Surrender Report – King Island Yambacoona Project E01/2012	ILUKA
Tenement Numbers: E01/2012	
Tenement Operator: Iluka Resources Limited	
Tenement Holder: Iluka Resources Limited	
Report Type: Surrender Report	
Report Title: Surrender Report E01/20122 June 2012-1 June 2013 Yambacoona King Island Tasmania	
Reporting Period: 2 June 2012 to 1 June 2013	
Author: Rohan Hine and Paul Smith	
Date of Report: 8th May 2013	
1:250 000 map sheet: King Island	
Geodetic Datum: GDA94 Zone 54:	
Targeted commodity: Mineral Sands	
Keywords: Mineral Sands, Yambacoona, King Island, Zircon, Rutile, Exploration,	

Location:
Yambacoona is located on the northern end of King Island, which is situated in Bass Strait.

Geology:
Proterozoic–Palaeozoic granites crop out in the south of the island and as outliers immediately to the north of this area. During the Pleistocene a series of marine transgressions and regressions is interpreted to have concentrated heavy minerals in the shore-face sand facies. Quaternary carbonate dune sand occurs along the western coastal margin and partly cover the older sand. (MRT 2010)

Work done:
Year 1:
Significant time was spent liasing with land owners to gain access to tenure to undertake drilling. Land owner access agreements were signed for all properties. Drilling commenced in early December 2012 with assay results returned in early May.
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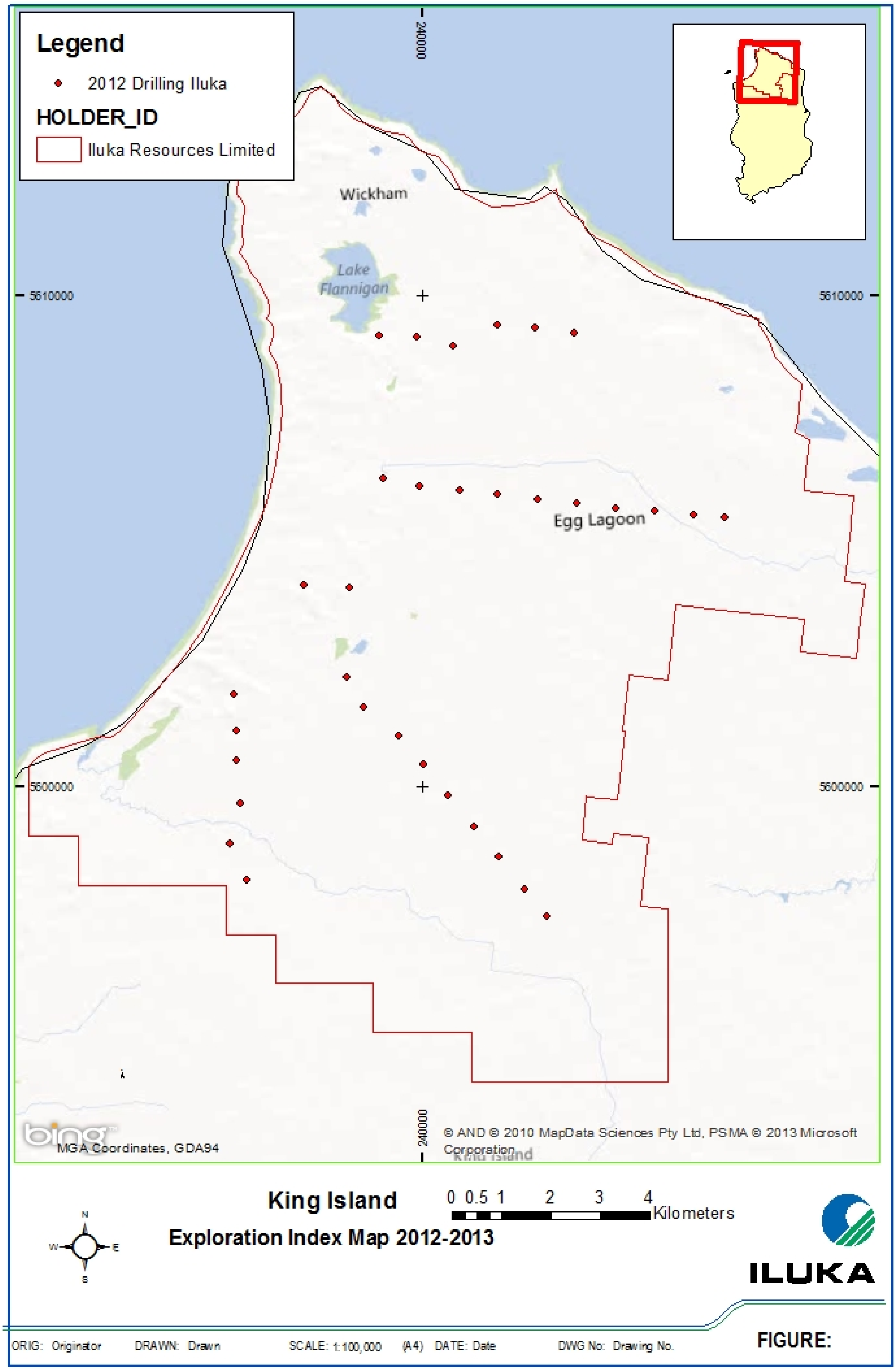
Conclusion:
The exploration work could be considered a partial success as the target was tested safely and efficiently. The conceptual model was only partially supported however the thickness, grade and mineralogy of the HM is not considered to be of economic importance to Iluka. Based upon this conclusion it is recommended that the tenement be relinquished for Heavy Mineral Exploration HM).

Proposed: Rohan Hine Principal Exploration Geologist 8th May 2013

Approved: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2012 Drilling Iluka
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Wickham
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ILUKA RESOURCES LIMITED

TECHNICAL REPORT

ILUKA-TR-

Annual Report
E01/2012

2 June 2012-1 June 2013 Yambacoona King Island Tasmania

BY

Rohan Hine
Paul Smith

Date: 8th May2013

AUTHOR KEYWORDS: Mineral Sands, Yambacoona, King Island, Zircon, Rutile, Exploration,

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Rohan Hine

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EXECUTIVE SUMMARY

As part of the global search to identify world class heavy mineral deposits Iluka geologists identified a potential opportunity on the northern end of King Island.

- The initial impetus to search on King Island was brought about by a review of an Australia wide levelled thorium image which highlighted a distinct thorium anomaly occurring near Yellow Rock on the northern end of the island
- A more intensive review of the area suggested that the thorium anomaly was located at or near the back of a Pleistocene shoreline and that it represented a possible heavy mineral (HM) accumulation. A subsequent site investigation suggested the anomaly was potentially related to HM shedding from dunal sand.
- Based upon this information a tenement E01/2012 was applied for and granted during June 2012
- After several trips were made to the island to discuss with land owners Iluka's proposed activities a drilling campaign was commenced during early December 2012
- A total of 33 aircore holes were drilled for an advance of 839.5 m with 79 samples submitted to the laboratory for heavy mineral analysis.
- The target was effectively tested unfortunately no encouragement was received to indicate that there was potential for an economic deposit.
- A brief review was undertaken to assess the potential for other mineralisation styles, this review suggested that the initial targets identified by other authors still remain untested.
- Were Iluka to explore for this type of targets it would require a dedicated approach to that particular commodity style.

It is recommended that no further exploration activity be undertaken for heavy mineral exploration.

TABLE OF ACTIVITIES

Activity	Description
Year 1	
Data review, targeting, conceptual model	Previous exploration reports and data were reviewed in preparation for a drilling program. The principal target at Yambacoona is a distinct Th anomaly located at the back of an Pleistocene interpreted sand dune. The position of the anomaly is consistent with that expected for a headland model where the mineralisation sits in the lee of the predominant high energy swell.
Reconnaissance visit	Ground truthing was undertaken assessing the proposed conceptual model as well as assessing accessibility and likely drill targets.
Land Access Negotiation	Significant time was spent discussing Ilukas proposed exploration plans with land owners and local council. As part of this land access negotiation an agreement was signed that protected the land owners interest by committing Iluka to fully rehabilitating all sites to the state in which they were found.
Drilling	33 holes for 839.5m were drilled between 03/12/2012 and 06/12/2012 with an AirCore Reverse Circulation technique. 79 samples were collected and assayed.
Sampling and geological logging	Sampling at 1.5m intervals.
Rehabilitation	Each drill hole was rehabilitated on completion, and samples were returned down the hole. Groundwater was intersected during the drilling program in all holes as little as 2m from the collar.
Assaying, heavy liquid separation	79 samples have been assayed by heavy liquid separation.

1 INTRODUCTION

1.1 Background

As part of the global search to identify world class heavy mineral deposits Iluka geologists identified a potential opportunity on the northern end of King Island. The identification of this opportunity came about through a review of existing data from the TASXPLOR database as well as through information derived from Geoscience Australia datasets. The initial impetus to search on King Island was brought about by a review of an Australia wide levelled thorium image which highlighted a distinct thorium anomaly occurring near Yellow Rock. A more intensive review of the area suggested that the thorium anomaly was located at or near the back of a Pleistocene shoreline and that it represented a possible heavy mineral (HM) accumulation. A subsequent site investigation suggested the anomaly was potentially related to HM shedding from dunal sand.

1.2 Tenement Details

The tenement boundaries form a WNW line south of Yellow Rock road northward to Cape Wickham with the eastern boundary formed by the Martha Lavinia Nature Reserve whilst the western side is formed by a line that follows the coastline 200m inland from the high water mark (Figure 1). The tenement is approximately 180 square km in area

1.3 Description of Land and Accessibility

The area is dominated by open farm land with a large dune system immediately inland form the Yellow Rock beach which is approximately 12 km long 2 km wide and up to 60m in height. Immediately behind the dunes toward the east are a number of lagoons. On the eastern edge of the tenement some remnant native vegetation is still present. Access to the tenement is afforded by sealed and gravel roads which are maintained by the King Island Council. All drill lines were accessed via the main roads and then thru farmers paddocks once necessary permissions were gained.

2. GEOLOGY

2.1 Regional Geology (Taken from Calver 2007)

King Island consists mainly of Proterozoic rocks and some early Carboniferous granite, with an extensive inland cover of Pleistocene to Recent windblown sand (Figure 2). The Proterozoic geology of the western half of the island is different to that of the eastern half, The western half of the island consists of Mesoproterozoic (1300 Ma) amphibolite-grade metasediments, regionally deformed and metamorphosed at c. 1290 Ma and intruded by 760 Ma granite. The metasediments strike N–S and the granite is regionally concordant. The eastern half of the island mainly consists of a thick succession of relatively unmetamorphosed siltstone, probably a correlate of the lower Neoproterozoic (c. 1000–750 Ma) Cowrie Siltstone of northwest Tasmania. Along the east coast, three small, early Carboniferous granite stocks intrude the Neoproterozoic sedimentary rocks. Scheelite orebodies, which were mined up until 1990, occur in the contact aureoles of the two southern granite stocks. Most of the interior of the island is covered by Quaternary surficial deposits — mainly wind blown sand and stabilised dunes. A number of small Tertiary basalt plugs are known, and Tertiary limestone crops out on the east coast.

Figure 1: Location Map

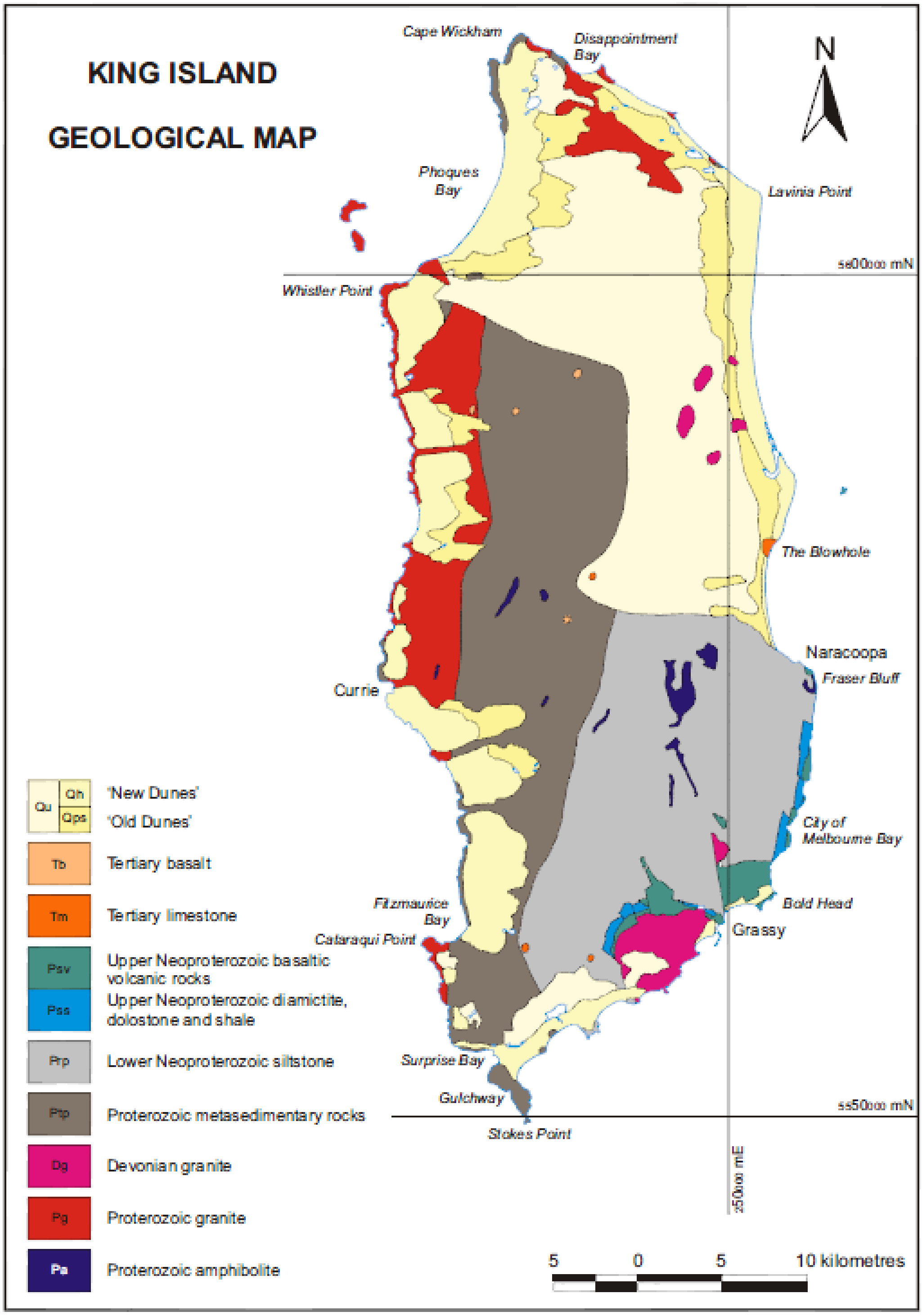


Figure 2: King Island Geology (From Calver 2007).

