



# Environmental Analysis Laboratory Norsearch Ltd

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Job Number	E5545
Sample Accession No.	Samples 1 – 8
Sample Type	SOIL
No. of samples	8
Date supplied	20 <sup>th</sup> April 2006

RECEIVED  
15 MAY 2006  
BY: 405062

11<sup>th</sup> May 2006

Att/ Dr Justin Meleo  
Geolyse  
Po Box 280  
TUNCURRY NSW 2428

Dear Dr. Justin Meleo,

Herewith are the analysis results of 8 soil samples supplied on 20<sup>th</sup> April 2006.

Results were supplied by Email on the 27<sup>th</sup> April 2006.

Please contact the laboratory if you have any queries.

Yours faithfully,

Graham Lancaster,  
Laboratory Manager

Results refer to samples as received at the laboratory. This report is not to be reproduced except in full.

Analysis performed according to Rayment and Higgins, 1992. Australian Laboratory Handbook of Soil and Water Chemical Methods, except where stated otherwise.

## RESULTS OF ACID SULFATE SOIL ANALYSIS (Page 1 of 1)

8 samples supplied by Geolyse on 20th April 2006 - Lab. Job No. ESS45  
 Analysis requested by Dr. Justin Meleo - Your Project: 405062\_LEO\_012

Sample Site	EAL Lab code	Texture (note 6)	Lab. Bulk Density tonne DW/m <sup>3</sup>	TAA pH <sub>ca</sub>	Titrateable Actual Acidity (TAA) mole H <sup>+</sup> /tonne (to pH 6.5)	Reduced Inorganic Sulfur (%Scr) (note 2)	Reduced Inorganic Sulfur (Scr) mole H <sup>+</sup> /tonne	% ANC <sub>gr</sub> %CaCO <sub>3</sub>	a-ANCE mole H <sup>+</sup> /tonne	NET ACIDITY Chromium Sulfate mole H <sup>+</sup> /tonne (based on %Scr)	LIME CALCULATION Chromium Sulfate kJ CaCO <sub>3</sub> /m <sup>3</sup> (includes 1.5 safety Factor)	COMMENTS- PASS RE: Classification as POTENTIAL acid sulfate soil (PASS) (based on %Scr results)	COMMENTS-AASS RE: Classification as ACTUAL acid sulfate soil (AASS) (based on %Scr results)
Method No.				23A	23F	22B	a-22B	19A2	a-19A2	note 5	note 5	refer note 10	refer note 10
C1	ESS45/1	Coarse	1.5	9.56	0	0.067	42	1.50	300	-158	0	refer note 10	NOT Actual ASS
C2	ESS45/2	Coarse	1.4	9.59	0	0.038	24	2.80	559	-349	0	refer note 10	NOT Actual ASS
C3	ESS45/3	Coarse	1.6	9.71	0	0.025	16	1.25	250	-151	0	refer note 10	NOT Actual ASS
C5	ESS45/4	Coarse	1.6	9.44	0	0.131	82	1.30	260	-91	0	refer note 10	NOT Actual ASS
C6	ESS45/5	Coarse	1.5	9.37	0	0.162	101	1.75	350	-132	0	refer note 10	NOT Actual ASS
C7	ESS45/6	Coarse	1.4	9.72	0	0.025	16	1.50	300	-184	0	refer note 10	NOT Actual ASS
C9	ESS45/7	Coarse	1.5	9.62	0	0.082	51	1.65	330	-169	0	refer note 10	NOT Actual ASS
C10	ESS45/8	Coarse	1.3	9.22	0	0.306	191	3.00	599	-209	0	refer note 10	NOT Actual ASS

**NOTE:**

- All analysis is Dry Weight (DW) - samples dried and ground immediately upon arrival (unless supplied dried and ground)
- Samples analysed by SPOCAS method 23 (ie Suspension Peroxide Oxidation Combined Acidity & sulfate) and 'Chromium Reducible Sulfur' technique (Scr - Method 22B)
- Methods from Aiem, CR, MeElna AE, Sullivan LA (2004). *Acid Sulfate Soils Laboratory Methods Guidelines*. QLD DNRME.
- Bulk density was determined immediately on arrival to laboratory (in situ bulk density is preferred)
- ABA Equation: Net Acidity = Potential Sulfidic Acidity (ie. Scr or Sox) + Actual Acidity + Retained Acidity - measured ANC/FF
- For 'Texture: coarse = sands to loamy sands; medium = sandy loams to light clays; fine = medium to heavy clays and silty clays
- .. Denotes not requested or required
- CRS, TAA and ANC are NATA certified but other SPOCAS segments are currently not NATA certification
- Results at or below detection limits are replaced with '0' for calculation purposes.
- Projects that disturb > 1000 tonnes of soil, the >0.03% S classification guideline would apply.

Lab Accred. No.: 14960



(Classification of potential acid sulfate material if: coarse Scr ≥ 0.03%S or 19mole H<sup>+</sup>/t; medium Scr ≥ 0.06%S or 37mole H<sup>+</sup>/t; fine Scr ≥ 0.1%S or 62mole H<sup>+</sup>/t)