

Annual Report 2013 - 2014 for EL25/2008

APPENDIX 2

JORC compliant inferred coal resource assessment of EL25 & EL26/2008
(B.R. Senior & Associates, Feb 2014)

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**PROGRESS REPORT OF GAMMA RAY LOGGING OF COAL EXPLORATION
DRILL HOLES IN THE MOUNT ANSTEY, JERICHO AND RINGWOOD CREEK
AREAS, ELs 25/2008 (Melton Mowbray) & 26/2008 (Lake Tiberius) TASMANIA.**

Prepared on behalf of

South East Asia Energy Resources

By

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8th January 2014.

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Summary

Gamma ray logging of coal exploration drill holes was undertaken to assist correlation of coal seams between relatively widely spaced drill holes in the Mt Anstey, Jericho and Ringwood Creek areas within EL 25/2008 (Melton Mowbray) & EL 25/2009 (Lake Tiberius). This work was undertaken in the period December 2nd to 4th 2013. Eighteen PVC lined drill holes were attempted and 598m of gamma ray logs were obtained. These logs were integrated with drill hole lithological data and the composite logs will be used to compile geological cross sections which will be used to further refine identification of potentially economic coal resources in these tenements.

1. Gamma Ray Logging.

Gamma ray logs were obtained from PVC lined coal exploration drill holes in EL 25/2008 (Melton Mowbray) and EL 25/2009 (Lake Tiberius) during the period 2nd to the 4th of December 2013. Eighteen PVC lined drill holes and 598m of gamma ray logs were recorded from the potentially available 789m drill length total. None of the drill holes were logged to total depth and generally all the holes were blocked at a depth of about two thirds from the surface. The drill holes are located in Figure 1 and the drilling details and gamma ray logging depths are listed in Table 1.

The specifications of the gamma ray logging equipment are given in Appendix 1 and the process of logging from a 4WD tray back vehicle is shown in Photo 1. All of the holes contained groundwater and mud. The method used was to lower the gamma probe to the depth at which each drill hole was blocked and then the log was obtained by logging upwards at a constant speed of 3m/minute. Data were recorded at 5cm intervals by the Digital Logging System and through use of AUSWIN 2.22 software displayed on the monitor of a laptop computer. In the office, the gamma logs were produced at a scale of 1:400 (10 metres = 25mm) in MapInfo and reproduced together with generalised lithological logs. Composite logs for each drill hole are reproduced in Figures 5 to 22.

2. Discussion.

This logging follows an earlier gamma ray logging program which demonstrated that this type of geophysical logging would greatly assist correlation of the coal measure sequence between the relatively widely-spaced coal exploration holes. The next step will involve the construction of geological cross sections to 'firm up' knowledge of the distribution of potential resources in the coal resource blocks (Figs 2, 3 & 4) identified by Senior (2013). A final report will be produced at the end of this process.

3. Reference.

SENIOR, B.R., 2013- Inferred and Inventory coal resources in the Mt Anstey, Jericho and Ringwood Creek areas, ELs 25/2008 (Melton Mowbray) & 26/2008 (Lake Tiberius), Tasmania. *South East Asia Energy Resources* (unpubl).

Table 1. Drilling and gamma ray logging details.

Hole ID	Easting	Northing	Elevation	Licence	Drill Method	Hole depth	Gamma Ray Log depth
OJ009	524250	5308999	386	EL25/2008	Diamond	59.55	44
OJ010	524919	5308789	390	EL25/2008	Diamond	52.6	30
OJ011	525417	5305194	401	EL26/2008	Diamond	41.3	10
OJ012	525599	5301094	437	EL26/2008	Diamond	41.45	32
OJ013	525704	5315433	351	EL26/2008	Diamond	65.4	49
OJ014	525337	5315026	371	EL26/2008	Diamond	60.6	46
OJ015	525713	5305590	404	EL26/2008	Diamond	48.58	38
OJ016	525313	5314279	389	EL26/2008	Diamond	51.48	39
OJ017	525520	5313550	389	EL26/2008	Diamond	60.33	44
OJ018	526577	5308563	404	EL26/2008	Diamond	54.71	21
OJ019	523899	5310113	399	EL25/2008	Diamond	60	23
OJ020	522069	5311626	357	EL26/2008	Diamond	54.71	41
OJ021	525685	5300302	446	EL26/2008	Open hole	60	45
OJ022	525689	5300501	445	EL26/2008	Open hole	44	31
OJ023	524035	5306916	392	EL25/2008	Open hole	43	29
OJ024	523815	5311193	395	EL26/2008	Open hole	31	23
OJ025	523903	5313462	375	EL26/2008	Open hole	33	24
OJ026	524337	5315462	350	EL26/2008	Open hole	10	Not logged, hole collapsed
OJ027	524376	5315597	352	EL26/2008	Open hole	2	Not logged, hole collapsed
OJ028	524327	5315437	358	EL26/2008	Diamond	42.22	29
OJ029	525759	5302647	439	EL26/2008	Diamond	32.75	Not logged, dolerite to EOH.



Photo 1. Gamma ray logging in progress. Vehicle is situated on a low fault terrace that delineates the west margin of a graben that contains the coal measure sequence. The flat surface at a lower elevation behind the vehicle, is underlain by these coal measures which extend towards the trees and poppy fields in the far distance. This drill hole should have been located about 50m further east, on the edge of the flat plain, where it would have intersected the full thickness of coal measures.

Fig. 2. Mt Anstey Area geology, coal block identification and estimate of inferred coal resources

