construction works described above were commenced and completed in 2017; construction of Bay 5 was stopped part way through completion due to Auckland Council issuing an abatement notice.

¹ ENGEO Ltd. Preliminary Environmental Site Investigation - 287 Tuhirangi Road, Makarau (report reference 13704.000.000_04 dated 18 July 2017)

3 Assessment

3.1 Previous Investigation and Reporting

The purpose of the 2017 PSI¹ was to support the proposed construction of a shooting range. A Detailed Site Investigation was not performed; however, limited soil, surface water and sediment samples were collected to assess baseline concentrations of metals at the site. An elevated detection of nickel was identified in site soil; however, based on the site history (i.e. no identified source of nickel in soil) and the absence of elevated nickel in the balance of soil samples, this result was considered anomalous. The PSI concluded that no contaminated land related consents were considered to be required under regional (Auckland Unitary Plan) or national (NESCS) regulations for construction of the shooting range.

As part of the PSI, the organic content and pH were also tested as these parameters can be used to assess the leaching potential of metals in soil. Based on the findings of the leaching assessment, the risk of future lead contamination in soil (from shooting range activities) leaching from the site was considered to be relatively low risk. However, there was considered to be potential for localised highly elevated concentrations of lead to contribute more significant concentrations to underlying groundwater. Therefore, shooting range best management practices (BMPs) were recommended to be implemented and their performance monitored. ENGEO prepared an Adaptive Environmental Management Plan² in 2017 to address potential environmental issues associated with operation of the shooting range.

3.2 Relevance to Additional Development Work

As previously discussed, the recent and proposed development activities include construction of a new shooting bay to replace one of the existing bays and drainage works. These are considered to be of a similar nature to that which was understood at the time of preparing the PSI, and ENGEO has not been made aware of any contamination encountered during recent redevelopment activities.

The NESCS now applies to the 'piece of land' associated with the existing shooting bays, as shooting ranges are included as item C2 of the Ministry for the Environment's (MfE's) Hazardous Activities and Industries List (HAIL)³. However, the portion of the proposed earthworks area that will intersect the piece of land (existing Bay 5) is approximately 54 m²; the NESCS allows 2.7 m³ of soil to be disturbed as a permitted activity, and 0.54 m³ of soil to be removed for disposal per year. As the earthworks plan indicates that this is an area of filling, proposed works are anticipated to meet the permitted activity limits specified in Regulation 8(3) of the NESCS.

Therefore, we consider that the findings and recommendations of the 2017 are still appropriate. At the client's request, we have amended the Adaptive Environmental Management Plan² to reflect the completed and proposed development works.

² ENGEO Ltd. Adaptive Environmental Management Plan - 287 Tuhirangi Road, Makarau (report reference 13704.000.000_05 dated 18 July 2017)

³ MfE (2011a). Hazardous Activities and Industries List (HAIL), Ministry for the Environment, October 2011

4 Limitations

- i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Auckland Shooting Club, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.
- ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.
- iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.
- iv. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.
- v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (09) 972 2205 if you require any further information.

Report prepared by



Claire Davies, CEnvP

Associate Environmental Consultant

Report reviewed by



Erika McDonald, CMEngNZ

Principal Environmental Engineer