2.2 Local Geology

EL1/2012 covers the northern area of King Island. In this region Holocene calcareous coastal dunes (New Dunes) extend along the western border of the tenement and overlie Pleistocene dunes (Old dunes) (Calver, 2007). These dunes are believed to have the potential to host HM deposits

The current coastline may have foreshore facies sands between 15m and 18m above the current sea level. This is close to the current understanding of sea-levels on King Island during the Pleistocene. It is more likely that these sands represent the older dunal sands reported previously by Jennings in 1959. A facies change between the recent dunal and older dunal/foreshore facies sands is represented by a reduction of calcareous material, a slight change in colour and an increase in mineralisation.

2.3 Conceptual Model

The conceptual model on which the model is based upon utilises a headland model. This model relies upon longshore drift driving sediment along the coastline until the sediment becomes trapped in the lee of a prominent headland (Figure 3). At Yambacoona it is postulated that sediment is weathered from the Proterozoic basement to the south of the tenement and is then being driven northward along the coast by a predominant SW swell direction which has derived from the Roaring Forties wind pattern. The sediment is then been trapped behind a headland formed from the Proterozoic basement. Mineralisation is hosted within both dunes and beach sands which were deposited during a period of higher sea level most likely during Plio-Pleistocene

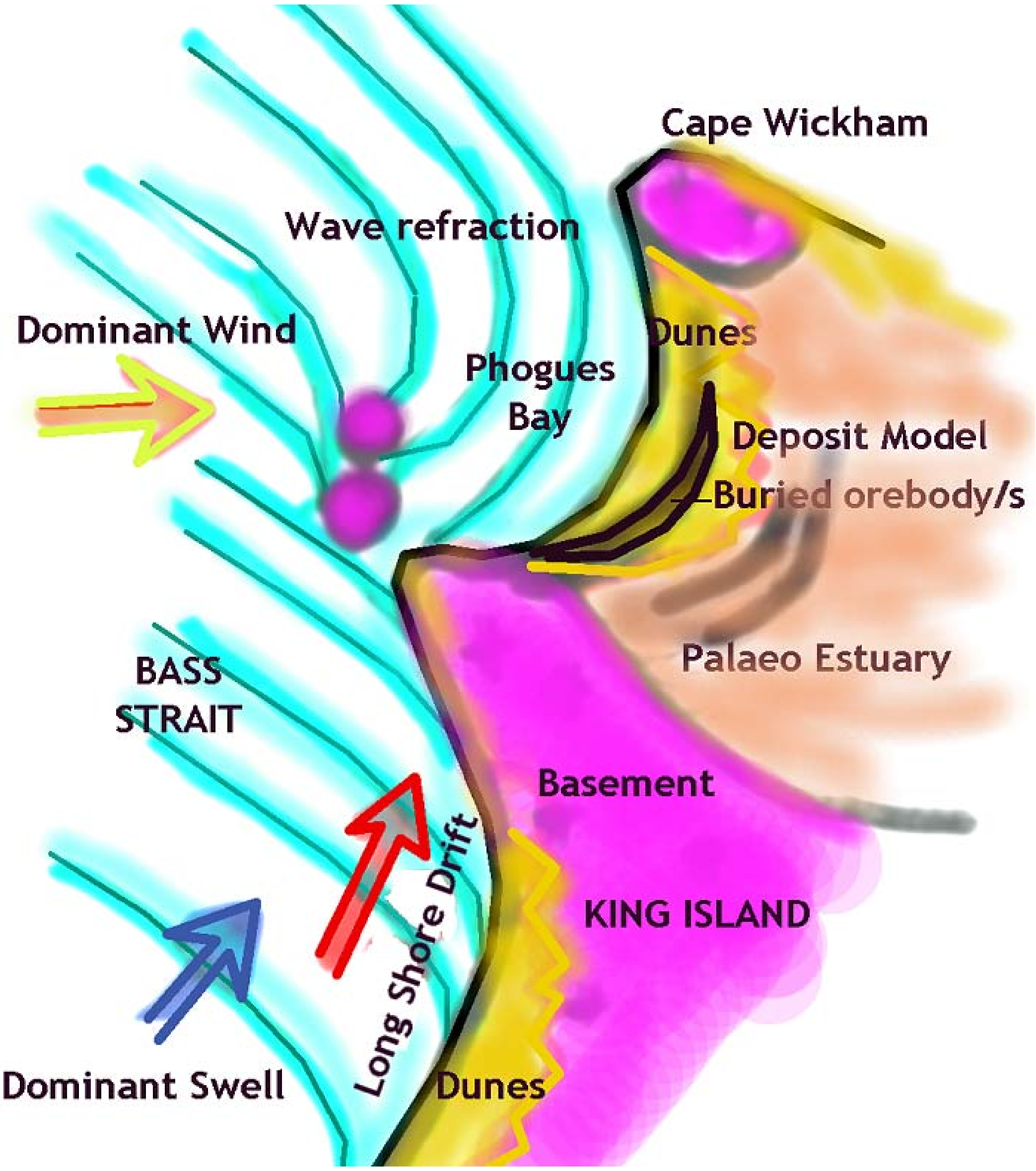


Figure 3: Proposed Conceptual Model

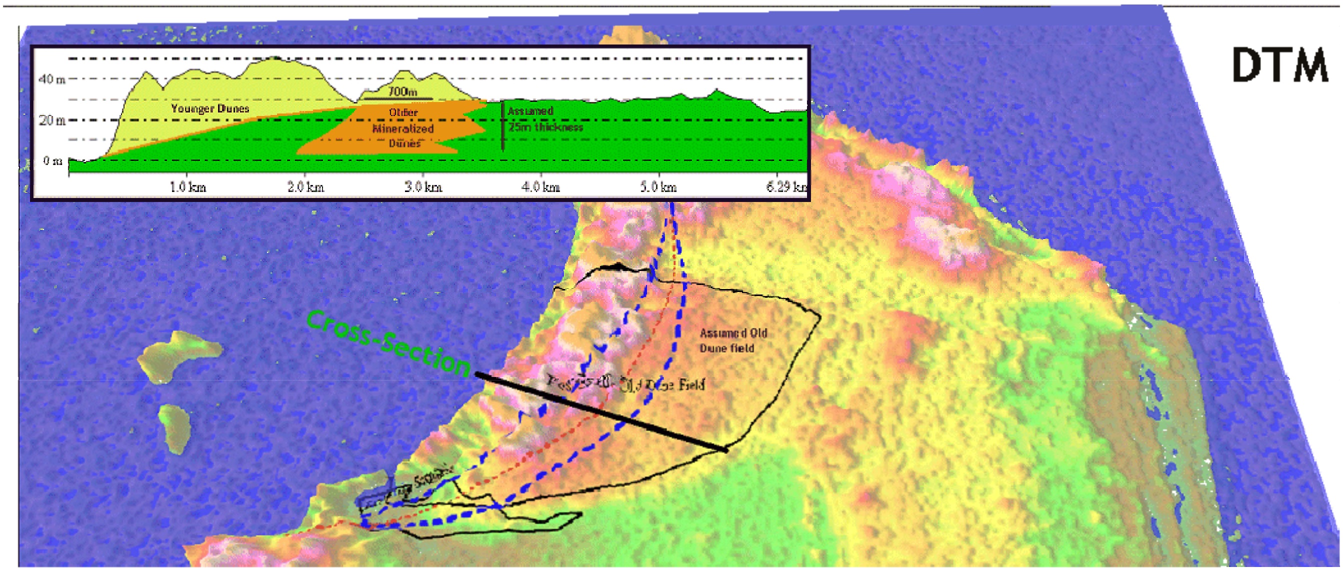


Figure 4: 3D image and cross sectional schematic of target area

3. EXPLORATION ACTIVITIES

3.1 Year 1

3.1.1 Data Review - Previous Exploration

Prior to on ground exploration significant effort was placed into reviewing the project area and the greater King Island region to understand the greater geological setting and what work has been completed. A significant effort has been undertaken by National Mineral Sands who target both modern and older dune systems as well as Rio Tinto. Of note Rio Tinto has also previously identified the thorium anomaly that had been located by Iluka geologists. The target was tested by Rio Tinto using shallow hand auger results but no additional work was carried out due to complications with a JV partner and the eventual disbanding of the Australian mineral sands exploration arm of Rio Tinto. Significant work has also been undertaken along the east coast of the Island which has small but active operation extracting mineral sands. Additional review of the target suggested that the target was more or less the same as the Rio Tinto completed a limited shallow hand augering program to a depth of 4.2 m over an anomaly in the southwest of the area. Grades of 1.5% to 4.0% heavy minerals were found using heavy mineral separation. Modal mineralogy indicated a zircon content of 7 to12%, rutile of 3 to 9.6%, leucoxene of 3.2 to 19.6% and ilmenite of 17.4 to 24.5%. (Bishop 2007).

3.1.2 Geophysical Targeting

One of the primary factors driving the targeting of the northern end of King Island was the presence of a thorium anomaly which was identified from a national data set taken from the Geoscience Australia website. The anomaly is approximately 2km long and approximately 500m wide (Figure 3) at its maximum extent and is interpreted to occur on the southern end of a much larger dune system. Panning of surface sediment near the centre of the anomaly confirmed the initial work undertaken by Rio Tinto anomaly with the identification of heavy minerals including ilmenite, rutile, zircon and the presence of the mineral monazite which is known to create surface anomalies. A review of the publicly available magnetic data sets was also undertaken in an attempt to identify linear magnetic anomalies which may represent buried HM concentrations. Unfortunately due to the relatively short distance between the potential host sand and the underlying basement it was considered likely that any discreet anomalies would be masked by the basement.

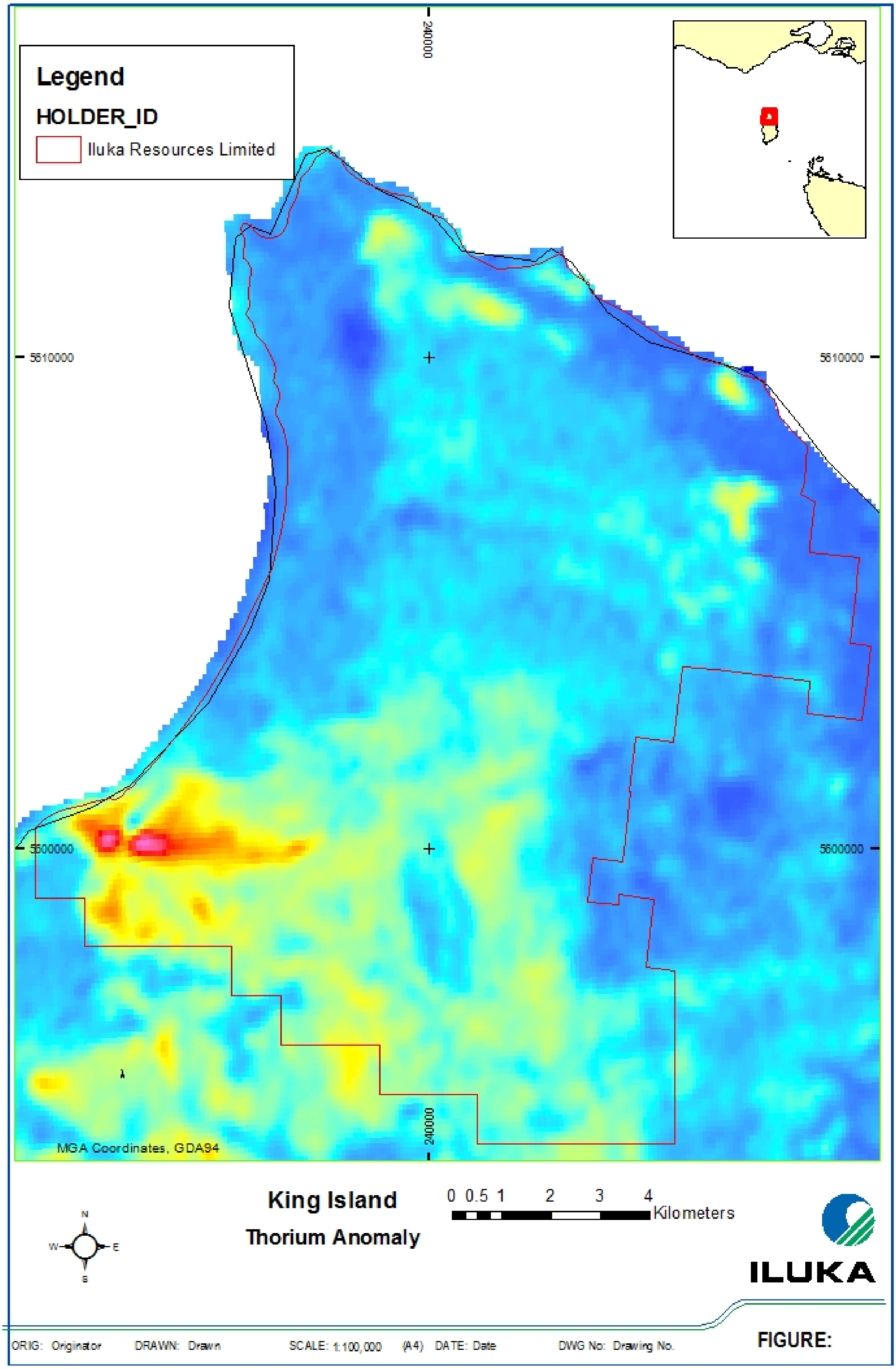


Figure 5: Th Anomaly Yambacoona

3.1.3 Drilling

In early December 2012 a truck mounted Mantis 75 and support truck were mobilised from Melbourne to King Island using the weekly ship that supplies the island. Due to the operating schedule of the ship the vehicle was required to be dropped off one day prior to departure and the crew were then flow to the Island using Rex Airlines. Thirty three holes were drilled for an advance of 839.5m, 79 samples were submitted to Iluka's Hamilton Laboratory for HM analysis Due to the back log of the samples assays were not returned until early May. All holes were located using a hand held GPS as this is considered accurate enough for first pass drilling. As part of standard Iluka practice all holes were logged using standard assay codes (Appendix 7.5)

3.1.3.1 Line 1

Six holes were drilled along Line 1 spaced at around 800m. Drilling along Line 1 was designed to test the source of a thorium anomaly in the southern portion of the tenement.