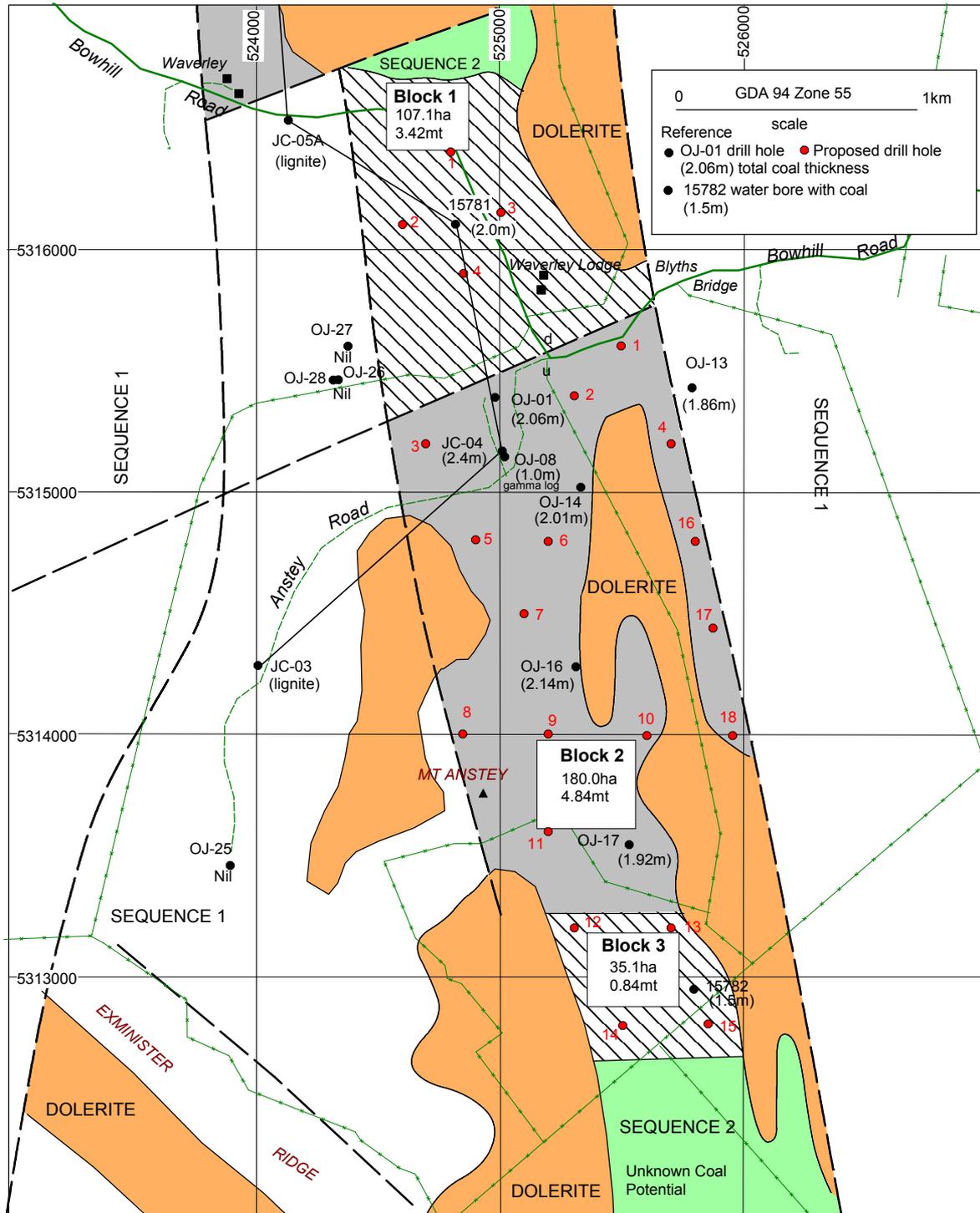


Fig. 3. Jericho Area geology, coal block identification and estimate of inferred coal resources

