

GEOTECHNICAL SOIL TEST REPORT

Client: Mr Vogel
Project: Erf 3132 Sea Vista, St Francis Bay
Date of test: 8.9.2023

Geotechnical Constraint	Risk			NHBC Classification
	Low	Medium	High	
Active clay	X			
Compressible soil		X		S1
Collapsible soil	X			
Uncontrolled fill				
Chemically aggressive soils	X			
Saturated soils/ groundwater seepage	X			
Shallow hard rock/ difficult excavations	X			
Slope stability problems	X			
Flood potential	X			
Seismicity	X			
Dolomitic land	X			

Disclaimer: The above classification is provided as a guideline and is true for the specific locations that were tested and may not be true for the entire site.

Site description:

Access to the site was easily gained via the road on the western boundary of the site. The property consisted of an existing masonry building occupying the western portion and extensive lawn and garden area and some thick bush towards the eastern boundary, where a proposed deck with storage below is planned (see Fig 1-2). In addition to this, a new boundary wall is proposed along the eastern side of the property. The proposed development area is within 100m of the highwater mark, and thus subject to environmental assessment. The terrain in the proposed development area is gently sloping to the east, becoming moderate to steep near the eastern boundary. The ground surface conditions on the site were generally dry and stable with no signs of any drainage issues, marshy ground conditions or slope stability problems.