Holes KI001-KI003 (Appendix 7.1)intersected from surface; recent calcareous dunes up to 24m thick; fossiliferous estuarine sands and clays to a depth of 27m; coarse high energy poorly sorted beach sand with grainsizes ranging from medium to pebble; saprolite and basement meta-siltstones. KI003 was terminated in a very hard mafic dike.

KI004 intersected from surface; recent lagoonal sediments most likely of back beach lagoon origin up to 10.5m thick; 6m of coarse immature sand similar to high energy beach sands intersected in KI001-03; saprolite and meta-sedimentary rocks from 16.5m.
KI005 intersected lagoonal sand and clays to 6m depth overlying meta-siltstone/mica schist. KI006 intersected saprolite from surface and was terminated at a depth of 4.5m. Estimated HM up to 1.0% was intersected in recent dunal sands in KI001-KI003 with KI003 intersecting an estimated 18m @ 0.6% HM from surface. Initial visual analysis of mineralogy in the field revealed a high proportion of trash minerals in samples with very little zircon or rutile. No significant mineralisation was intersected in KI004-KI006.

Table 1: Collar Details

BHID	East	North	BestRL	TD	Latitude	Longitude	DRILTYPE	Azimuth	Dip	Max_CalcHM	Max_EstHM
KI001	750658.8	5602333	31.4	37.5	-39.6921	143.9232	RCAC	0	-90	1.88	0.7
KI002	750665	5601578	25.45	36	-39.6989	143.9235	RCAC	0	-90	1.84	0.8
KI003	750629.2	5600964	32	51	-39.7044	143.9234	RCAC	0	-90	2.42	1
KI004	750652	5600090	13.2	33	-39.7123	143.9239	RCAC	0	-90	1.41	0.3
KI005	750371.2	5599284	12.3	12.5	-39.7196	143.921	RCAC	0	-90	0	0
KI006	750673.5	5598530	15.7	4.5	-39.7263	143.9248	RCAC	0	-90	0	0
KI007	752242.6	5604429	64.29	62	-39.6727	143.9408	RCAC	0	-90	1.01	0.5
KI008	753141.7	5604332	45.6	45	-39.6734	143.9513	RCAC	0	-90	0.3	0.3
KI009	752973	5602513	32.68	36	-39.6898	143.9501	RCAC	0	-90	0.76	0.5
KI010	753277.7	5601874	27.7	33	-39.6954	143.9539	RCAC	0	-90	0.9	0.5
KI011	753954.7	5601262	26.8	18	-39.7007	143.962	RCAC	0	-90	0.93	0.5
KI012	754423.3	5600630	20.3	27	-39.7063	143.9677	RCAC	0	-90	0.1	0.1
KI013	754887.9	5599979	18.21	15	-39.712	143.9733	RCAC	0	-90	0	0
KI014	755351.8	5599306	27.39	5	-39.7179	143.979	RCAC	0	-90	0	0
KI015	755823.8	5598672	16.8	15	-39.7235	143.9848	RCAC	0	-90	0	0
KI016	756291.6	5597964	16.94	18	-39.7297	143.9905	RCAC	0	-90	0	0
KI017	756727.1	5597383	15.64	30	-39.7348	143.9958	RCAC	0	-90	0	0
KI018	753998.4	5606485	32.32	36	-39.6537	143.9605	RCAC	0	-90	0.55	0.3
KI019	754724.3	5606290	28.45	30	-39.6553	143.969	RCAC	0	-90	0	0
KI020	755517.6	5606145	26.35	24	-39.6563	143.9783	RCAC	0	-90	0.2	0.2
KI021	756288	5606015	22.59	18	-39.6573	143.9873	RCAC	0	-90	0.3	0.3
KI022	757091.2	5605877	22.07	16	-39.6583	143.9967	RCAC	0	-90	0	0
KI023	757887	5605733	22.5	15	-39.6593	144.006	RCAC	0	-90	0.45	0.1
KI024	758662.9	5605569	28.09	15	-39.6606	144.0151	RCAC	0	-90	0.33	0.1
KI025	759442.2	5605467	23.2	11	-39.6613	144.0242	RCAC	0	-90	0.28	0
KI026	760242	5605336	24.3	14	-39.6622	144.0336	RCAC	0	-90	0.18	0
KI027	760866	5605237	25.15	9	-39.6629	144.0409	RCAC	0	-90	0.2	0
KI028	754099.4	5609390	39.43	37	-39.6276	143.9605	RCAC	0	-90	0.1	0.1
KI029	754871.5	5609324	42.5	39	-39.6279	143.9695	RCAC	0	-90	0.1	0.1
KI030	755580.9	5609093	34.8	30	-39.6298	143.9779	RCAC	0	-90	0.2	0.2
KI031	756510.6	5609453	25.56	27	-39.6263	143.9886	RCAC	0	-90	0	0
KI032	757275.6	5609351	30.58	24	-39.627	143.9975	RCAC	0	-90	0.27	0.2
KI033	758069.5	5609182	29.49	16	-39.6282	144.0068	RCAC	0	-90	0	0

Table 2: Estimated HM Line 1

Hole ID	TD(m)	Saprolite/Basement (m)	Estimated HM
KI001	37.5	33	15.0m @ 0.41.0m @ 0.4% HM / 16.5m
KI002	36.0	34.5	10.5m @ 0.6% HM / 4.5m
KI003	51.0	33	18.0m @ 0.6% HM / 4.5m
KI004	33.0	16.5	Trace (Lagoonal)
KI005	12.5	6	-
KI006	4.5	0	-

3.1.3.2 Line 2

Ten holes were drilled along Line 2 spaced at approximately 800m. Holes KI007 and KI008 were slightly offset due to land access issues. Drilling along Line 2 was designed to test the northern extension of the thorium anomaly and the potential for high value HM deposits within buried palaeo-coastal positions inland from the current coastline.

Holes KI007-KI010 (Appendix 7.2) intersected from surface; calcareous dunal sands between 3-33m thick; up to 10.5m of foreshore facies sands or older dunal sands (absent in KI010); 7.5m to 21m of fine grain fossiliferous estuarine sand, overlying saprolite (absent in KI008, KI010) and schist (not intersected in KI009) at which point holes were terminated.

Minor HM (<0.5%HM) was intersected in the marine/dunal sands and estuarine sands in KI007-KI008. The facies change between the overlying “recent” dunal sands was identifiable by a decrease in calcareous and shelly material and slight increase in HM intersections.

KI011 intersected from surface; a thin veneer of dunal sand 1.5m thick; 12m of back beach lagoonal sands and clays; 3m of coarse fluvial/marine fossiliferous sand overlying Proterozoic granite. No significant mineralisation was intersected.

KI012 and KI013 intersected from surface; 7.5 to 12m of lagoonal and fossiliferous estuarine sands and clays; up to 10.5m of saprolite overlying basement schist. No significant mineralisation was intersected.

KI014-KI017 intersected from surface; recent lagoonal sands and clays overlying basement schist (KI014) or saprolite (KI017). KI015 and KI016 intersected a thin layer up to 7.5m thick of very coarse fossiliferous sand overlying saprolite at which point holes were terminated. No significant mineralisation was intersected.

3.1.3.3 Line 3

Eleven holes were drilled on Line 3 spaced at approximately 800m. Drilling along line 3 was designed to test the potential for buried beach positions inland from the current coastline.

Holes KI018-KI021 (Appendix 7.3) intersected from surface; recent calcareous dunal sand between 1.5m and 7.5m thick; lagoonal sands and clays (absent in KI020) up to 8m thick.

KI018 intersected 4.5m of medium grained, well sorted sand of possible marine origin from 13.5m underlying lagoonal sands and clays. This sand was absent in in KI019-KI021 with these holes intersecting coarse grained fossiliferous beach sand underlying lagoonal sediments between 4.5m and 7.5m thick.

Drill holes then intersected very fine fossiliferous sands estuarine/marine origin between (absent in KI021) overlying saprolite and granite basement at which point holes were terminated. No significant mineralisation was intersected in KI018-KI021. Estimated minor HM (<0.3%) was intersected in KI018, KI020 and KI021 in dunal, lagoonal and beach sands.

KI022 Intersected from surface; 4.5m of lagoonal sands and clays; very fine grained fossiliferous estuarine/marine sands 7.5m thick; 1.5m of saprolite, terminating in 3m of granite. No significant mineralisation was intersected.
KI023 intersected from surface; 6m of lagoonal sands and clays; 3m of medium to very coarse fossiliferous sand; 3m of very fine fossiliferous sand; saprolite and granite from 12m to termination.
KI024 intersected from surface; 6m of lagoonal sands and clays; 7.5m of coarse grained fossiliferous sands; terminating in Miocene bryozoal limestone.
KI025-KI027 intersected from surface; 4.5m to 6m of lagoonal sands and clays; 1.5m to 3m of coarse grained fossiliferous sands terminating in between 1.5-6.5m of saprolite (KI027) and granite.
No significant mineralisation was intersected by drill holes KI023-KI027.

3.1.3.4 Line 4

KI028-KI031 (Appendix 7.4) intersected from surface; calcareous dunal sands between 12m and 22.5m thick; fine grained estuarine sands up to 13.5m thick from 12.m to 22.5m; ~3m of granite at which point holes were terminated. No significant mineralisation was intersected.
KI032 intersected from surface; 3m of lagoonal sands and clays; 3m of medium grained sand of possible marine origin; 15m of fossiliferous estuarine sands and clays terminating in 3m of granite.
KI033 intersected from surface; 9m of lagoonal sands and clays; 4.5m of estuarine sands and clays terminating in 2.5m of granite. No significant mineralisation was intersected in KI032 or KI033.

3.1.4 Reconnaissance visit

As part of standard geological practice thorough reconnaissance was undertaken on not only the tenement but also on the greater part if the island so an understanding of the greater geological setting could be made. The reconnaissance involved visiting publicly accessible outcrops and beaches to help refine the environment of formation. As part of the initial contact time was spent understanding the local community and the facilities of the island.

3.1.5 Land Access Negotiation

Significant time was spent gaining access to the tenements in order to undertake exploration on ground. As a whole the discussion with Land Owners and local council went well with all parties approached agreeing to allow access for drilling. As part of Iluka's commitment to protecting the land owners interests a commitment was made to rehabilitate all disturbances as soon as possible, this was done through a standard land access agreement

3.1.6 Access and Line clearing

Access to the drill sites was afforded via local council roads both sealed and gravel. Once the tenement was reached farm laneways were used to access paddocks. No line clearing was required and therefore not undertaken. Due to the nature of the ground water all holes required the digging of sump, to avoid contamination between farms all sumps were dug by hand.

3.1.7 Sampling

Samples were labelled using a numeric system. All sampling took place at 1.5m intervals. Geological logging of samples for all drilling involved a geologist recovering a portion of drill cutting from the sample bag and panning it in water for visual examination. A logging code was recorded against the sample for the dominant lithology, non-dominant lithology, hardness, colour, sorting, grain size, estimated HM, estimated rock along with a general comment.

3.1.8 Environment

Every effort was made during the reconnaissance visit and during the drill campaign to leave the tenure as it was found. This included staying on pre-defined tracks, removing any rubbish and rehabilitating all drill holes and sumps immediately after the hole has been completed. As part of standard Iluka practice once logging and sampling had been completed any samples not required for assay were returned back down the hole. The purpose of this is twofold as it helps to prevent the hole from collapsing and causing a major drainage issue and it allows for immediate clean up of the drill site. In addition to relacing sample each hole had an NQ size hole plug placed down each hole to help prevent collapsing of the hole over time
All used sample bags and rubbish are bagged up and disposed of at the local waste facilities. As part of the initial environmental assessment undertaken it was highlighted that there was a very minor potential for contamination between ground water tables, as a precaution bentonite was on the rig at all times. As a very precautionary measure it was used in one hole where limestone was intersected. To ensure that an accurate record was kept of all disturbances a photo was taken of a before and after photo has been taken of each hole (appendix 7.7). Prior to final relinquishment all holes will be re-examined to ensure that there has been no collapse of the holes and that all vegetation is growing as expected.

