
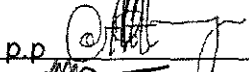

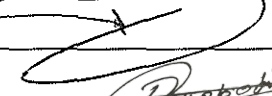



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PLANT AREA: MATLA POWER STATION ASH DAMS			
TITLE: Additional Geotechnical Investigations at Matla Ash Dam			
REF: MEA-06590	Reference Rev No. 0	MULTIDISCIPLINARY: No	Plant Level: 3
CHECKED BY	Name: Jack Moyaha Civil Engineer	Signature 	Date 29/10/2021
APPROVED	Name: Thando Mbulawa Line Manager	Signature 	Date 29/10/2021
APPROVED	Name: Lindokuhle Ngobese Group Manager	Signature 	Date 22/11/2021
REVIEWED	Name: Dorah Mkhonto Quality Department	Signature 	Date 26/11/2021
REVIEWED	Name: Refilwe Mokobodi Environmental Department	Signature 	Date 30/11/2021
ACCEPTED	Name: Outside Plant Manager	Signature	Date
ACCEPTED	Name: AIA	Signature	Date

**NB: Do not tamper with the template.**

**GENERAL**

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- Data books, reviews, reports and diagrams/drawings shall be submitted to Engineering after the completion of the work Engineering to forward the data books to Quality Department (Document Control)
- All QCP's to be submitted to Engineering and Quality for approval prior to outage/project or maintenance work commencement

	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
1.1	Safety	<ul style="list-style-type: none"> <li>• All work is to be done in accordance with Matla plant procedures and safety regulations (GGR 0992)</li> <li>• Matla power station induction must be done before any work commences</li> <li>• Permit to work must be in place before any work commences</li> <li>• Worker's register must be completed and daily risk assessment conducted before any work commences</li> </ul>	Eskom to witness	Contractor
1.2	Environmental Management	<ul style="list-style-type: none"> <li>• All activities listed in the National Environmental Act 107 of 1998, EIA Regulation 982,983,984 &amp; 985(2014), must have <b>AUTHORISATION</b> before commencement of work</li> <li>• The contractor shall comply with all applicable legal and other requirements</li> <li>• The polluter pays principle will be applied</li> <li>• The contractor manager shall ensure compliance with Eskom Matla Environmental procedures to ensure the prevention of pollution (OMOP 4090 and 4402)</li> <li>• The last payment will be processed based on the status of the last housekeeping check sheet (Annexure G OMOP 4402) of designated area</li> <li>• EMS file based on ISO14001 will be required</li> </ul>	Eskom to witness	Contractor

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1.3	Quality Management	<ul style="list-style-type: none"><li>The contractor/executioner of work will be responsible for drawing up all QCP documentation and this must be approved by engineering and authorised by the Quality Department before commencing with the work</li><li>Contractors/executioner to adhere to QM 58 and OMOP4497 requirements</li><li>Number of NCR issued can affect your next tendering process</li><li>The QCP shall be signed progressively by the Engineer/Supervisor, Eskom QC Inspector, Contractor QC Inspector and/or AIA</li><li>No procuring of outage items without the approval of scopes by quality</li><li>All outage scopes creep and scopes addition should be approved by quality</li><li>No contractor should be in the possession of scopes for execution without the scopes approved by quality</li><li>The contractor is subjected to quality auditing at any point in time during execution of scope</li></ul>	Hold point	Contractor
1.4	Inputs from other departments			
1.5	Commissioning reference			

SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIBLE PARTY
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#### DETAILED SCOPE