Figure 1: View of the property looking west from the proposed deck site

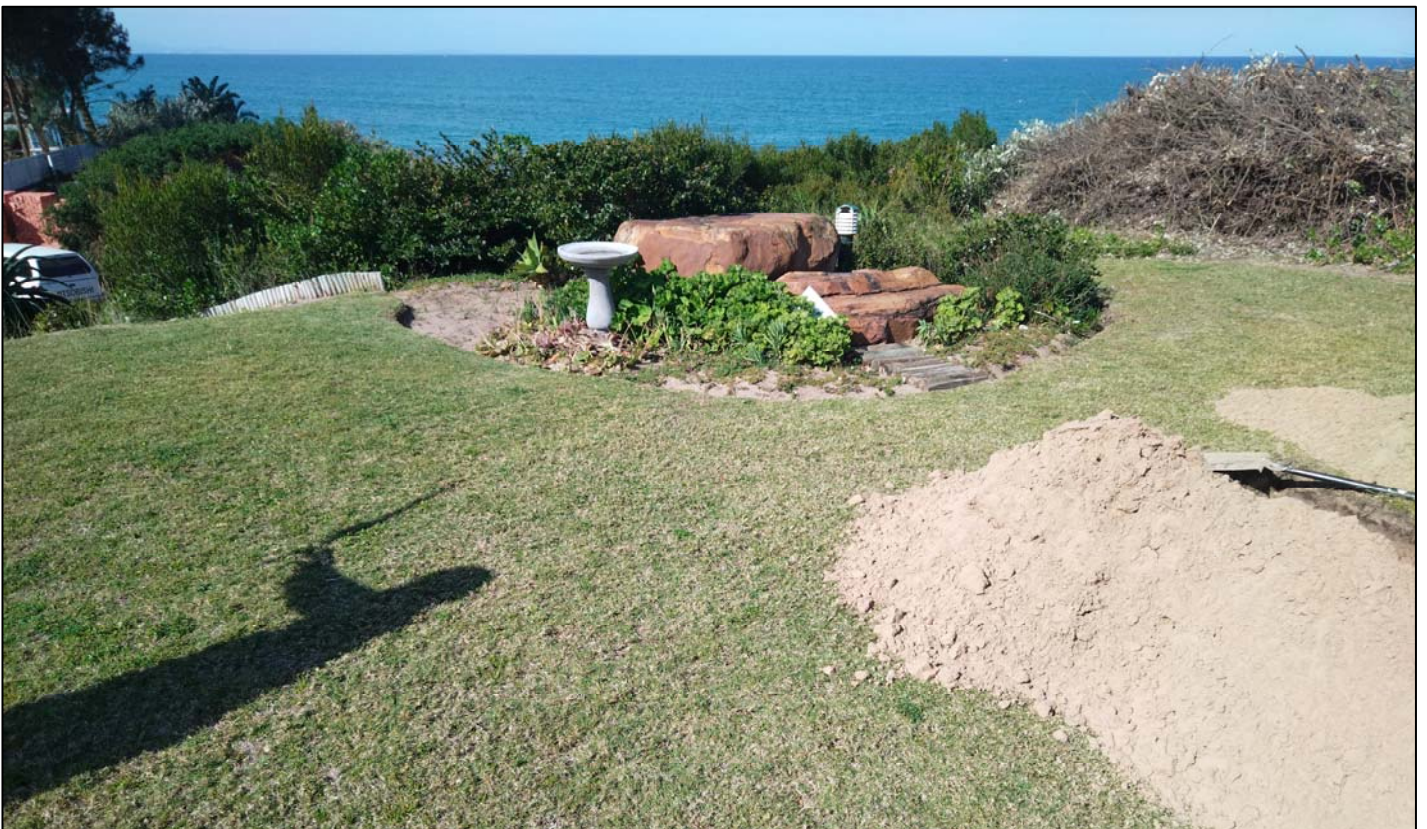


Figure 1: Site for the proposed deck structure, looking east

Methods of investigation:

A single test pit was excavated by hand to max depth of GL-1.5m at position TP1, as indicated on the attached plan, and a sample was taken of the in situ soil for Indicator tests. A DCP test was conducted next to the test pit from natural ground level to a depth of ~2m to assess soil consistency. Three additional DCP tests (TP2-4) were conducted around the general site area.

Results:

The natural geology of the area consisted of thick deposits of aeolian (wind-blown) sand of Quaternary age overlying shale rock of the Ceres Group.

The test pit on the site confirmed the geology and indicated that the soil profile was dominated by silty fine sand of aeolian origin. No clay was encountered or was expected on this site. No bedrock was encountered in the test pit and was not expected for several meters below ground level. No groundwater seepage was encountered in the test hole at the time of the investigation and the site was well drained with good soil permeability.

DCP tests indicated the following:

- 0-500mm: Loose, $\phi' \sim 28^\circ$
- 500-1500mm: Medium dense, $\phi' \sim 32^\circ$
- 1500-2000mm: Loose, $\phi' \sim 30^\circ$

The tests indicated that normal in-trench compaction would be required to safely accommodate light structural loads only with $BP < 120\text{kPa}$.

Recommendations:

Earthworks: Some minor earthworks and bush clearing was anticipated to clear vegetation and form level platforms for the proposed structures. Earthworks could be accomplished with light machinery (TLB) or by hand, and all excavations to a depth of at least 2m were classified as per SABS1200D as "soft". The insitu sandy soils were suitable for general backfilling and compaction on platforms, under floors and foundations at the optimum moisture content. Any organic matter (roots, grass, etc) exposed in excavations should be entirely removed. Excavation sidewalls will be highly unstable at angles steeper than 35° , and adequate battering of excavations was recommended for safety reasons. Lateral support systems may be required for excavations adjacent to the boundary.

Foundations and floors: Single or double storey masonry or timber structures can be founded on conventional lightly reinforced concrete strips and/or pads at a minimum recommended founding depth of 0.7m below GL on well compacted insitu soil (recommend $< 25\text{mm/blow}$). Soil may require good watering to achieve the recommended compaction. Bearing pressures should be limited to max 120kPa to minimise settlement. Alternative foundation solutions, such as raft foundations can also be considered, depending on the structural design. Filling under surface bed concrete floors should be compacted at the optimum moisture content to 100% of Mod AASHTO density.

No structures should be placed on, or within a distance of 2m of, slopes exceeding 1v:4h, unless special precautionary measures are taken by the engineer.

Drainage: The soil was highly permeable and site drainage was not envisaged to be a problem. No subsoil drains are deemed necessary, except behind retaining walls as standard.

Conclusions:

The site was considered suitable for the proposed development with conventional construction methods but there were some minor geotechnical constraints, mainly compressible sands, which required consideration by the structural engineer. Preliminary recommendations were provided but all information should be verified on site during construction.