3.1.9 Assaying

3.1.9.1 Heavy liquid separation

Method I (appendix 7.6) analysis has been used for all analysis of Iluka samples (Appendix II). Samples are screened into Slimes (<53 µm), Sand (53 – 710 µm), SandC (710 – 2000 µm) and Oversize (>2000 µm). Slimes and Oversize are weighed and discarded and a 100g split of Sand + Sand C is subject to a heavy liquid (Lithium Polytungstates - LST) separation. At this stage the HM (including gangue mineral and ground rock) is separated on the basis of specific gravity (2.96 g/cm^3) of the hosting sand. The components are dried and weighed and HM content is reported as an HM in sand fraction and back calculated and reported as an HM as received (HM in ground). Significant intercepts are presented in Tables 2 and 3.
79 samples were selected for Method I assay

Table 3: Max HM Assays > 0.2 % HM

Hole_id	Easting_MGA	Northing_MGA	Elevation	Total Hole Depth	Max_HMrec	Max_EstHM
KI001	750658.8	5602333	31.4	37.5	1.88	0.7
KI002	750665	5601578	25.45	36	1.84	0.8
KI003	750629.2	5600964	32	51	2.42	1
KI004	750652	5600090	13.2	33	1.41	0.3
KI007	752242.6	5604429	64.29	62	1.01	0.5
KI009	752973	5602513	32.68	36	0.76	0.5
KI010	753277.7	5601874	27.7	33	0.9	0.5
KI011	753954.7	5601262	26.8	18	0.93	0.5
KI018	753998.4	5606485	32.32	36	0.55	0.3
KI023	757887	5605733	22.5	15	0.45	0.1
KI024	758662.9	5605569	28.09	15	0.33	0.1
KI025	759442.2	5605467	23.2	11	0.28	0
KI026	760242	5605336	24.3	14	0.18	0
KI027	760866	5605237	25.15	9	0.2	0
KI032	757275.6	5609351	30.58	24	0.27	0.2

Note: The differences between the Max HMrec and the Max_EstHM is attributed to the presence of shell material reporting as HM.

3.1.9.2 Mineralogy - Grain count

As part of the routine analysis of the HM a brief examination of the higher grade samples was undertaken to determine the mineral assemblage. In general terms the samples that reported higher HM values were found to contain up to 80% shell fragments. Other observations would suggest that the samples would be considered very immature with a number of samples containing fresh euhedral garnet (Up to 10% of total sample) and tourmaline crystals (up to 10%). The valuable heavy mineral component was generally less than 30% of the total sample with the majority of this being ilmenite/altered ilmenite which was up to 25% of the total HM. A maximum of 5% zircon and 5% rutile (Of the HM) were viewed in several samples. As with the garnet the rutiles were relatively fresh with a number of crystal faces evident. A number of the zircon grains were quite well rounded and frosted which is suggestive of a longer transport distance with in an Aeolian environment. Other dominant species included staurolite and mica. Given the lack of VHM within the total HM sample and the dominant mineral species present it is suggested that the envrionmnet is not conducive to the formation of a high value assemblage.

4. EXPENDITURE

As of the end of April 2013 approximately $131,000 has been spent on the exploration of tenement as opposed to a minimum expenditure commitment of $174,000. Whilst this is a 30% shortfall it still represents a significant commitment to exploration. It is noted that approximately half of the money has gone into the ground whilst the other half has gone into concept generation, tenement fees and land access (land access negotiations). It is anticipated that an additional $5000 will be spent during May on report writing and a final visit to brief land owners on Iluka's intention.

Table 4: Expenditure Report to April 2013

Item	Cost
Travel & Accom-Dom	12,960.88
Entertainment Gen	141.45
Field Rations & Food	189.39
External Services	2,520.00
Contractor	16,408.12
Contractor Drilling	48,342.45
Sundry Expenses	5,836.42
Laboratory HM Assay	2,475.00
Tenement Geological	37,874.77
Tenement Field Suppl	1,377.60
Tenement Travel	2,975.78
	131,101.86

5. CONCLUSIONS AND RECOMMENDATIONS

Drilling on the King Island Yambacoona tenement (EL1/2012) in 2012 consisted of 33 holes along four traverses (Line 1-4) for an advance of 839.5m (Figure 1).

Drilling was designed to test a thorium anomaly in the southern portion of the tenement which was interpreted as the surface expression of a heavy mineral strand within an older strand and dunal system. Minor HM was intersected in dunal sands along Line 1 with up to 18.0m @ 0.6% EST HM / 4.5m in KI003. Mineralogical analysis of the higher grade samples suggest that a significant portion of the HM being reported is shell material rather than true HM and that the VHM comprises less than 40% of the sample, with the dominant VHM being ilmenite/altered ilmenite. Mineralisation occurred from between 8 and 27m above current sea level which is consistent with a Plio-Pleistocene shore line.
Intersections of foreshore facies sands occurred in isolation and generally occurred in close proximity to the current coastline. Intersections of foreshore facies sands may in fact represent Pleistocene dunal sands. Misidentification may relate to sands being sourced from windblown beach sands explaining the well-rounded to sub-rounded grains.

Drilling inland from the current coastline was designed to test the occurrence of buried Pleistocene shorelines. Drill holes dominantly intersected estuarine sands overlying/inter-fingering coarse fossiliferous sand/gravel similar to numerous beaches on the current coast line. No significant mineralisation was intersected within estuarine or coarse beach sands.

No additional work is recommended on this target.

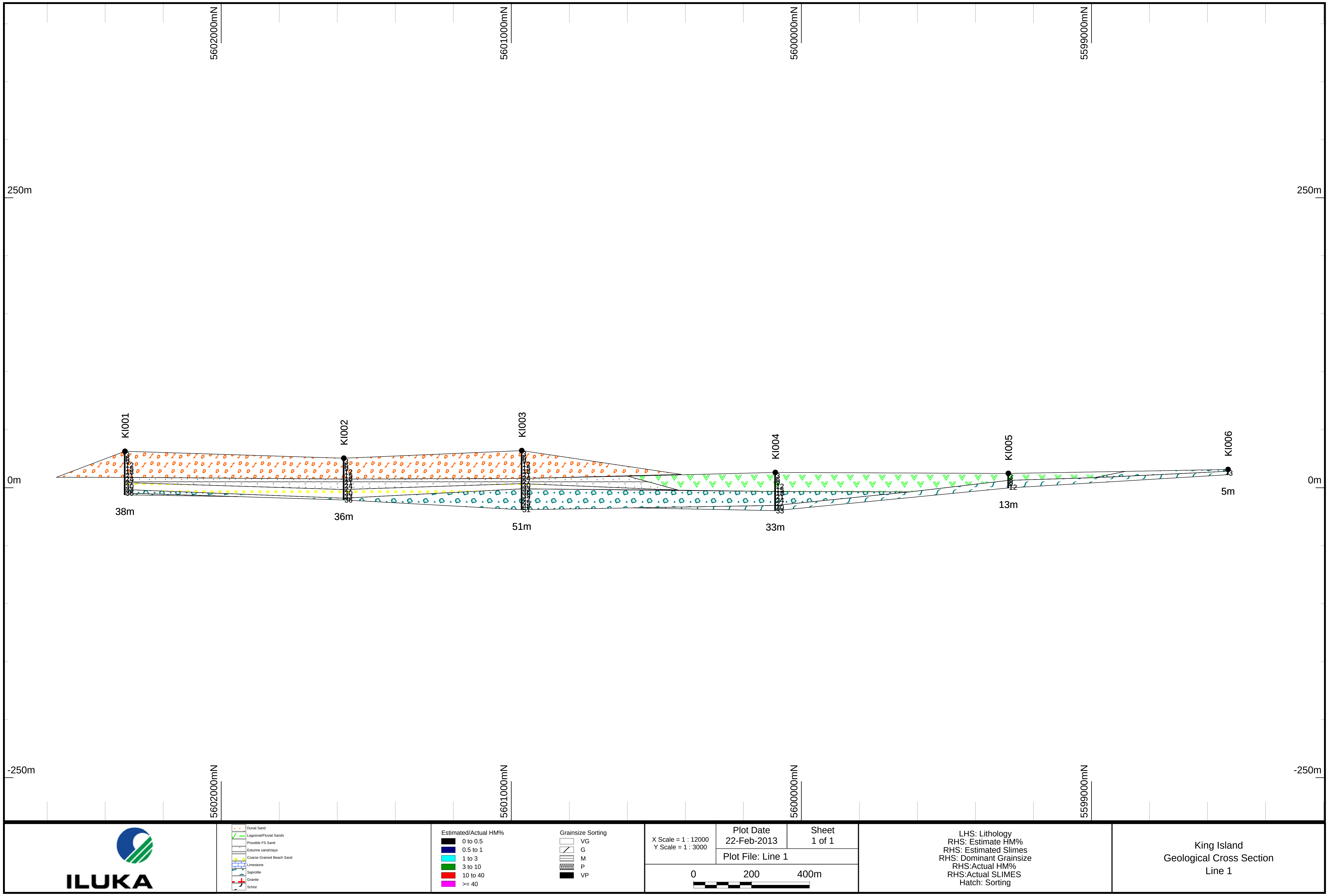
6. BIBLIOGRAPHY

Calver, C.R., 2007. *Some Notes on the geology of King Island*. Tasmanian Geological Survey, Record 2007/02.

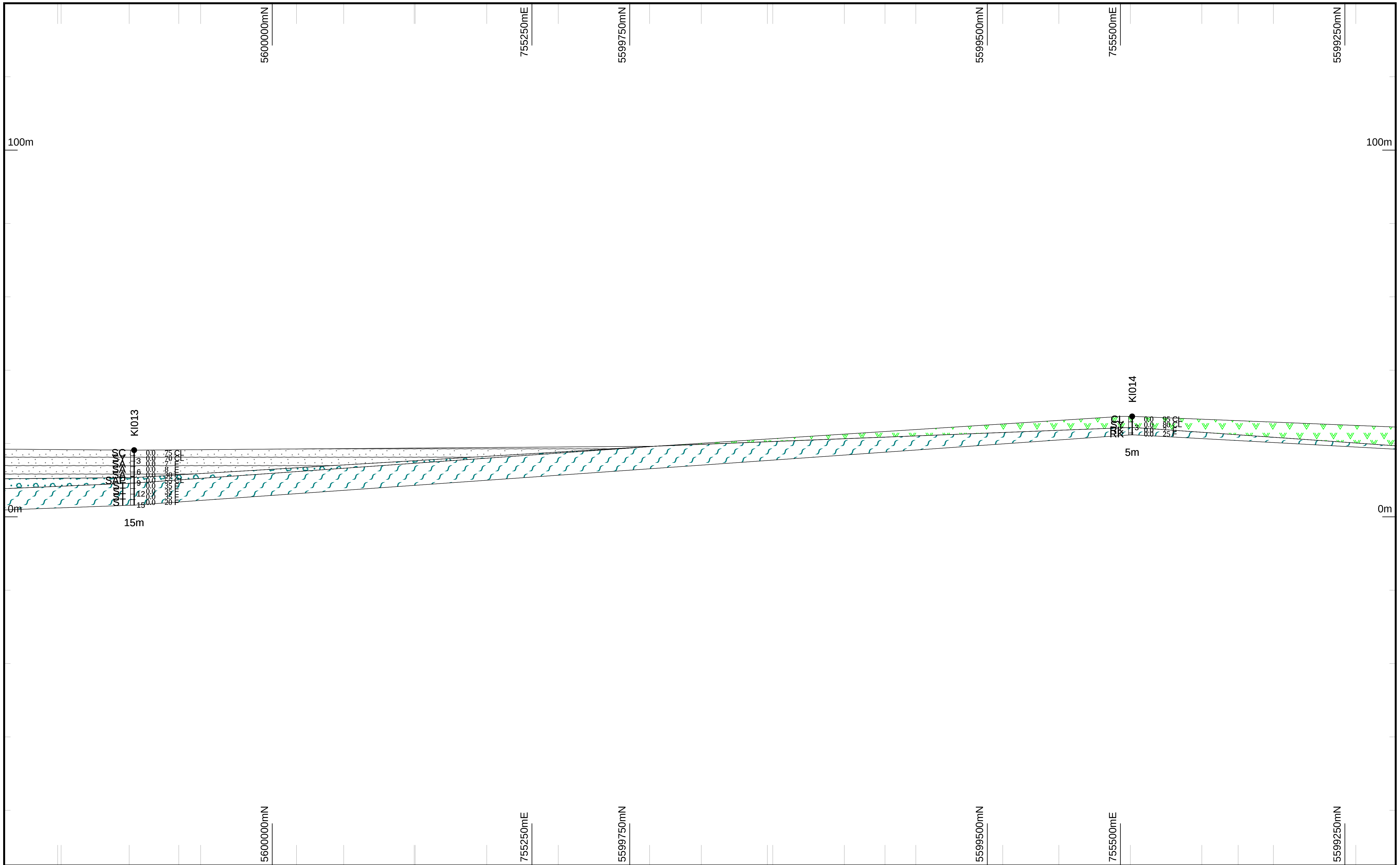
Bishop, S.R 2009 *Final Report For the Period 12 November 2008 to Januiary 2009 EL22/2006 Yambacoona Mineral Sands Project Yambacoona King Island Exploration report No. 28386*

7. APPENDIX

7.1 Line 1 Schematic Section


5602000mN
5601000mN
5600000mN
5599000mN
250m
0m
-250m
KI001
KI002
KI003
KI004
KI005
KI006
38m
36m
51m
33m
13m
5m
ILUKA
Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist
Estimated/Actual HM%
0 to 0.5
0.5 to 1
1 to 3
3 to 10
10 to 40
>= 40
Grainsize Sorting
VG
G
M
P
VP
X Scale = 1 : 12000
Y Scale = 1 : 3000
Plot Date
22-Feb-2013
Sheet
1 of 1
Plot File: Line 1
0
200
400m
LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting
King Island
Geological Cross Section
Line 1