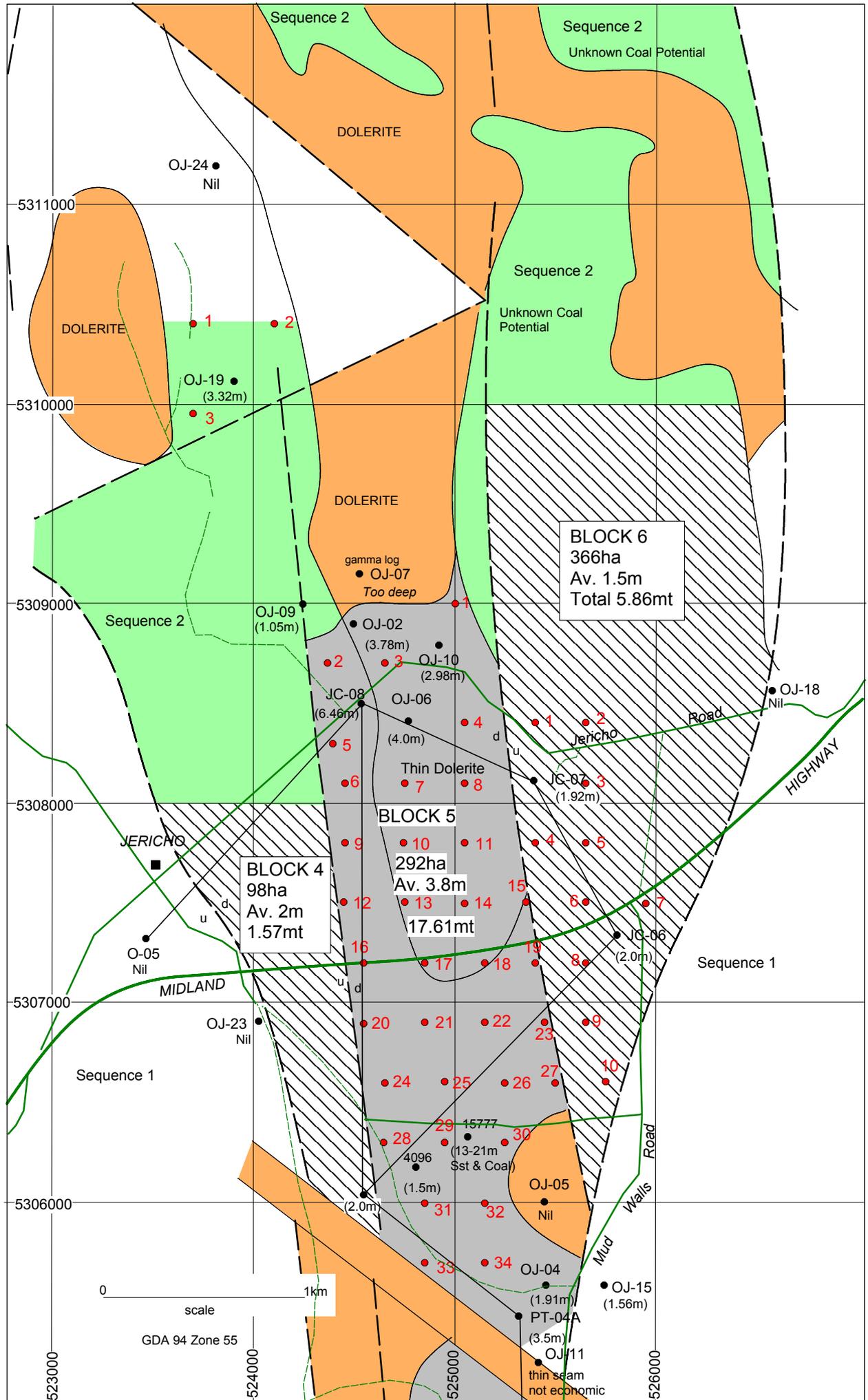
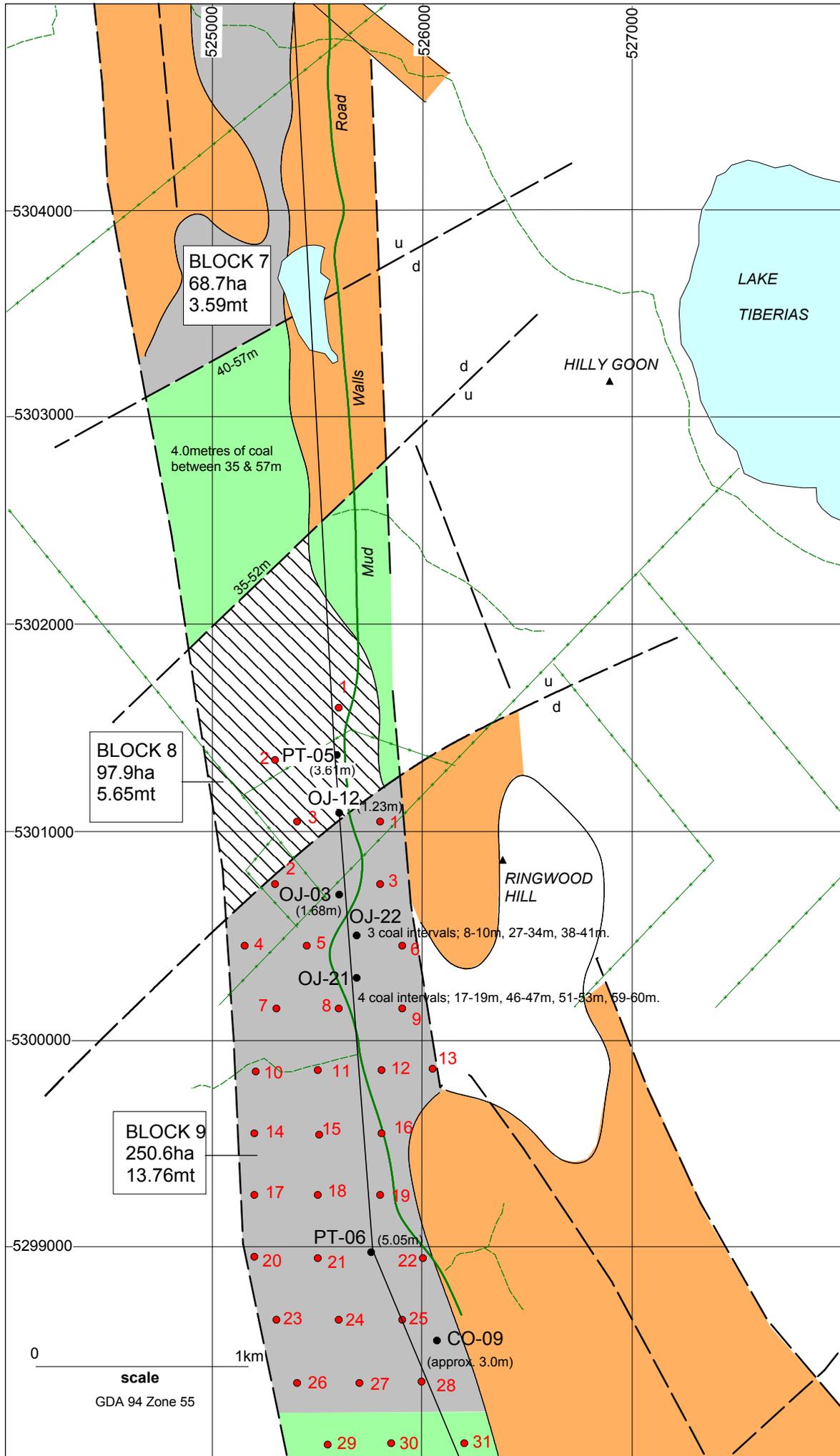