Iain Paton Pr Sci Nat Pr Tech Eng



Legend

- Site Boundary
- Test positions

Project: New Structure/Boundary Wall
 Site: Erf 3132 Sea Vista
 Area: St Francis Bay

Dwg Name: Geotech tests
 Date: September 2023
 Rev no: 1
 Drawn: SG

Client: Mr Vogel
 Structural/Civil Eng:
 EAP: EcoRoute Environmental



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Scale 1:500



OUTENIQUA GEOTECHNICAL SERVICES

Geotechnical Soil Profile

Client:	Mr Vogel
Project:	Erf 3132 Sea Vista
Area:	St Francis Bay
Date:	18.09.2023
Excavator:	By Hand

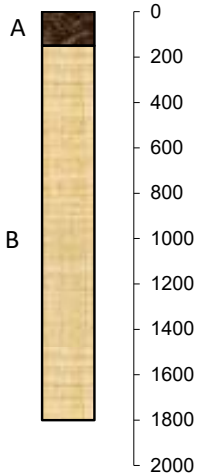
TP 1

Datum: NGL Co-ords: 25 Y0015419 X3782584

Key to symbols: ● Sample taken ▼ Groundwater

Dynamic Cone Penetrometer (DCP)

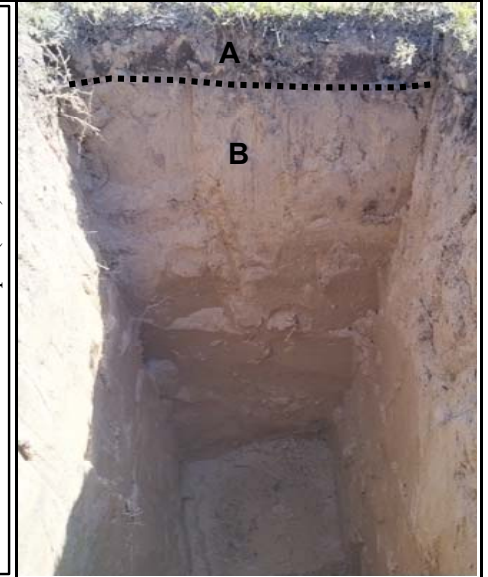
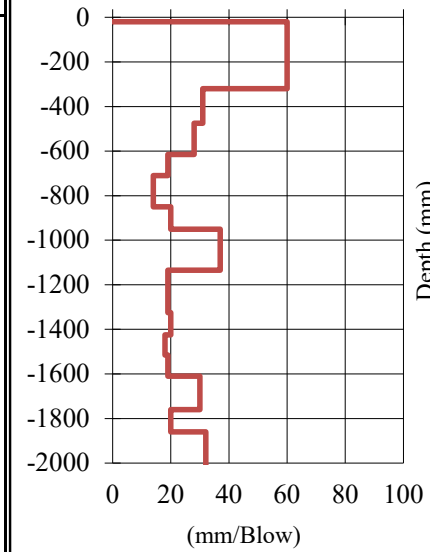
Photo of Test Pit



(0 to 150) Slightly moist, dark brown, loose, intact, **SILTY SAND with rootlets**, imported (fill, landscaped topsoil)

(150 to 1800) Moist, light yellow, medium dense, intact, **SILTY FINE SAND**, aeolian deposit.