7.2 Line 2 Schematic Section



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%
0 to 0.5
0.5 to 1
1 to 3
3 to 10
10 to 40
>= 40

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 3000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013

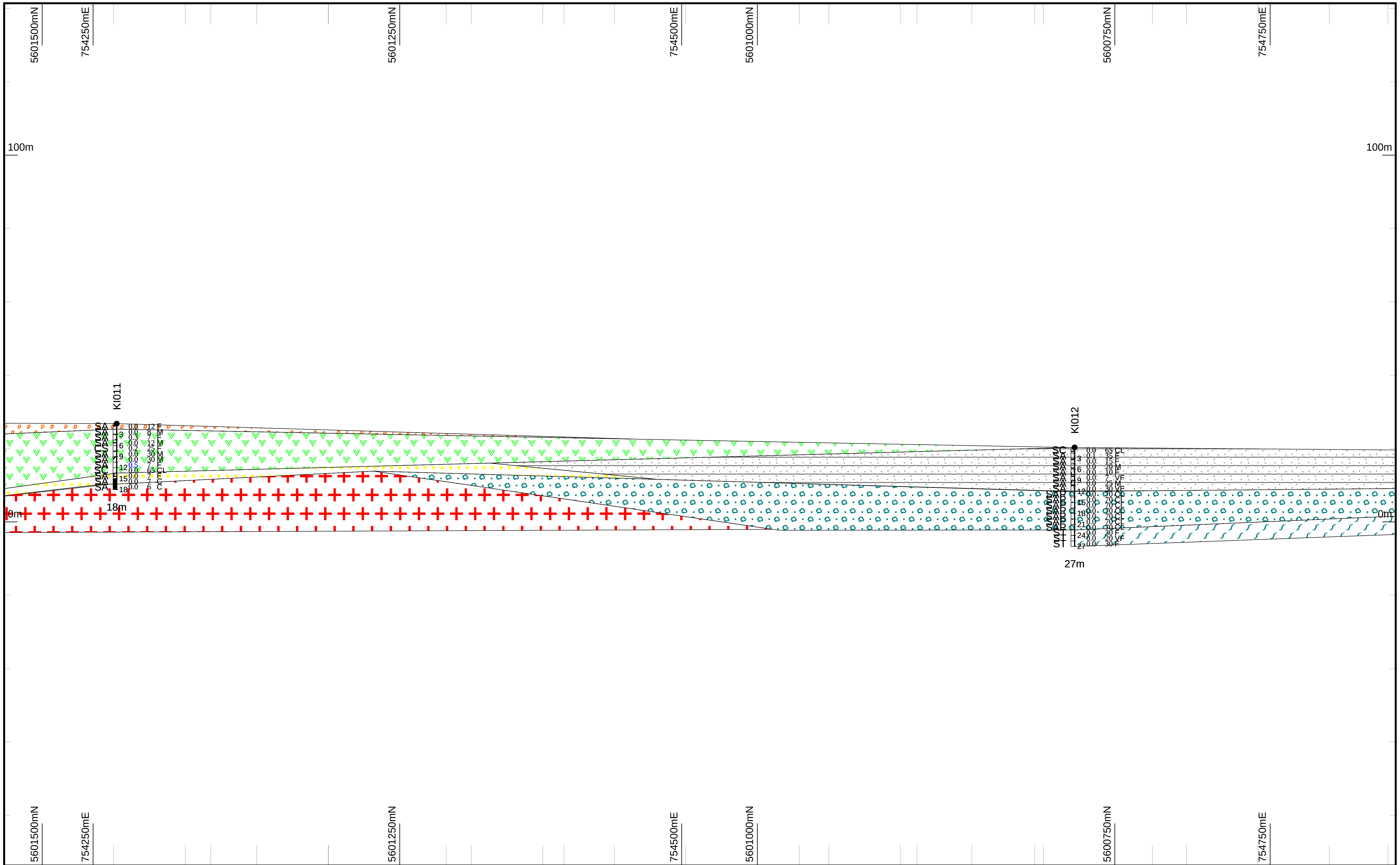
Sheet 1 of 1

Plot File: Line 2D

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 2D



ILUKA

Lithology
Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%
0 to 0.5
0.5 to 1
1 to 3
3 to 10
10 to 40
>= 40

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 3000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013

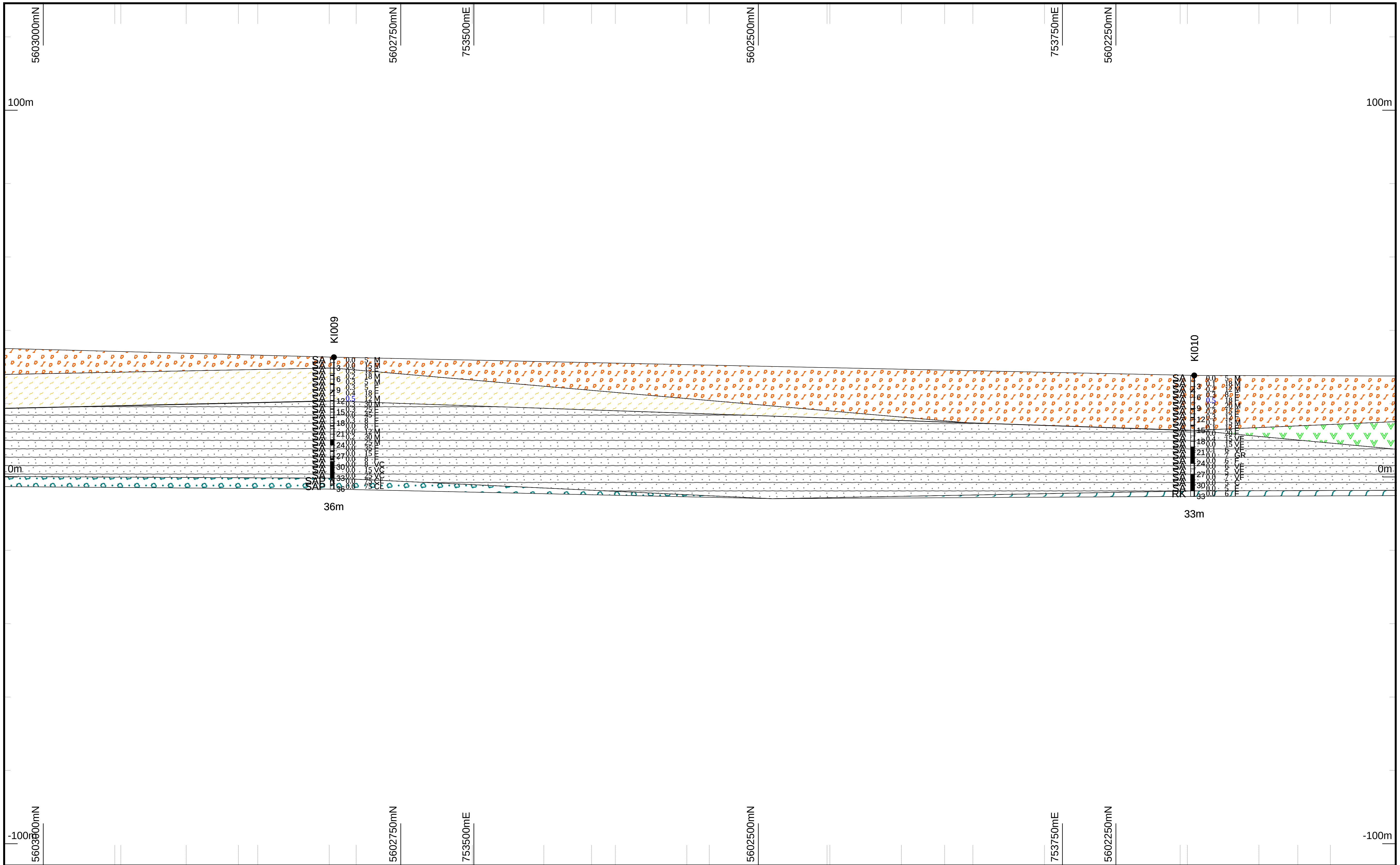
Sheet 1 of 1

Plot File: Line 2C

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 2C



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
	0 to 0.5
	0.5 to 1
	1 to 3
	3 to 10
	10 to 40
	>= 40

Grainsize Sorting	
	VG
	G
	M
	P
	VP

X Scale = 1 : 3000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013

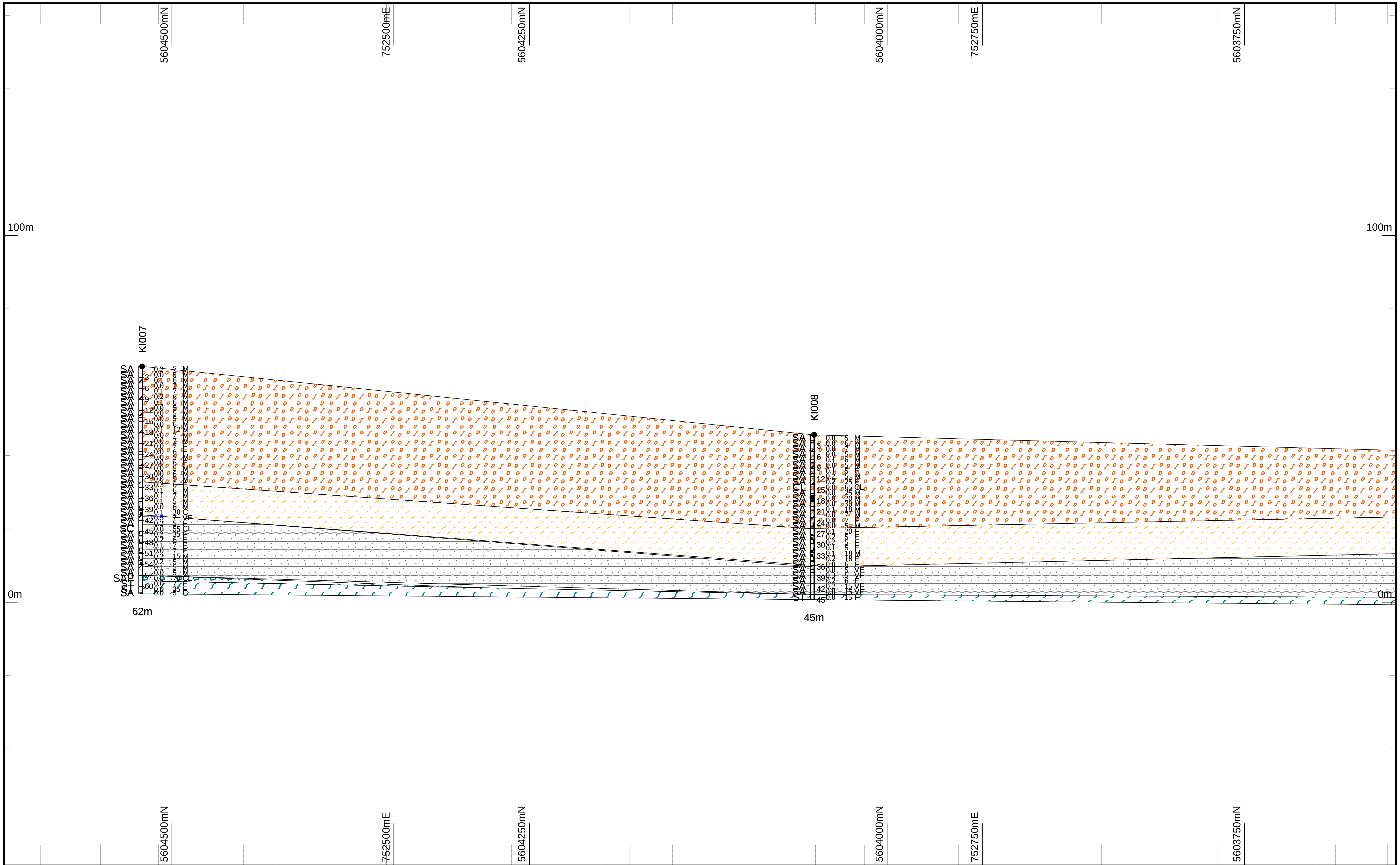
Sheet 1 of 1

Plot File: Line 2B

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 2B



Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	Grainsize Sorting
0 to 0.5	VG
0.5 to 1	G
1 to 3	M
3 to 10	P
10 to 40	VP
>= 40	

X Scale = 1 : 3000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013 | Sheet 1 of 1