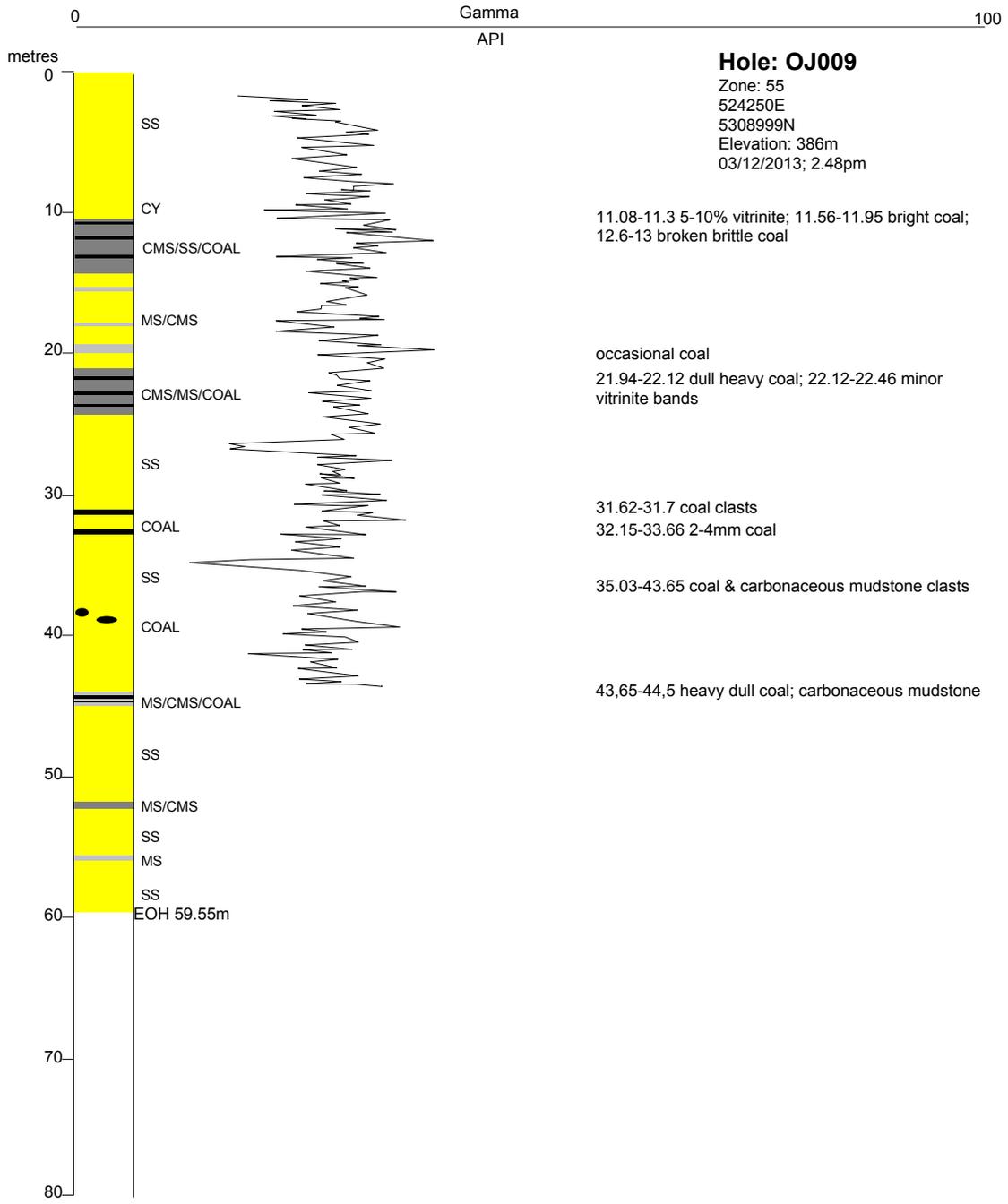
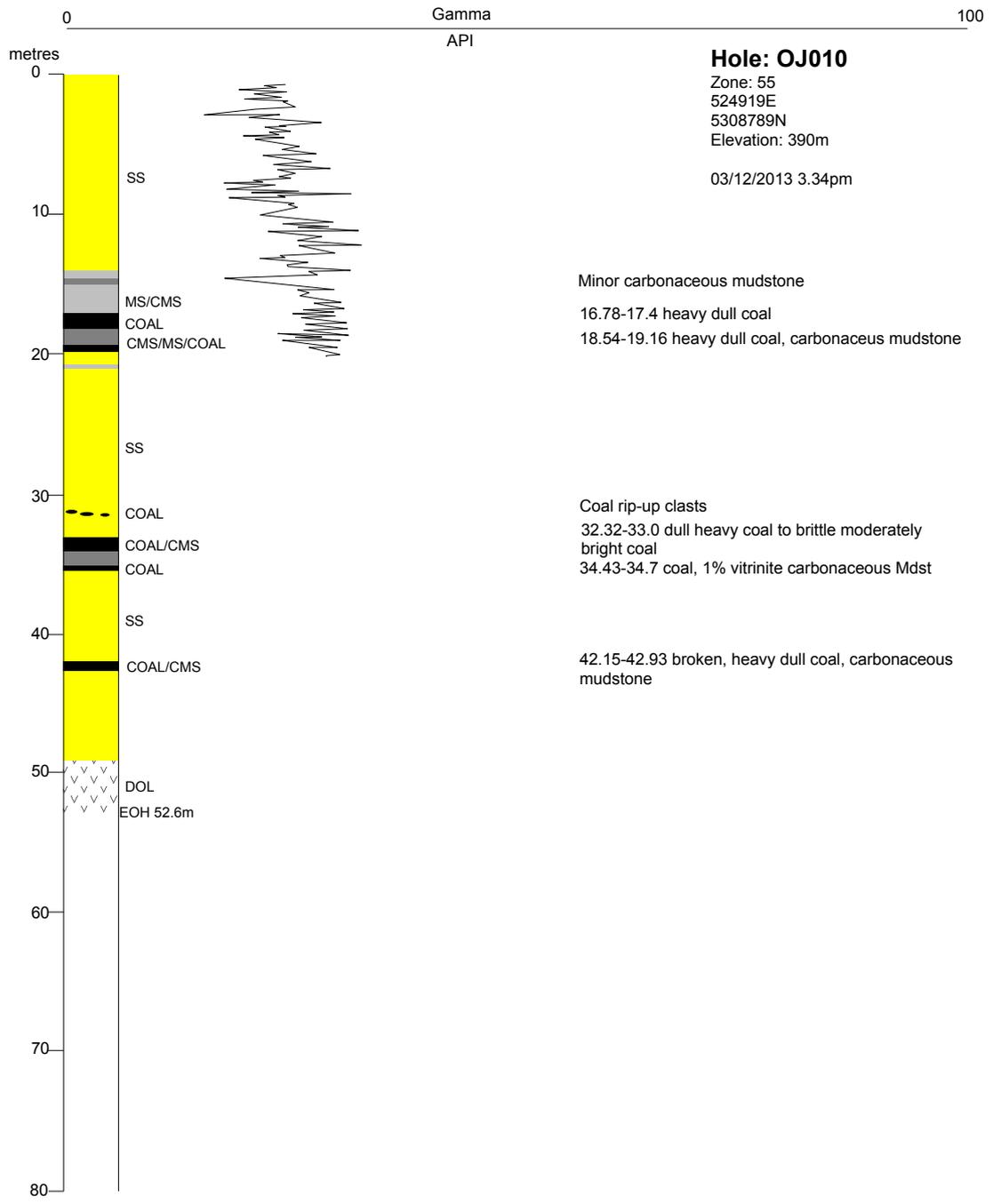