2	SCOPE OF WORK DESCRIPTION / ACTIVITY	PROCEDURE, SPECIFICATION, ENG. REQUIREMENTS / DOCUMENTATION	HOLD POINTS, WITNESS, REPORTS	RESPONSIB LE PARTY
<p>This scope gives additional requirement and specification on the geotechnical studies that are required at Matla Ash Dam (See Figure 1 below) in regards and support of Kriel to Matla Ash Transfer Project Scope for Basic and Detailed Design (EAP0615-1) This will confirm parameters such as friction angle, cohesion and unit weight as well as determining new variables such as the position of the critical state line.</p>				
2.0	<p><b>The service provider/contractor needs to perform the following geotechnical studies at Matla Power station Ash Dams:</b></p> <ul style="list-style-type: none"> <li>Seismic Cone Penetration Tests with pore pressure measurements (SCPTu) must be conducted on each piezometer line in accordance with latest ASTM standard A minimum of 3 tests is to be conducted at each of the 14 piezometer lines with probably 5m into foundation and until refusal is met The SCPTu test must intercept and define the foundation</li> </ul>			
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	<p>material underlying the Ash Dam. A dissipation test must be performed at adequate intervals, with adequate dissipation time to define the pore pressure regime. Seismic data (Shear wave velocities) must be obtained at each rod change/every metre. The contractor will only charge for metres probed and dissipation time used. The contractor is expected to define this interval and quality assure the SCPTu data</p> <ul style="list-style-type: none"> <li>• The SCPTu tests must include Mostap sampling of the layers of interest defined by the contractor during the probing</li> <li>• The SCPTu test equipment should make use of drilling through layers which may cause refusal with the drilling equipment described below</li> <li>• Rotary core drilling and/or Shelby tube sampling on each piezometer line (14). Rotary core drilling/ sampling with Shelby tubes at</li> </ul>			
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	<p>contractor derived intervals to get the soil properties of the in-situ ash and foundation material. Soil sampling should target layers with different properties and must include non-cohesive granular ash, pozzolanic/hardened ash layers as well as the underlying foundation material. The sampling will be done in the line of SCPTu probes as indicated in Figure 2</p> <ul style="list-style-type: none"> <li>• The core drilling needs to extend from the surface into the foundation material on at least one hole (the highest) per piezometer line. The average depth will be 30m and three boreholes per SCPTu line can be allowed for. Only metres drilled may be charged for.</li> <li>• The Shelby tube samples, rotary core samples and the Mostap samples must be analysed at a SANAS accredited laboratory for particle size distortion (PSD), Atterberg limits, moisture,</li> </ul>			
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	density and strength parameters The number of tests should allow for statistically reliable results			
2 1	<b>Deliverables</b>  Submit a detailed geotechnical report which interprets the SCPTu and laboratory data. The report must <ul style="list-style-type: none"> <li>• Illustrate all probe locations tested on the Ash Dam,</li> <li>• Report on the soil laboratory testing with and without interpretation</li> <li>• Define the stratigraphy of each slope with all the derived properties of each interpreted layer</li> <li>• Derive the pore pressure regime of each slope from the SCPTu data and compare/interpret the results to the standpipe piezometer data</li> </ul>			

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	<ul style="list-style-type: none"> <li>The report must include a stability analysis for each piezometer line (14) using the data gathered</li> <li>The report must include <i>recommendations</i> and all the test results both with and without interpretation</li> <li>Raw uninterpreted SCPTu and laboratory data must be made available if requested in an approved digital format, preferably Microsoft Excel.</li> </ul>			
2.2	<b>Important Note:</b>  Housekeeping is mandatory			

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SCOPE COMPILATION REFERENCES				
SOURCE & Ref No.	Yes	No	N/A	Comments
Previous outage service reports			x	
Return to service data packages			x	
Maintenance Strategy with Rev number			x	
SAP defects (attach list as appendix)			x	
GHRMS (STEP) reports (Generation Heat Rate Management System)			x	
Online Condition Monitoring			x	
Pre-outage performance test results			x	
Post outage performance test results			x	
GPSS/ Plant Performance data on UCLF incurred			x	
OMS / IIRMS recommendations (Audits Reports)			x	
Risk controls (IRM system)			x	
Previous audits and reviews (e.g. ERAP)			x	
Engineering Change Requests (Projects)			x	
LOPP strategy reports			x	
URS			x	
Philosophy (Outage)			x	
Condition Monitoring Report			x	

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VA/PHD Viewer trends			X	
Corrective Actions			X	
CARAB reports			X	
Statutory Requirements			X	
Grid code requirements			X	
Waivers and Exemptions			X	
Calibration requirements			X	
Previous Outage SOW variations			X	
Post Mortems Actions from previous outages			X	
Pre-Outage plant walks			X	
Risk based inspection (RBI) report			X	
Simulation, TOIs, OON, SI			X	

COMMENTS


Compiled by: .....