TP Stopped
No Water





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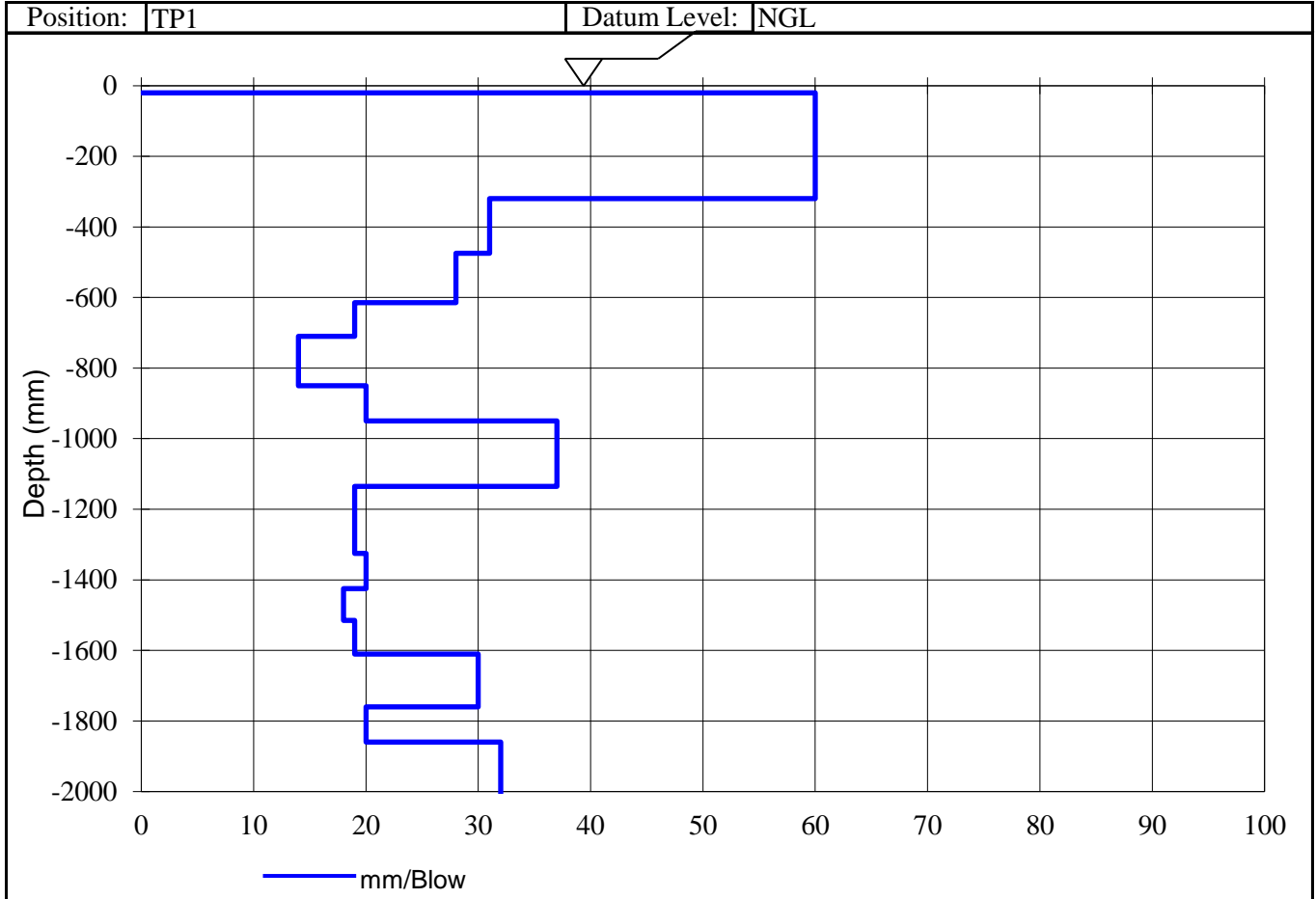
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Tel: 044 3820502 : Fax: 044 3820503 : e-mail: iain@outeniqualab.co.za

Customer :	Ecoroute Environmental	Project :	Erf 3132 House Vogel Sea Vista St Francis Bay
	14 Main Service Road	Date Received :	13.09.2023
	Sedgefield	Date Reported :	18.09.2023
	6573	Req. Number :	
Attention :	Samantha Teeluckdhari	No. of Pages :	1 of 4

TEST REPORT

Dynamic Cone Penetrometer (DCP) - (TMH 6 Method ST6)