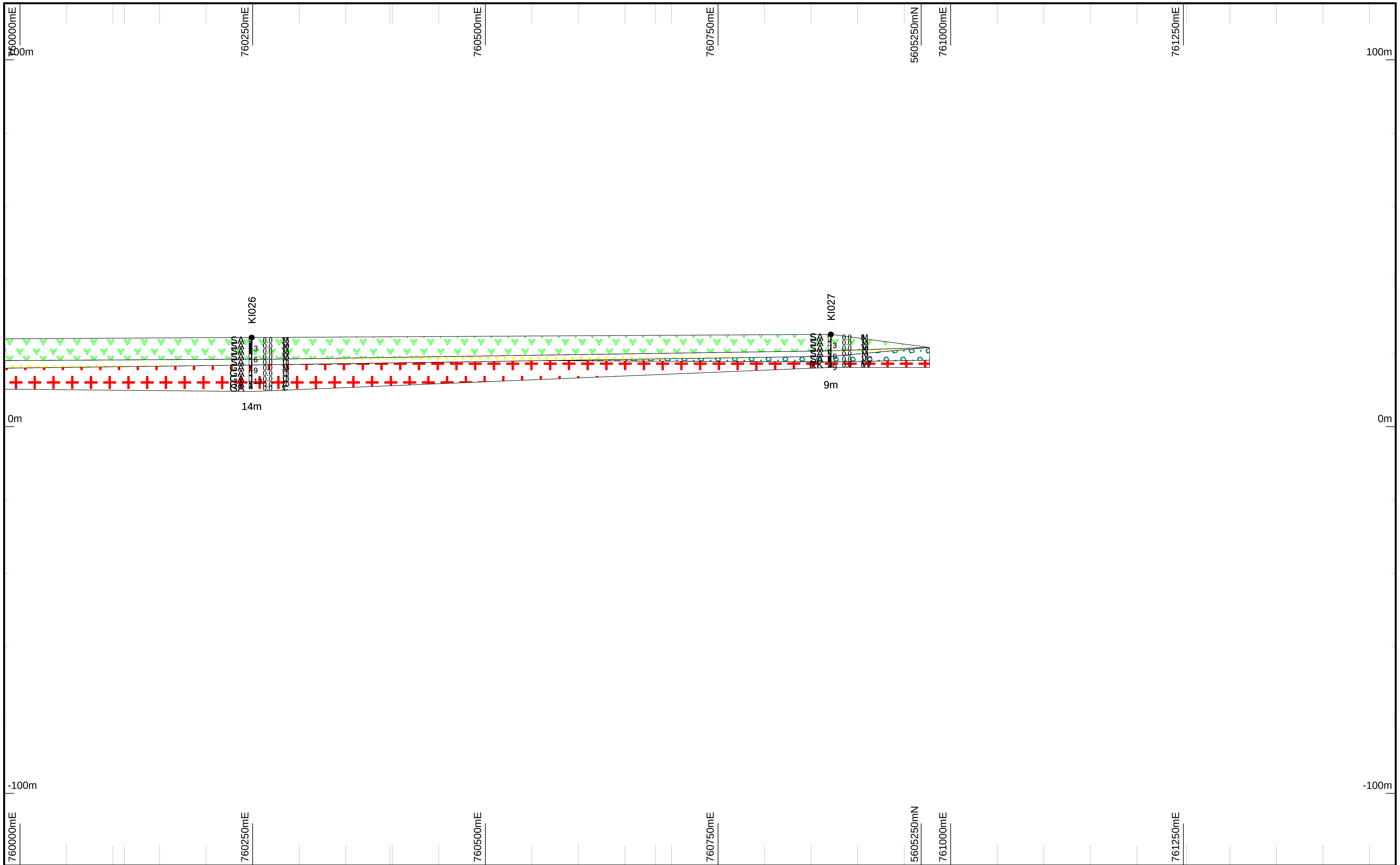
Plot File: Line 2A

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 2A

7.3 Line 3 Schematic Section



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
0 to 0.5	
0.5 to 1	
1 to 3	
3 to 10	
10 to 40	
>= 40	

Grainsize Sorting	
VG	
G	
M	
P	
VP	

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date
22-Feb-2013

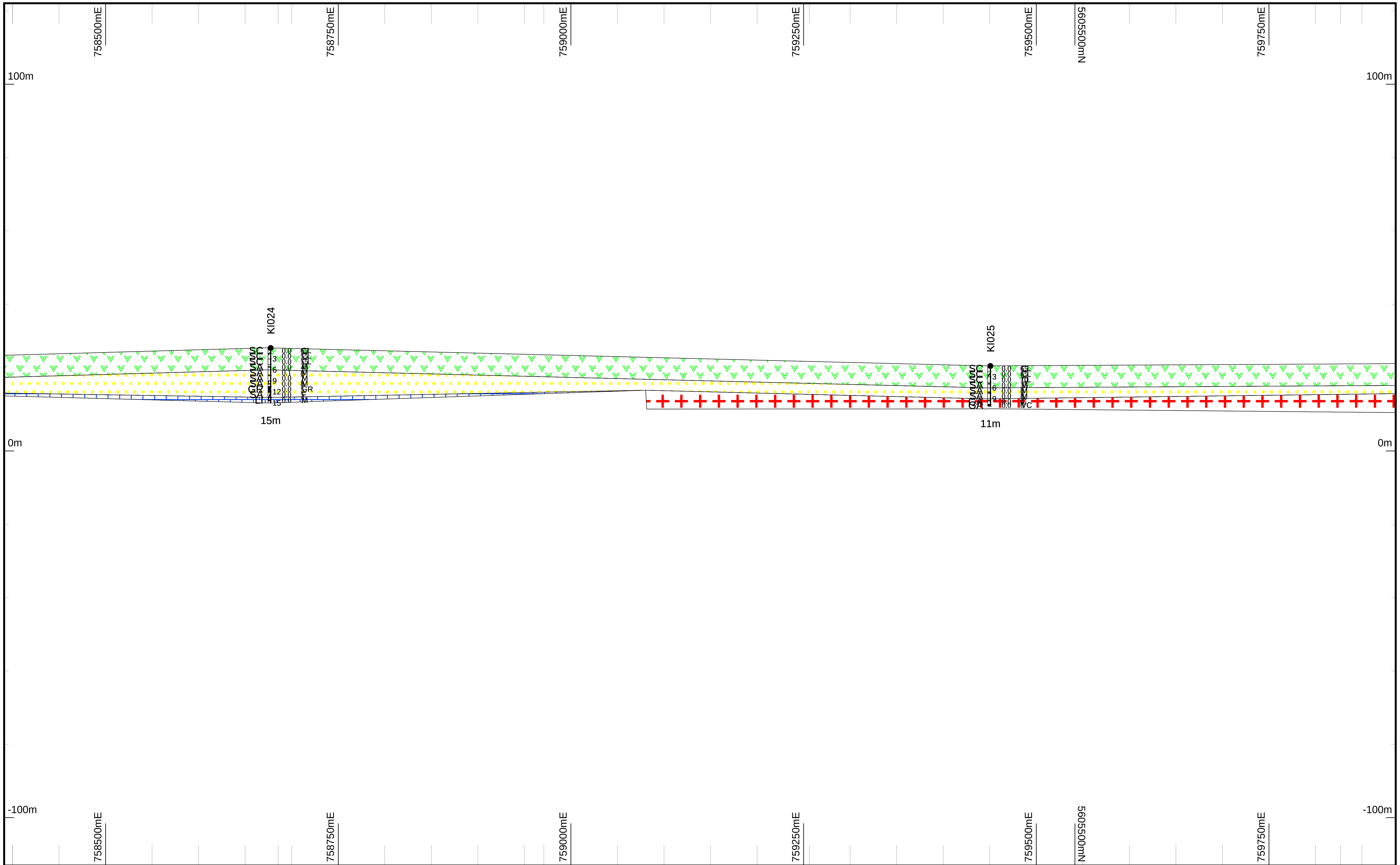
Sheet
1 of 1

Plot File: Line 3E

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 3E



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%
0 to 0.5
0.5 to 1
1 to 3
3 to 10
10 to 40
>= 40

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 4000
Y Scale = 1 : 1000

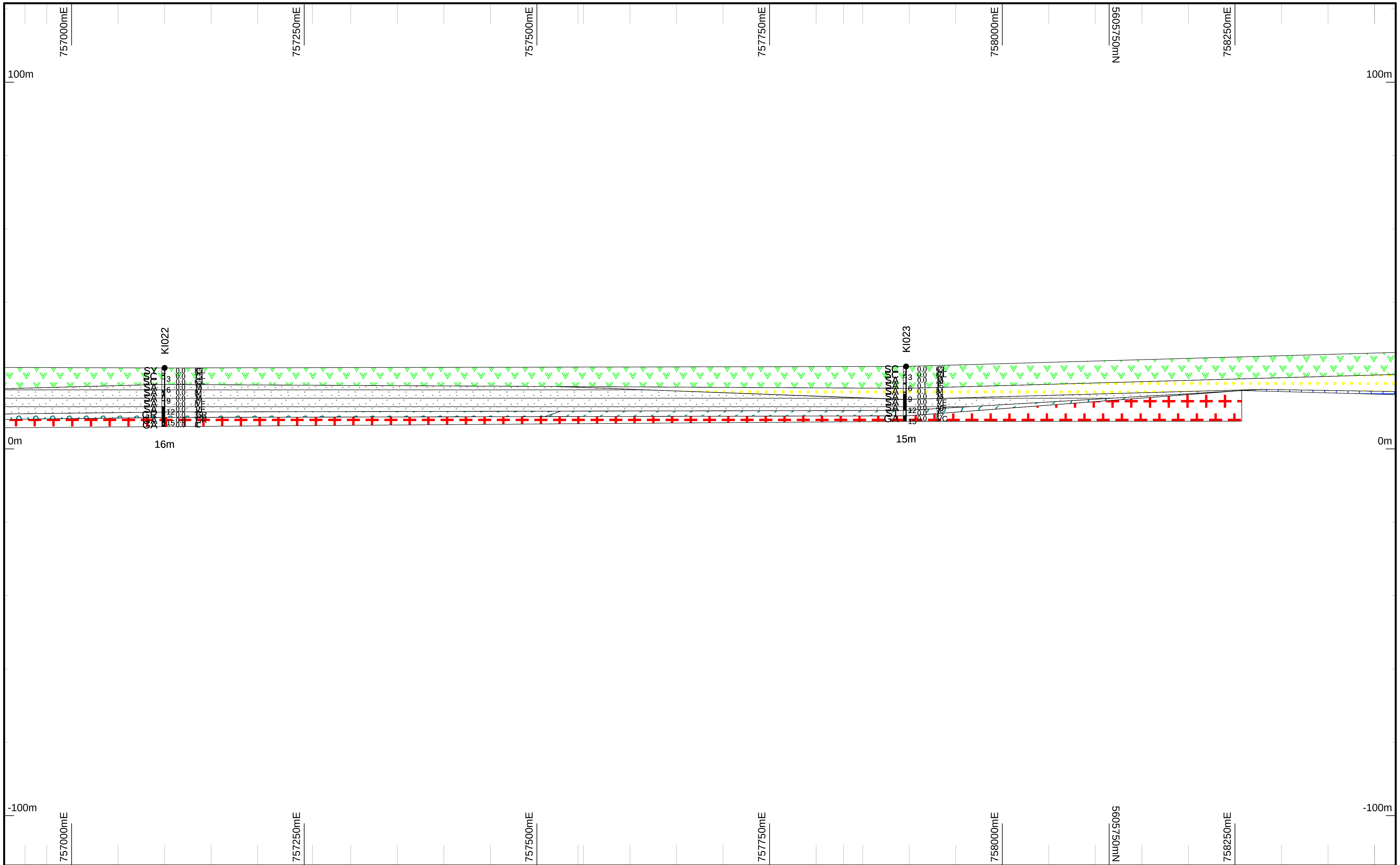
Plot Date	Sheet
22-Feb-2013	1 of 1

Plot File: Line 3D

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 3D



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
0 to 0.5	
0.5 to 1	
1 to 3	
3 to 10	
10 to 40	
>= 40	

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date
22-Feb-2013

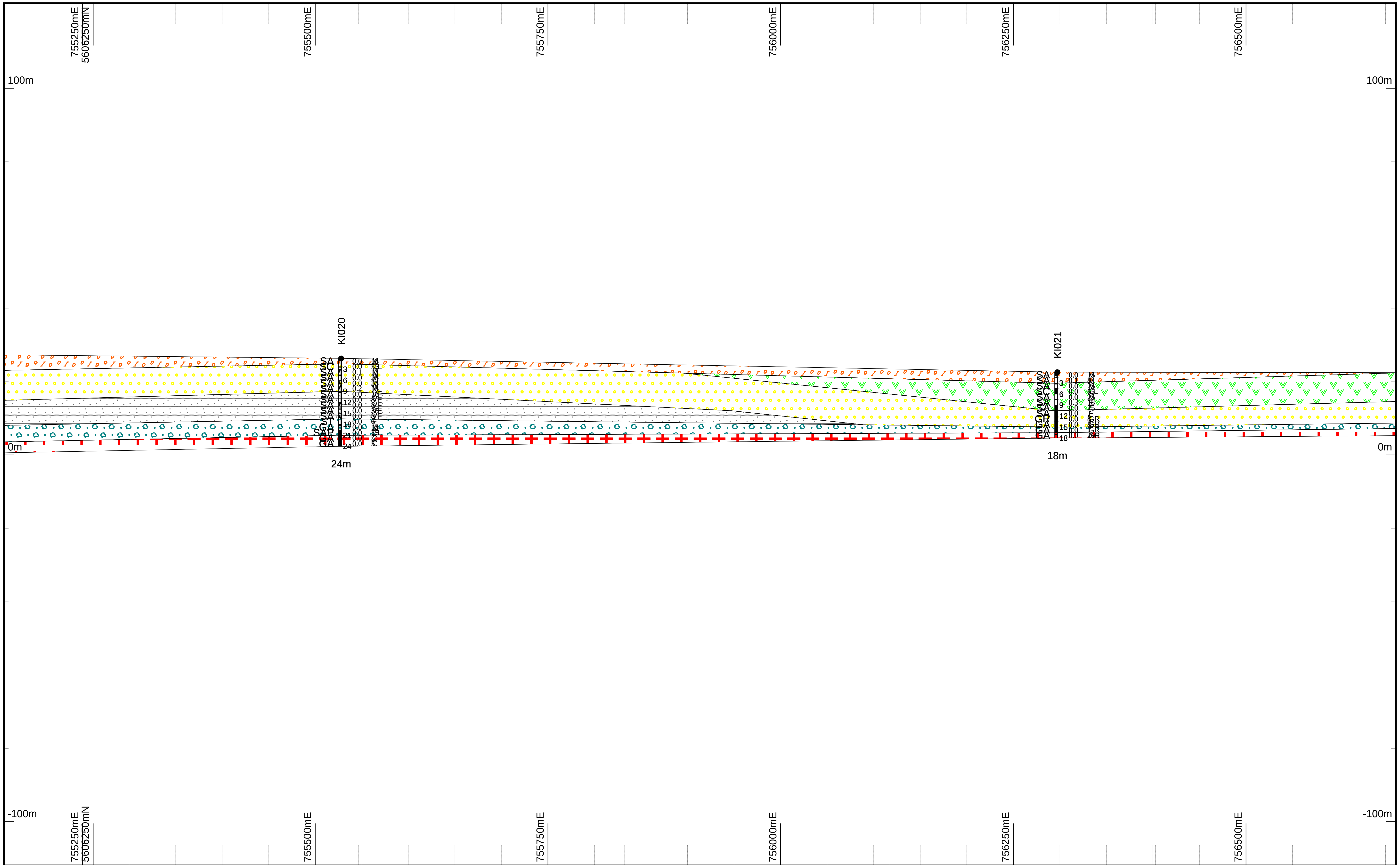
Sheet
1 of 1

Plot File: Line 3C

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 3C



Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
0 to 0.5	
0.5 to 1	
1 to 3	
3 to 10	
10 to 40	
>= 40	