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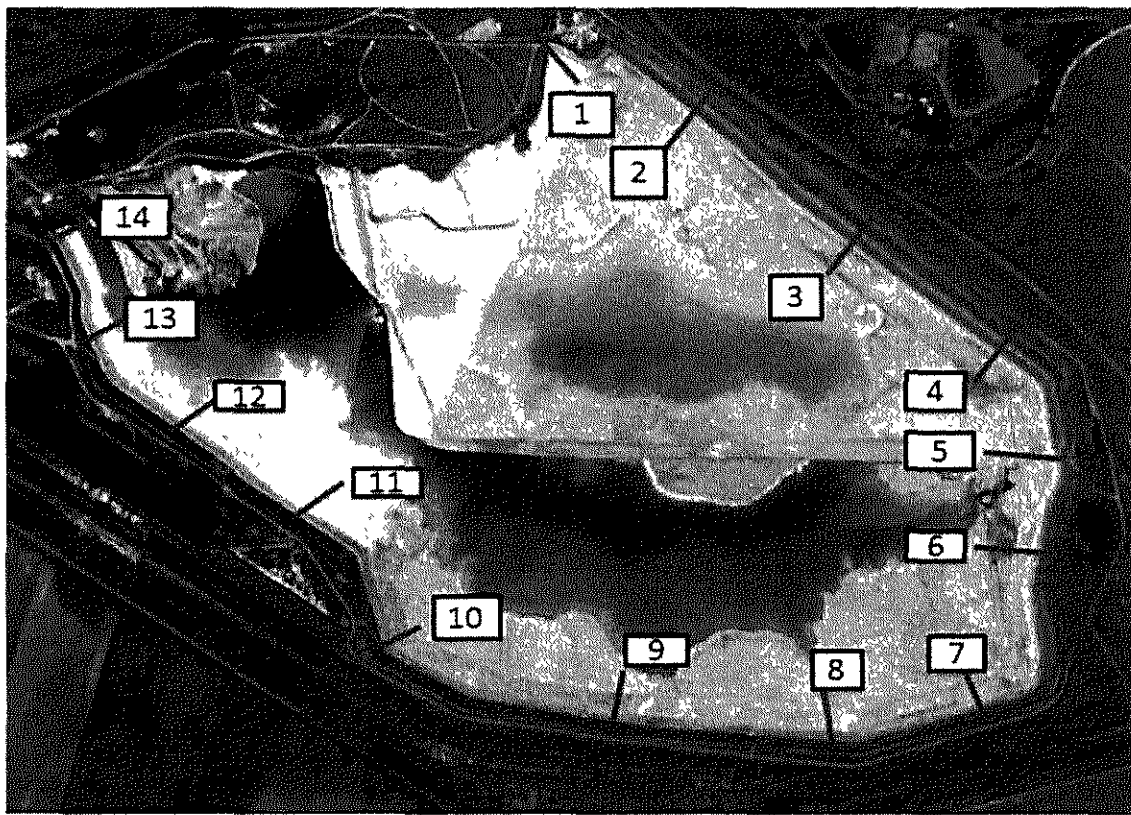


Figure 1 Matla Ash Dam field

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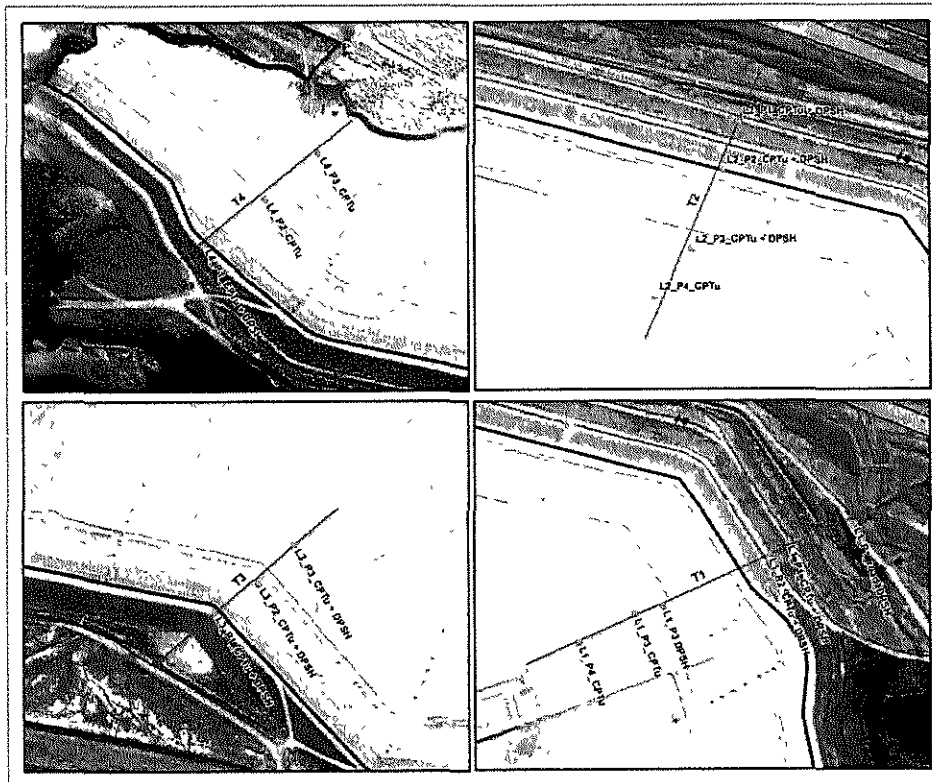


Figure 2 CPTu position

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