I Paton (Member)
 For Outeniqua Geotech. Services cc.
 Technical Signatory

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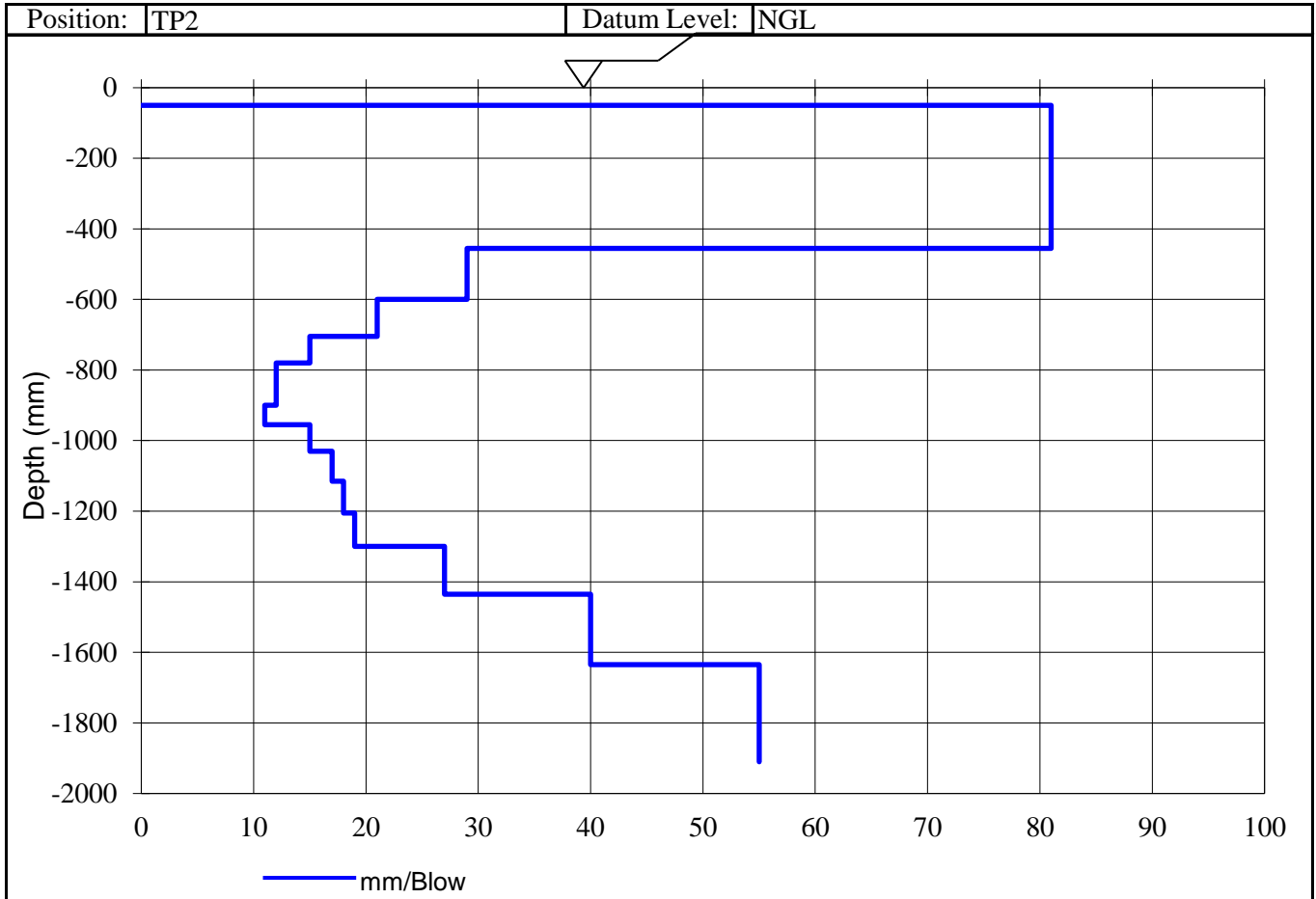
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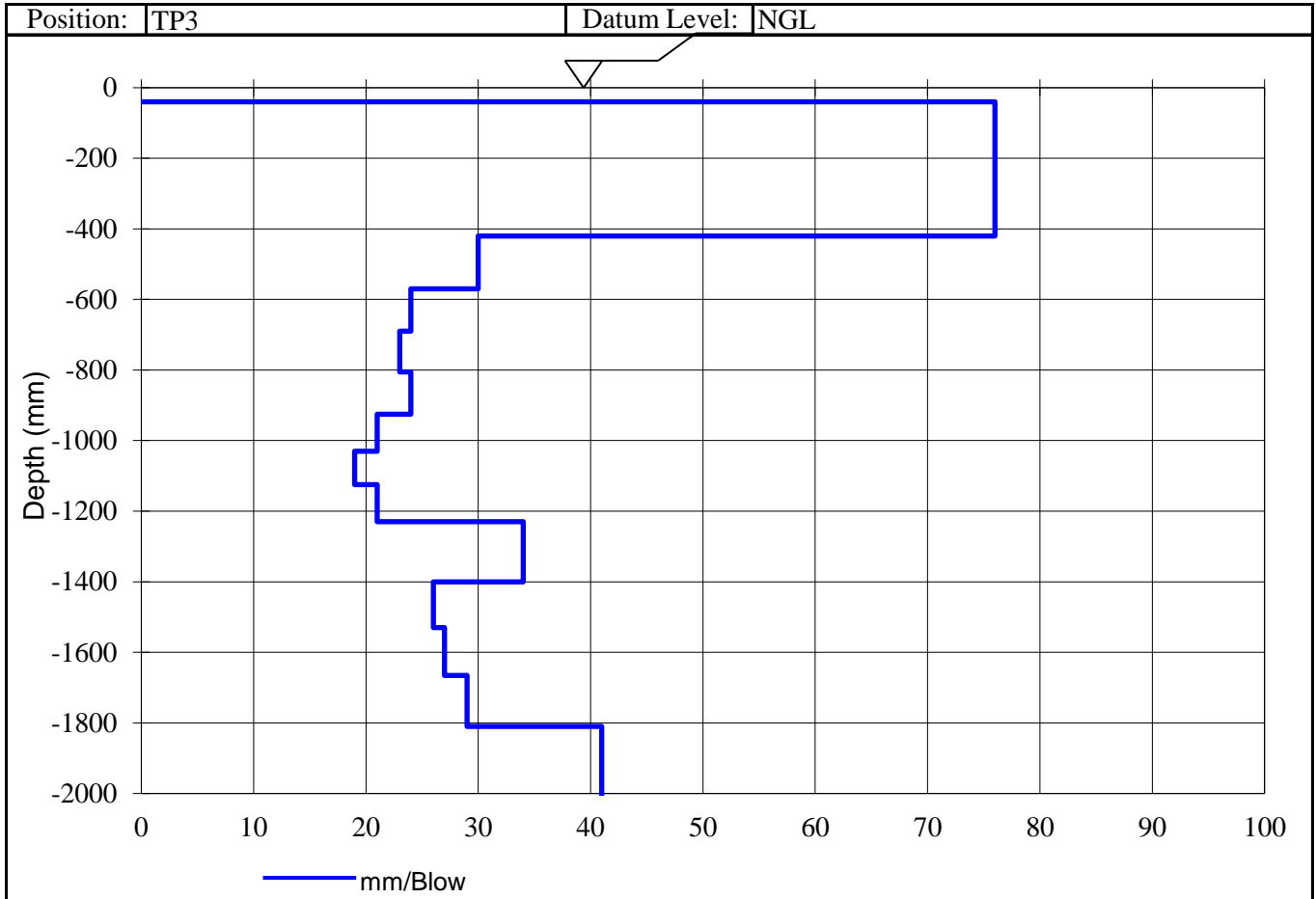