Fig. 4. Ringwood Creek Area geology, coal block identification and estimate of inferred coal resources







0

Gamma
API

100

metres

0

SS

10

MS

CMS

20

SS

CMS/COAL

30

SS

40

MS

41.3m EOH

50

60

70

80

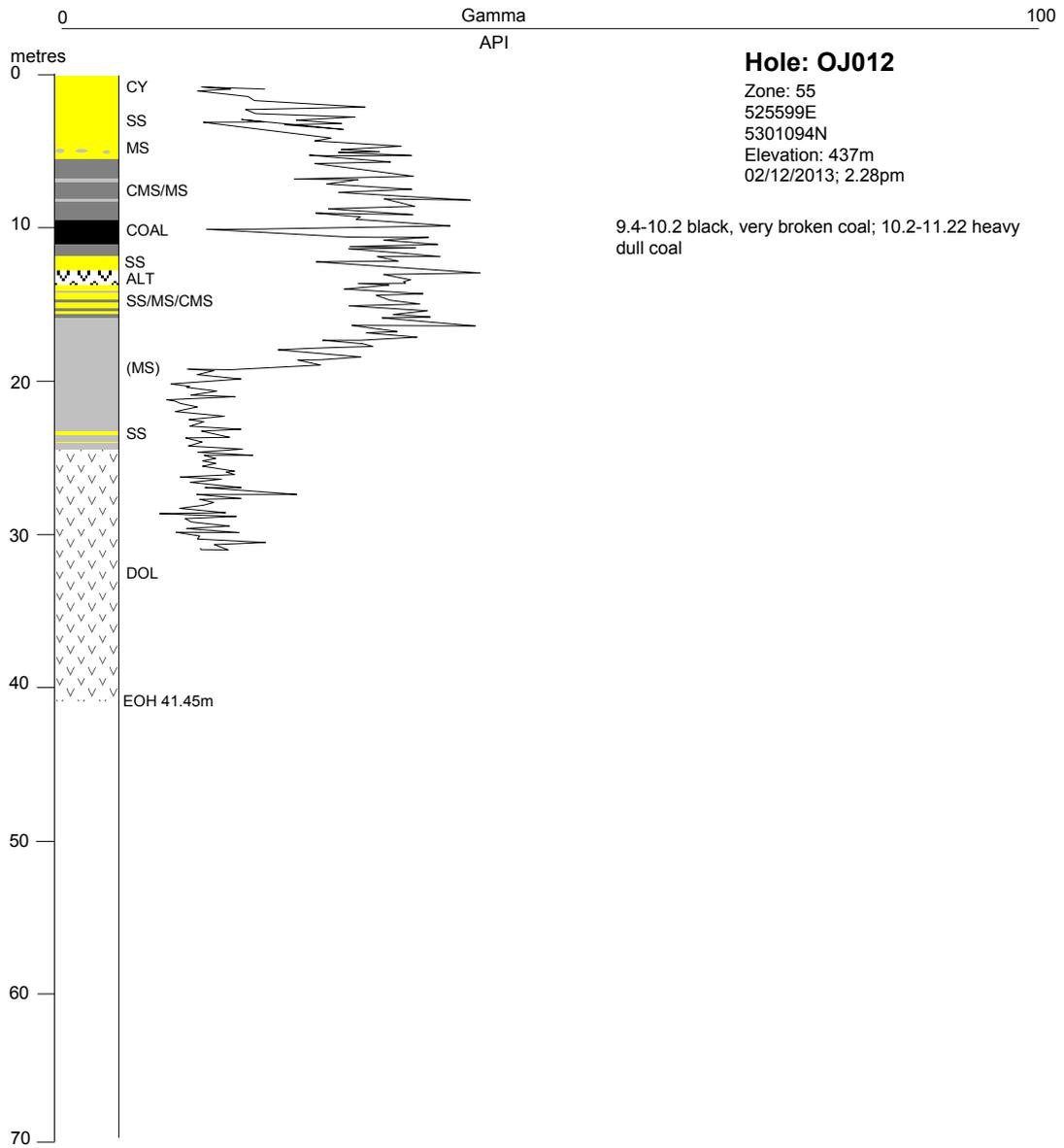


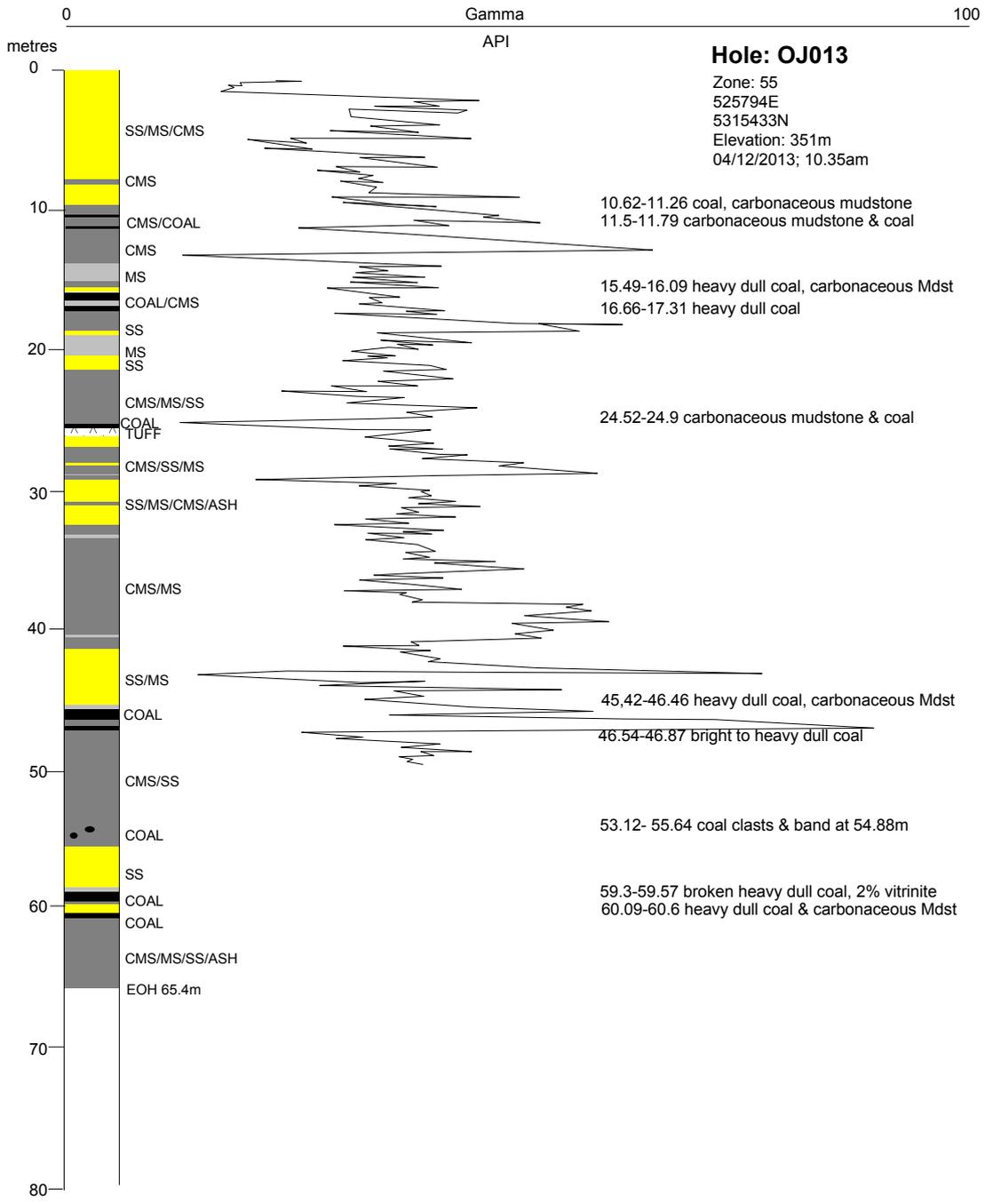
Hole:OJ011

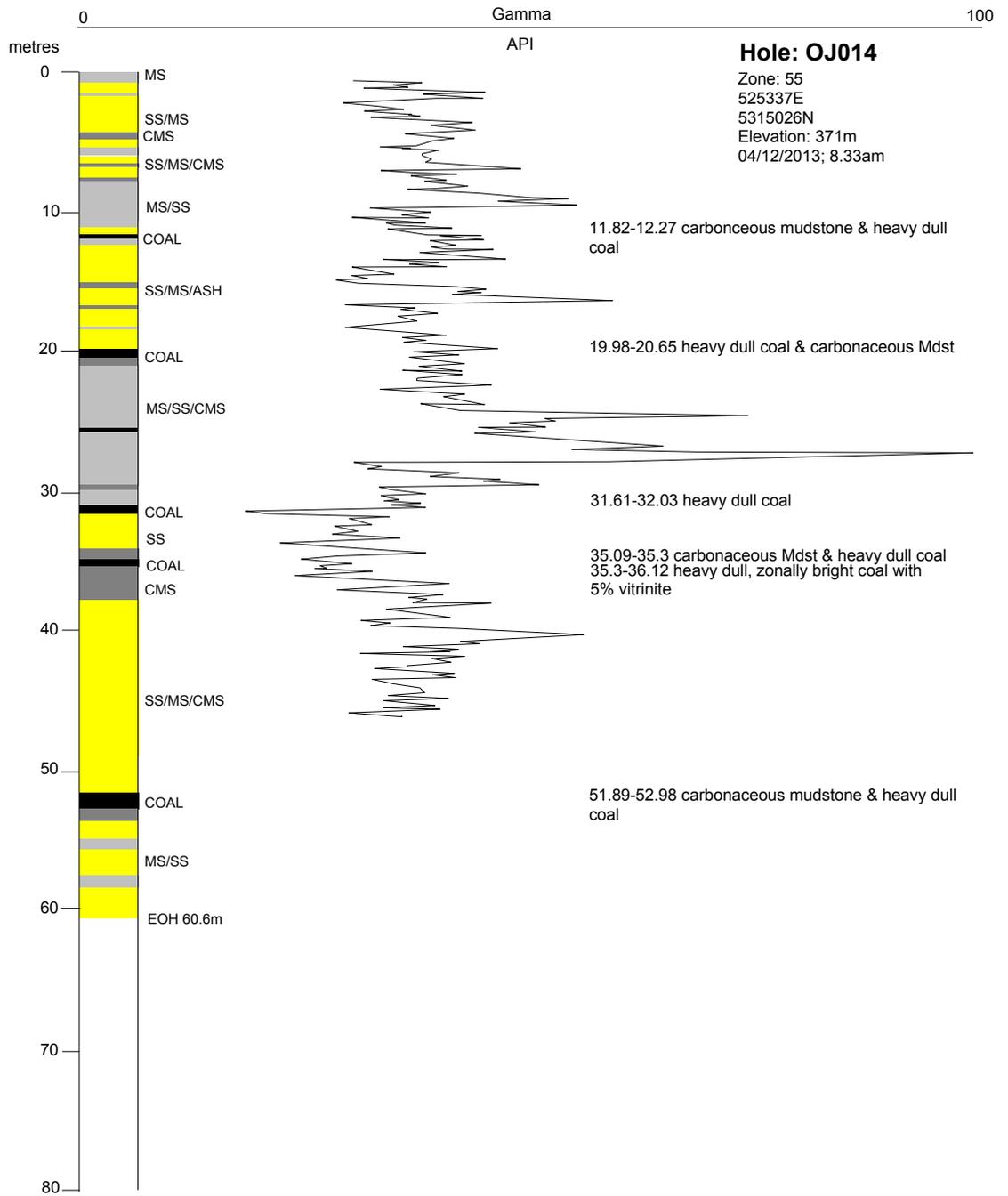
Zone: 55
525417E
5305194N
Elevation: 401m