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013

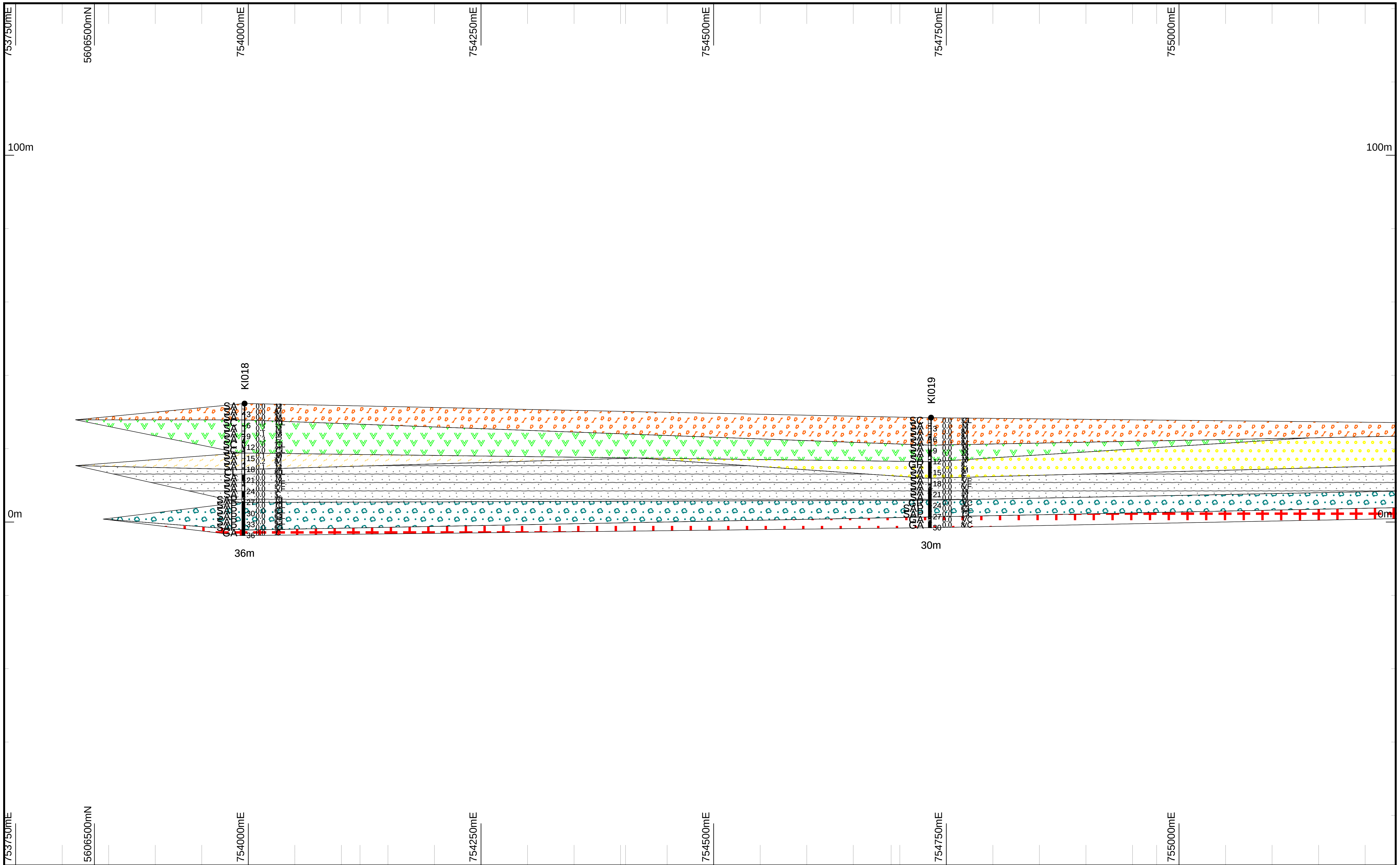
Sheet 1 of 1

Plot File: Line 3B

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 3B



ILUKA

Legend	
Dunal Sand	
Lagoonal/Fluvial Sands	
Possible FS Sand	
Esturine sand/clays	
Coarse Grained Beach Sand	
Limestone	
Saprolite	
Granite	
Schist	

Estimated/Actual HM%	Grainsize Sorting
0 to 0.5	VG
0.5 to 1	G
1 to 3	M
3 to 10	P
10 to 40	VP
>= 40	

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date 22-Feb-2013

Sheet 1 of 1

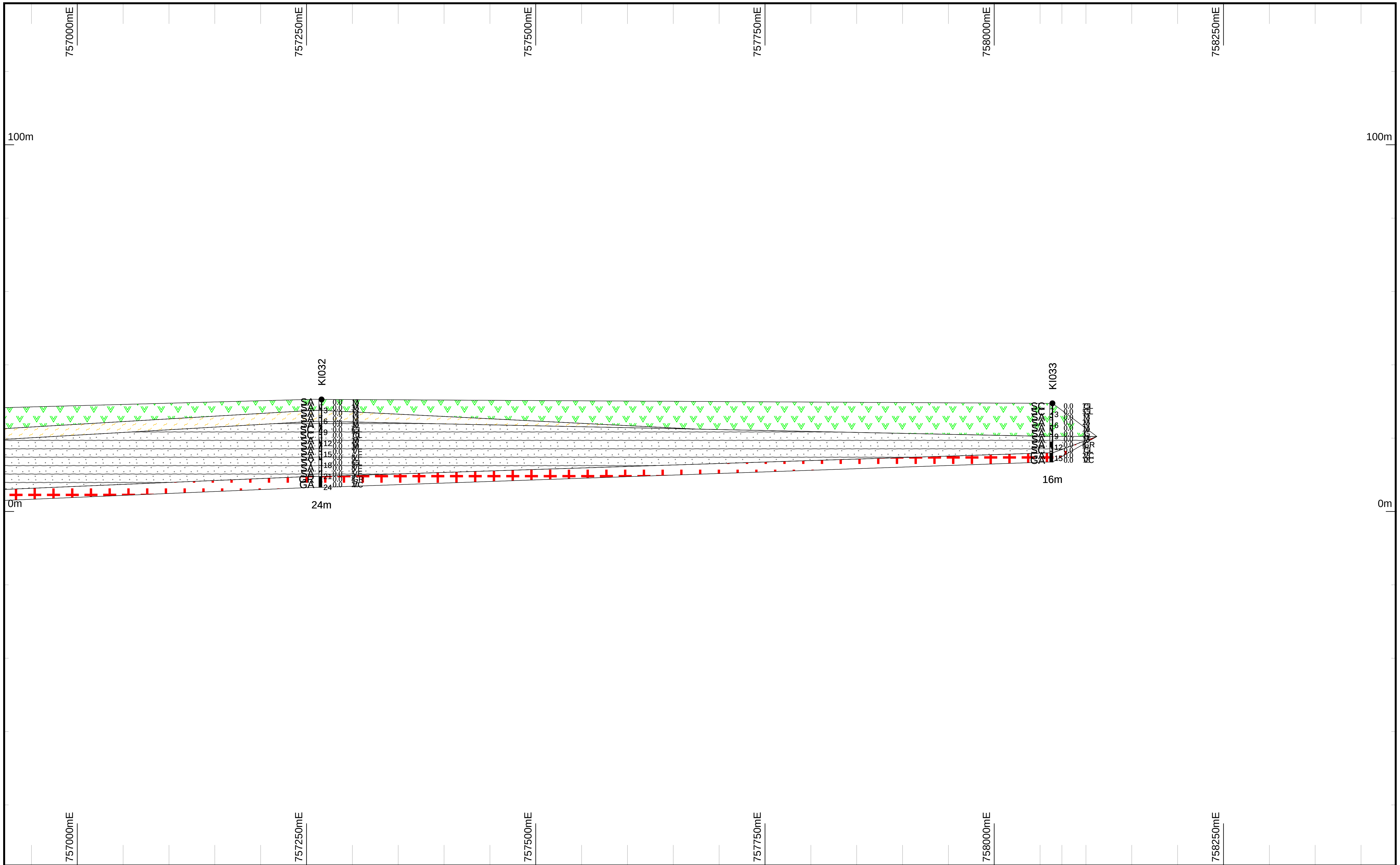
Plot File: Line 3A

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 3A

7.4 Line 4 Schematic Section



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
	0 to 0.5
	0.5 to 1
	1 to 3
	3 to 10
	10 to 40
	>= 40

Grainsize Sorting

VG
G
M
P
VP

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date
22-Feb-2013

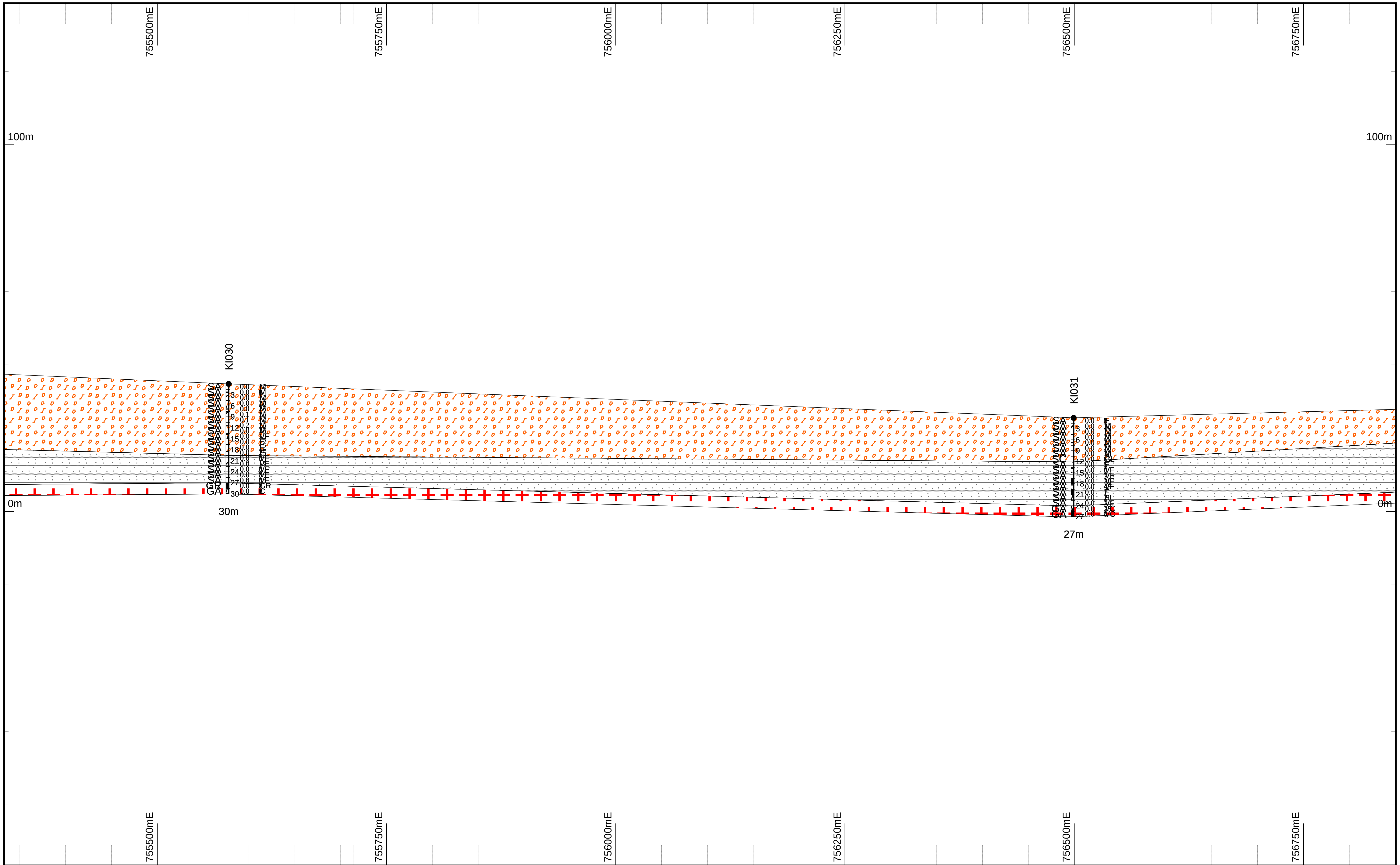
Sheet
1 of 1

Plot File: Line 4C

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 4C



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
0 to 0.5	
0.5 to 1	
1 to 3	
3 to 10	
10 to 40	
>= 40	