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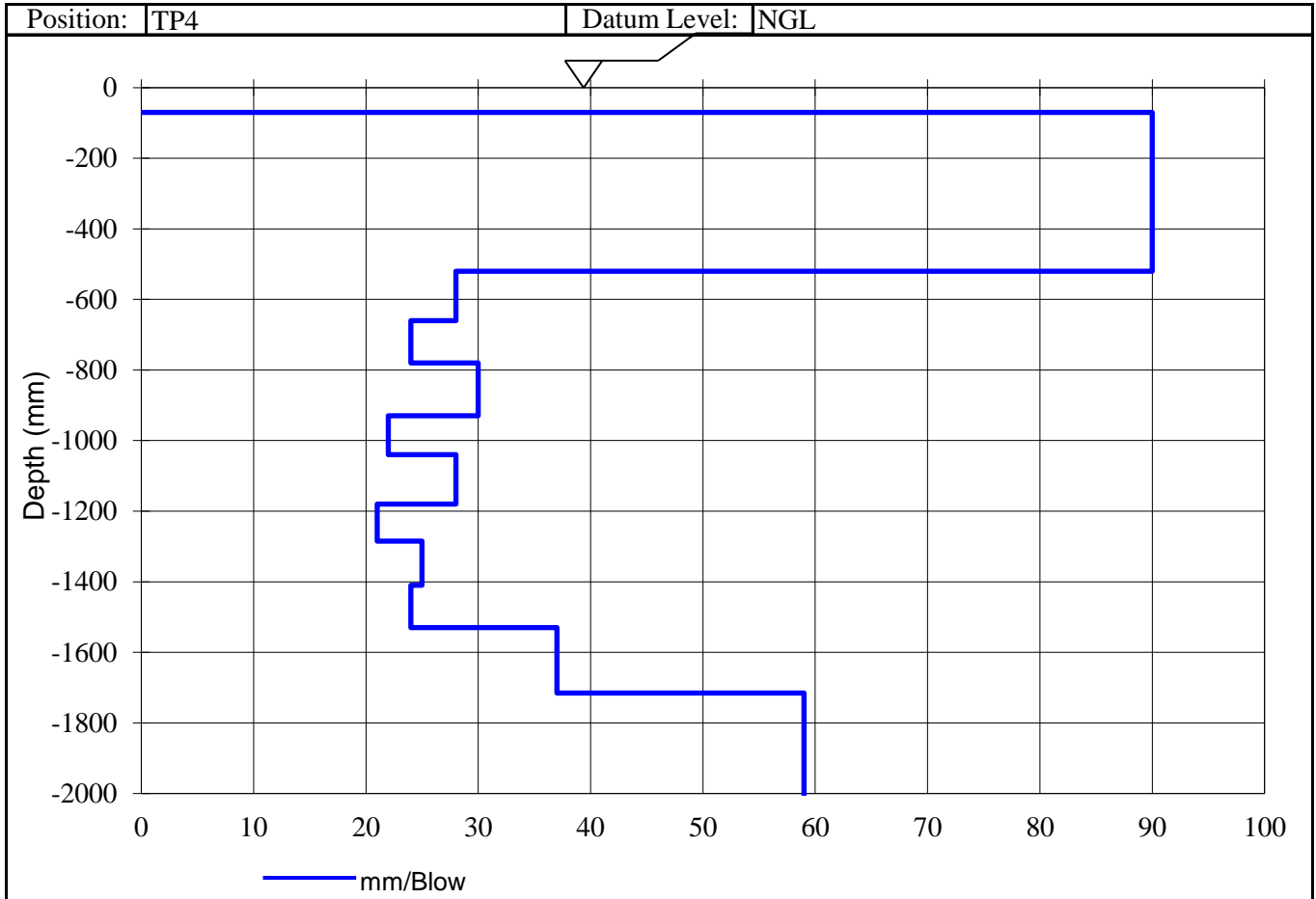
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DETAILS OF SPECIALIST AND DECLARATION OF INTEREST IN TERMS OF REGULATIONS 12 AND 13 OF THE AMENDMENTS TO THE ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014 AS AMENDED.