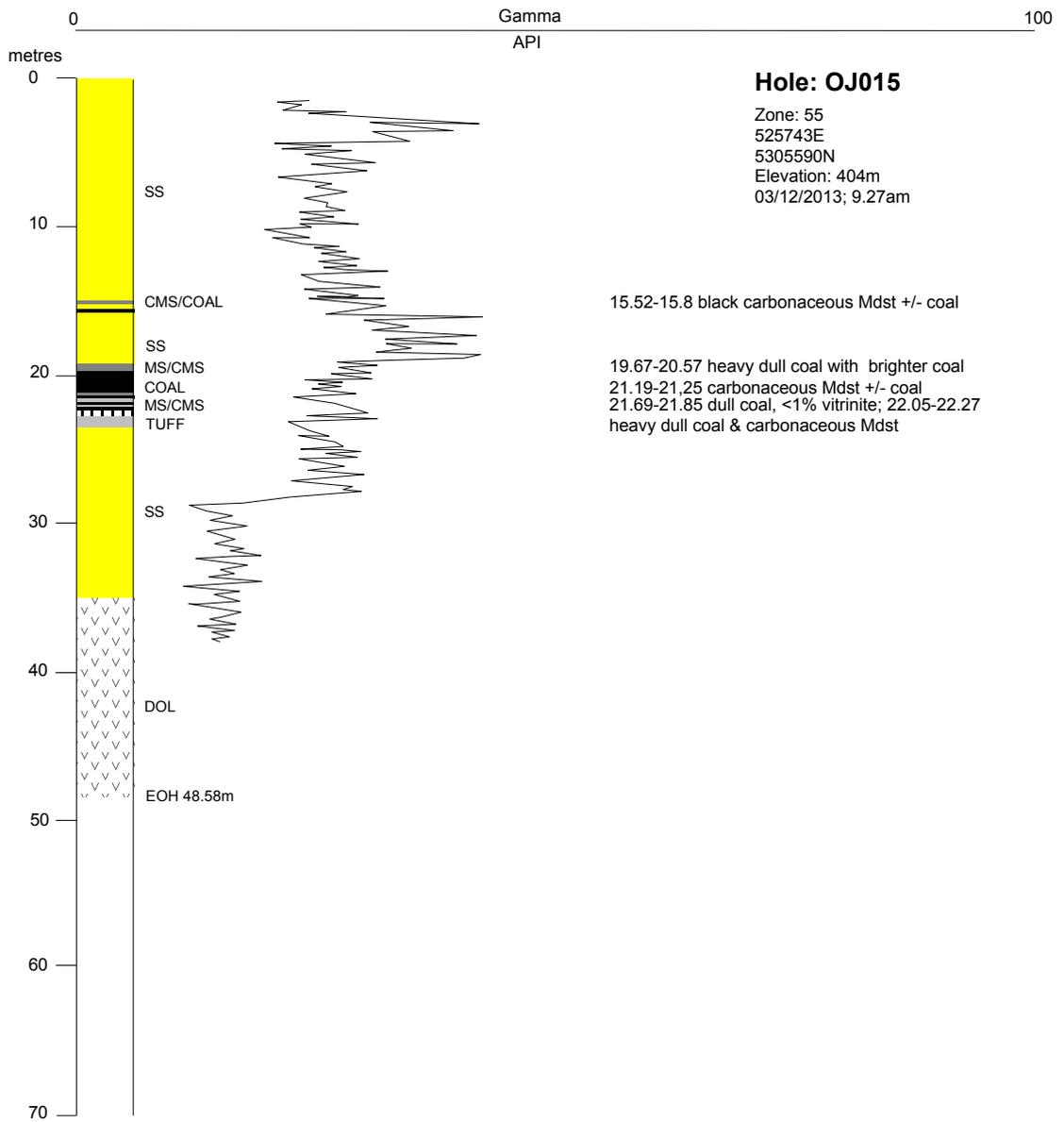
03/12/2013; 8.44am

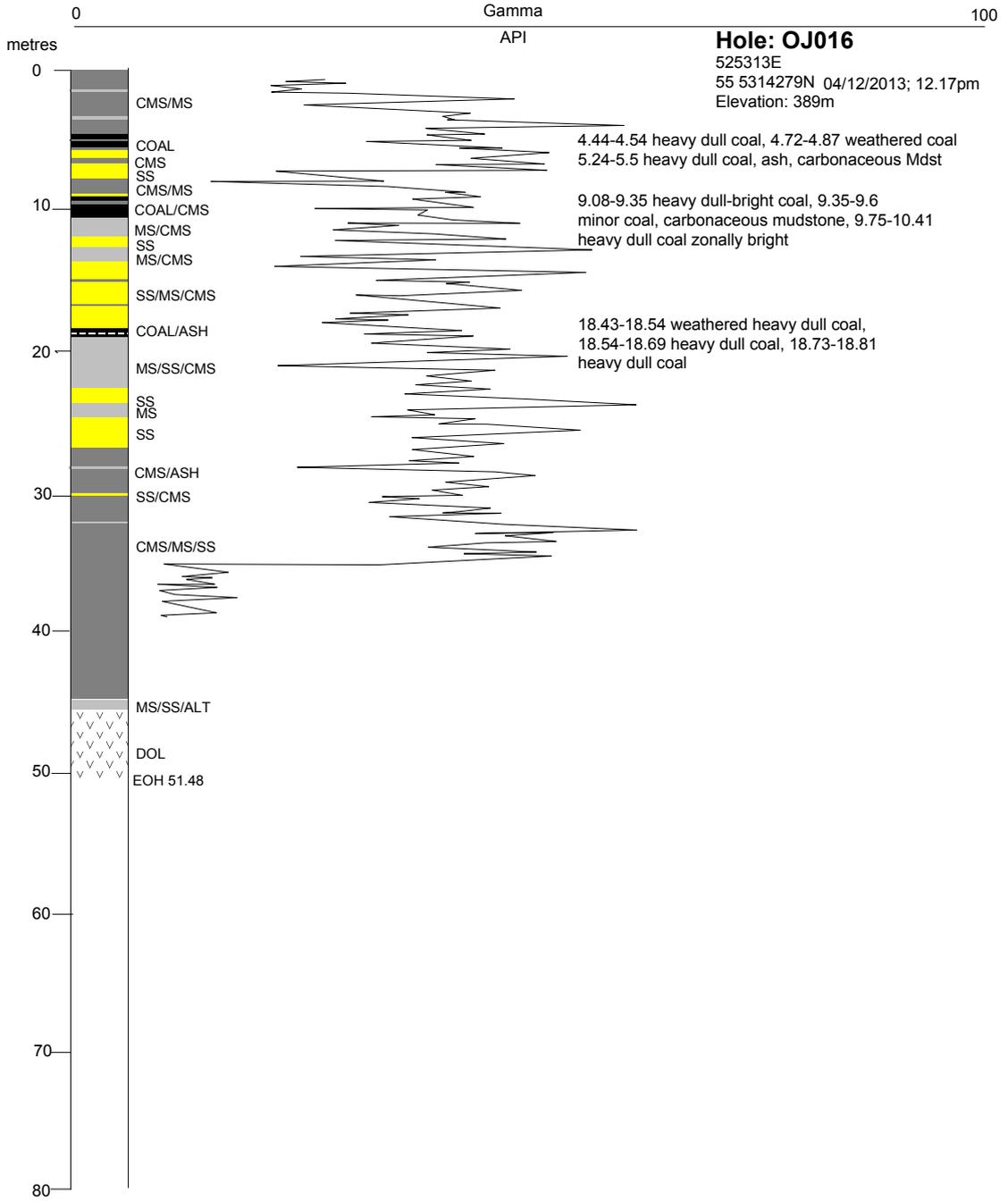
24.42-24.57m black carbonaceous mudstone
+/- coal