Grainsize Sorting	
VG	
G	
M	
P	
VP	

X Scale = 1 : 4000
Y Scale = 1 : 1000

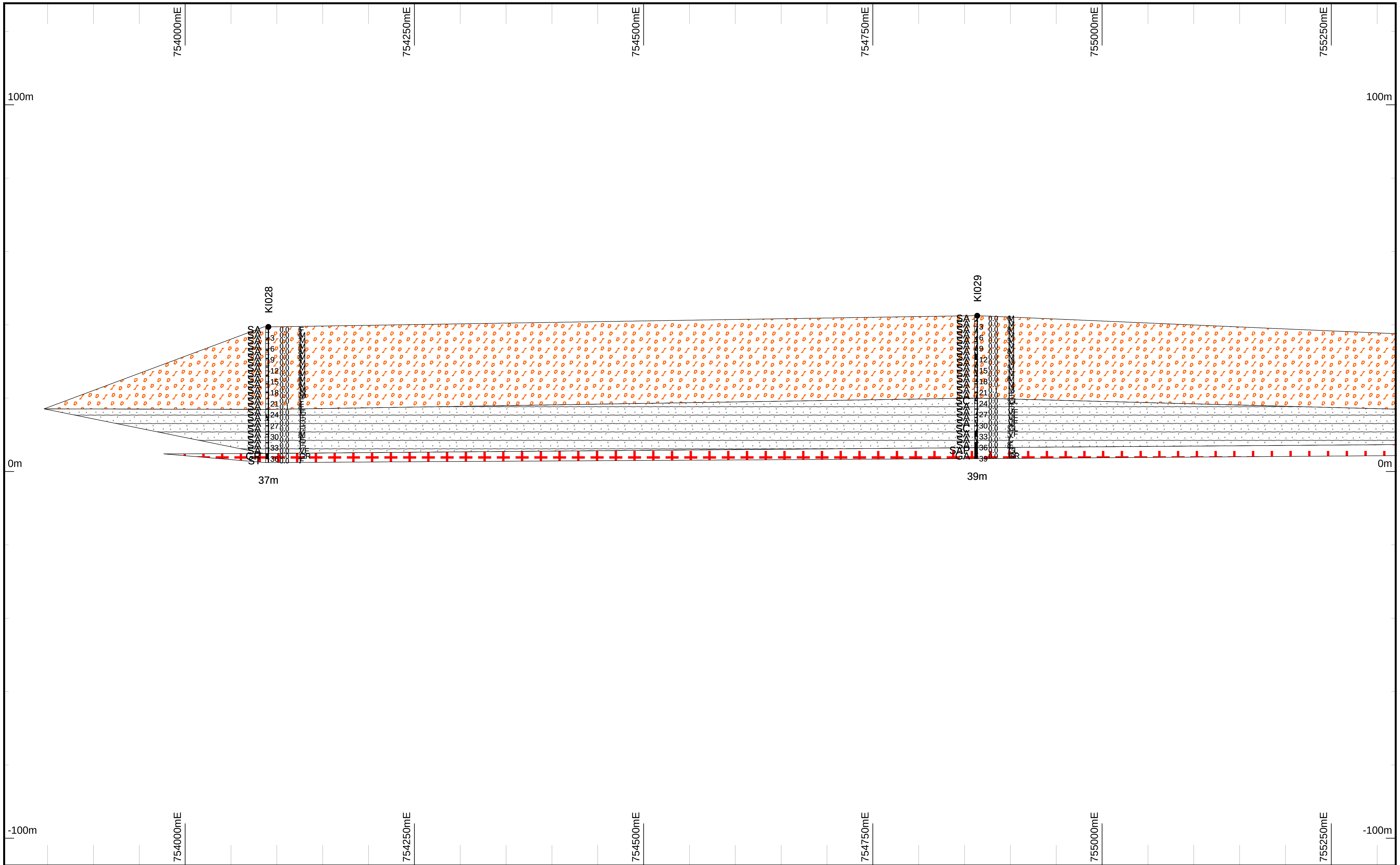
Plot Date	Sheet
22-Feb-2013	1 of 1

Plot File: Line 4B

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 4B



ILUKA

Dunal Sand
Lagoonal/Fluvial Sands
Possible FS Sand
Esturine sand/clays
Coarse Grained Beach Sand
Limestone
Saprolite
Granite
Schist

Estimated/Actual HM%	
0 to 0.5	
0.5 to 1	
1 to 3	
3 to 10	
10 to 40	
>= 40	

Grainsize Sorting
VG
G
M
P
VP

X Scale = 1 : 4000
Y Scale = 1 : 1000

Plot Date
22-Feb-2013

Sheet
1 of 1

Plot File: Line 4A

0 50 100m

LHS: Lithology
RHS: Estimate HM%
RHS: Estimated Slimes
RHS: Dominant Grainsize
RHS:Actual HM%
RHS:Actual SLIMES
Hatch: Sorting

King Island
Geological Cross Section
Line 4A

7.5 Appendix II. Iluka Drill Logging Codes

FROM/TO
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.0
etc, to 200.0

AS	
Y	YES - HM ASSAY
N	NO - HM ASSAY
M	MULTI ELEMENT
YM	HM & MULTI ELEMENT ASSAY
D	DUPLICATE
3P	STANDARD
7P	STANDARD
AG1	STANDARD
AG2	STANDARD
C4	STANDARD
D10	STANDARD
E3	STANDARD
F12	STANDARD
HG1	STANDARD
HG2	STANDARD
MW3	STANDARD
MW4	STANDARD
SW1	STANDARD
SW2	STANDARD

WA	
IM	IMPOSSIBLE
VD	VERY DIFFICULT
MD	MODERATELY DIFFICULT
MD	MODERATE
ME	MODERATELY EASY
VE	VERY EASY

SAMP_QUAL	
G	GOOD
M	MODERATE
P	POOR

WATER	
D	DRY
M	MOIST
W	WET
I	INJECTED

IND	
FE	FERRUGINOUS INDURATION
SI	SILICEOUS INDURATION
CC	CALCAREOUS INDURATION
PY	PYRITIC INDURATION

Add a third letter prefix - D = dark, L= light, for full description

CO	
BK	BLACK
BL	BLUE
BR	BROWN
BB	BROWN-BLACK
BC	BROWN-CREAM
BO	BROWN-ORANGE
BW	BROWN-WHITE
BY	BROWN-YELLOW
BU	BUFF
CR	CREAM
CO	CREAM-ORANGE
GN	GREEN
NB	GREEN-BROWN
NY	GREEN-YELLOW
GR	GREY
GK	GREY-BLACK
GB	GREY-BROWN
GC	GREY-CREAM
GG	GREY-GREEN
GO	GREY-ORANGE
GP	GREY-PINK
GD	GREY-RED
GW	GREY-WHITE
GY	GREY-YELLOW
KH	KHARKI
MU	MUSTARD
OR	ORANGE
OB	ORANGE-BROWN
OW	ORANGE-WHITE
OY	ORANGE-YELLOW
PI	PINK
PB	PINK BROWN
PC	PINK-CREAM
PO	PINK-ORANGE
PW	PINK-WHITE
PU	PURPLE
RC	RED-CREAM
RE	RED
RK	RED-BLACK
RB	RED-BROWN
RO	RED-ORANGE
RP	RED-PINK
RW	RED-WHITE

CO	
RY	RED-YELLOW
WH	WHITE
WC	WHITE-CREAM
YE	YELLOW
YB	YELLOW-BROWN
YG	YELLOW-GREEN
YO	YELLOW-ORANGE
YR	YELLOW-RED
YW	YELLOW-WHITE

DGS / CGS	
CL	CLAY
SI	SILT
VF	VERY FINE
F	FINE
M	MEDIUM
C	COARSE
VC	VERY COARSE
GR	GRIT
PB	PEBBLE

SO	
VG	VERY GOOD
G	GOOD
M	MODERATE
P	POOR
VP	VERY POOR

LINK	
TO	TO
AN	AND

H	
1	VERY SOFT
2	SOFT
3	MEDIUM
4	HARD
5	VERY HARD

E_IND & E_HM
See From/To

LI1 / LI2	
BA	BASALT
CA	CALCRETE
CL	CLAY
CT	CLAY STONE
YS	CLAY-SILT
CS	CLAYEY SAND
CO	COAL
CG	CONGLOMERATE
DO	DOLOMITE
GA	GRANITE
GR	GRAVEL
GY	GYPSUM
HM	HEAVY MINERAL
IC	INDURATED CLAY
IR	IRONSTONE
LA	LATERITE
LI	LIMESTONE
LS	LOMESAND
LC	LOST CORE
MU	MUDSTONE
PY	PYRITE
QU	QUARTZ
RK	ROCK UNKNOWN
SA	SAND
SS	SANDSTONE
SC	SANDY CLAY
SAP	SAPROLITE
ST	SCHIST
SH	SHALE
SE	SILCRETE
SI	SILT
SIS	SILTSTONE
SD	SILTY-SAND
SY	SILTY-CLAY
SYS	SILTY-CLAY-SAND
SDY	SILTY-SANDY-CLAY
SL	SLATE
SLM	SLIME
SO	SOIL

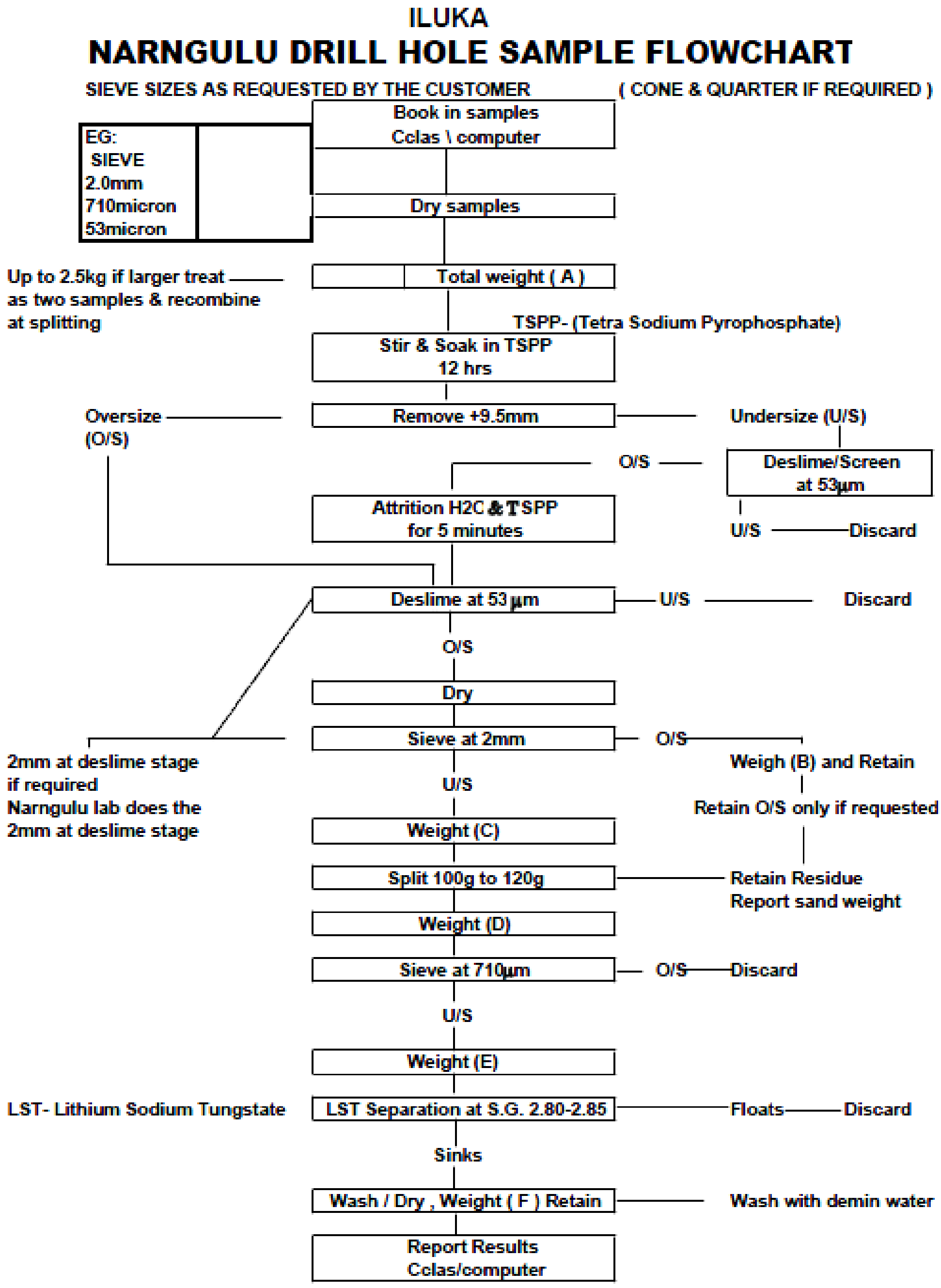
E_SL
See From/TO

HMGS	
F	FINE
VF	VERY FINE
FM	FINE-MEDIUM
M	MEDIUM
MC	MEDIUM-COARSE
C	COARSE
VC	VERY COARSE

FM	
TFS	TOP OF FORESHORE
TLS	TOP OF LOWERSHORE
TSZ	TOP OF SURFZONE
TLI	TOP OF LIMESTONE
DU	DUNAL
WT	TOP OF WATER TABLE

QU	
AT	ABUNDANT BLACK TRASH
CB	CARBONACEOUS
CT	COMMON BLACK TRASH
FE	FERRUGINOUS
LA	LATERITIC
MI	MICACEOUS
MO	MOTTLED
MT	MINOR BLACK TRASH
OX	OXIDISED
PY	PYRITIC
WE	WEATHERED
SI	SILICEOUS
CC	CALCAREOUS
CE	CARBONATE
GY	GYPSUM
OR	ORGANIC
ALF	ABUNDANT LATERITIC FINES
CLF	COMMON LATERITIC FINES
MLF	MINOR LATERITIC FINES
BM	BASEMENT
TL	TAILINGS
SL	SLIMES
CV	CAVEN

7.6 Method I Flow Sheet



7.7 Drill Hole Rehabilitation Photos

KI033- Before Drilling

KI033- During Drilling


WALLIS
D 12

KI033- After Drilling

7.8 Table Verification Listing

YAMBA_TASSL4_COLL2013S.txt	TASSL4
YAMBA_TASDL4_GEO2013S.txt	TASDL4
YAMBA_TASDG4_ASS2013S.txt	TASDG