(For official use only)

File Reference Number:

NEAS Reference Number:

Date Received:

Application for environmental authorization in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Amendments to the Environmental Impact Assessment Regulations, 2014. This form is valid as of 6 January 2021.

PROJECT TITLE

Erf 3132, St Francis Bay, Eastern Cape – The Proposed Construction of a Boundary Wall and Storage Area with Viewing Deck.

SPECIALIST ¹

OUTENIQUA GEOTECHNICAL SERVICES

Contact person:

I. PATON

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Professional affiliation(s) (if any)

PrSciNat PrTechEng

Project Consultant:	Eco Route Environmental Consultancy		
Contact person:	Samantha Teeluckdhari		
Postal address:	P.O. Box 1252, Sedgefield, Western Cape		
Postal code:	6573	Cell:	0727735397
Telephone:		Fax:	086 402 9562
E-mail:	samantha@ecoroute.co.za		

4.2 The SPECIALIST

I, **I. Paton**, declare that –

General declaration:

- I act as the independent Specialist in this application
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, regulations and all other applicable legislation;
- I will take into account, to the extent possible, the matters listed in regulation 8 of the regulations when preparing the application and any report relating to the application;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
- I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- I will keep a register of all interested and affected parties that participated in a public participation process; and
- I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not

- all the particulars furnished by me in this form are true and correct;
- will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
- I realise that a false declaration is an offence and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

- I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Amendments to Environmental Impact Assessment Regulations, 2014 as amended.
- I have a vested interest in the proposed activity proceeding, such vested interest being:

Signature of the specialist:

OUTENIQUA GEOTEHCNICAL SERVICES

Name of company:

10.3.2024

Date:

Signature of the Commissioner of Oaths:

2024.03.10.

Date:

Designation: *Kyama SAPS.*

¹ Curriculum Vitae (CV) attached

Official stamp (below).



Annexure 1

CV