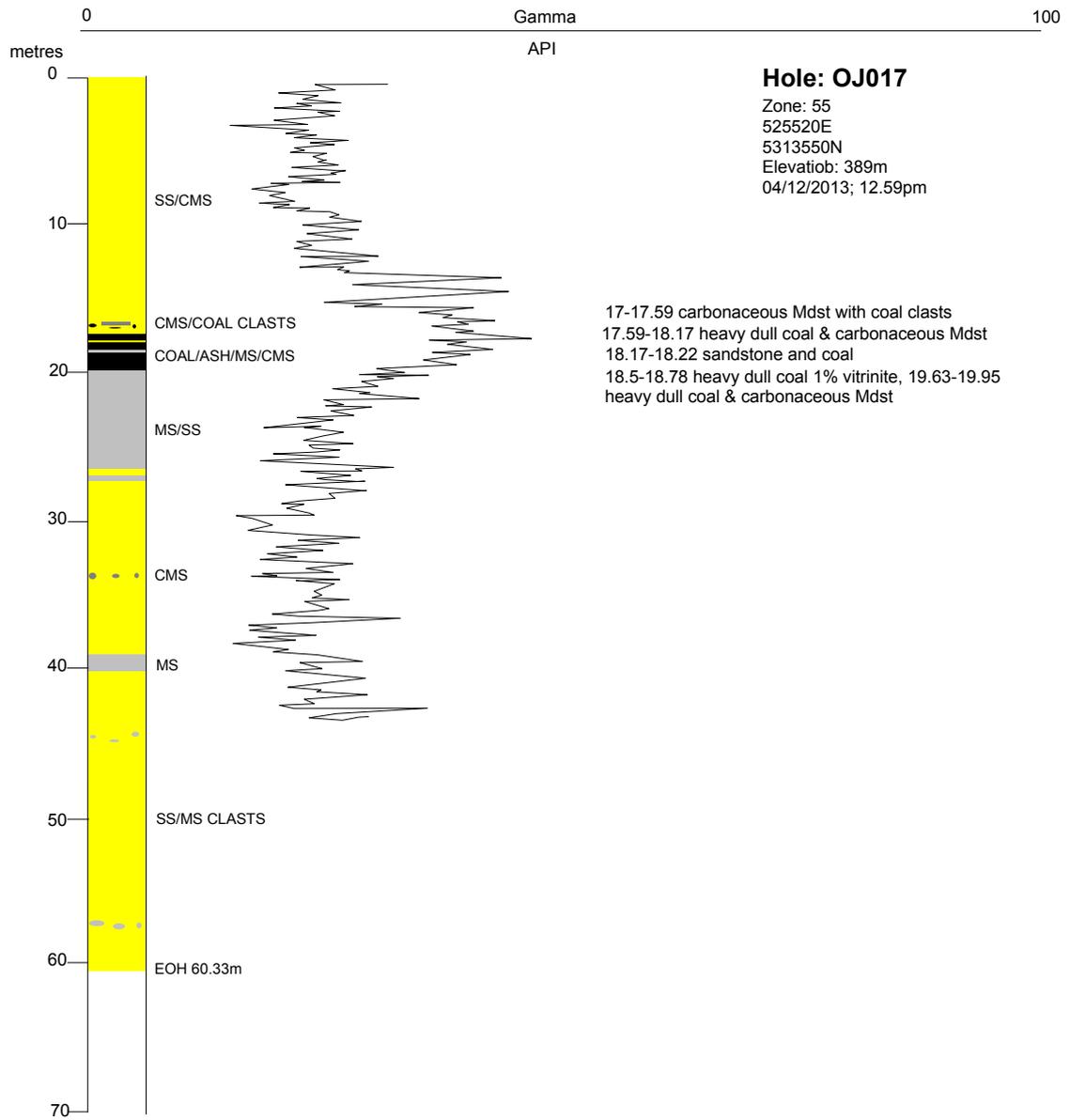








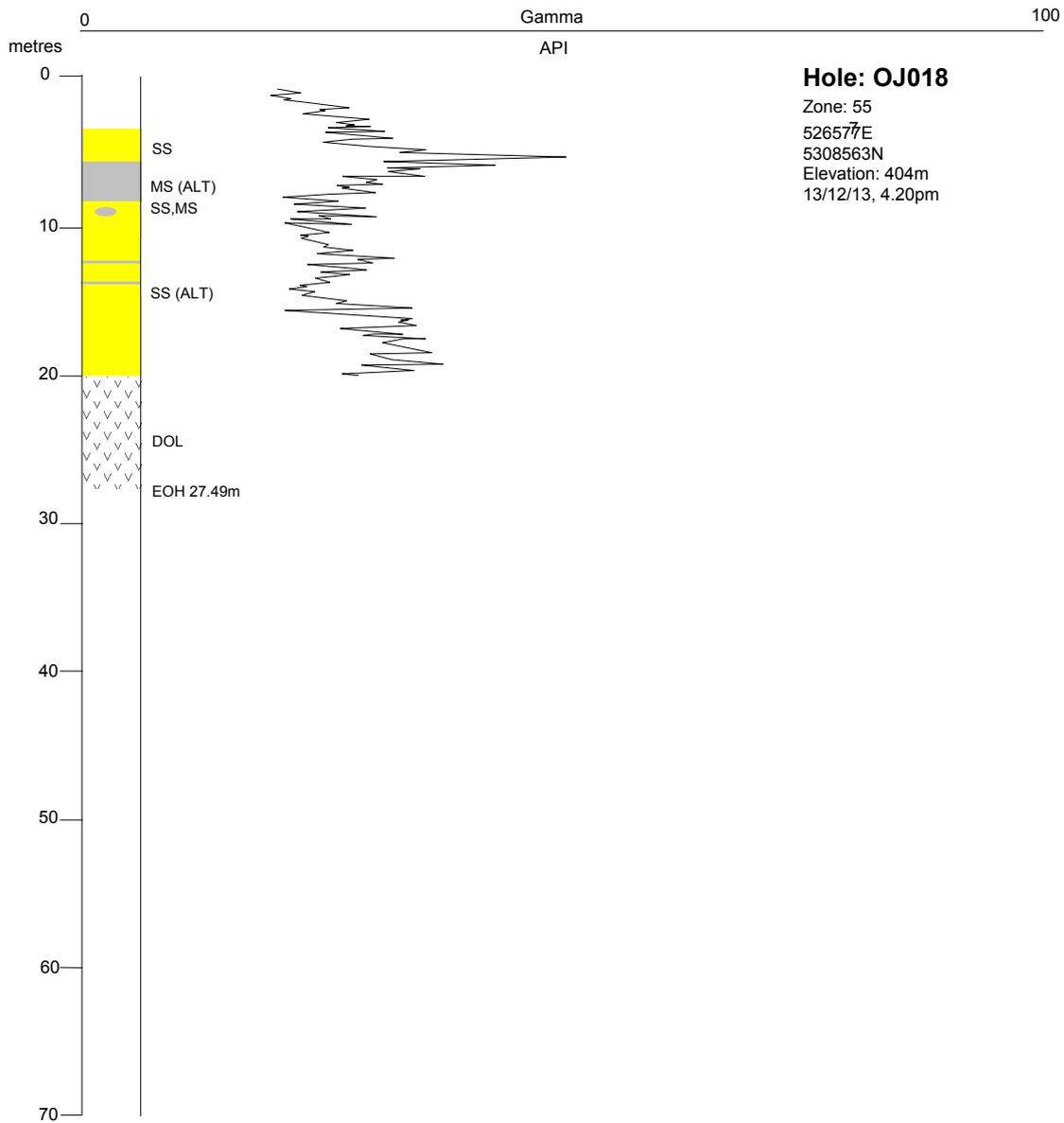


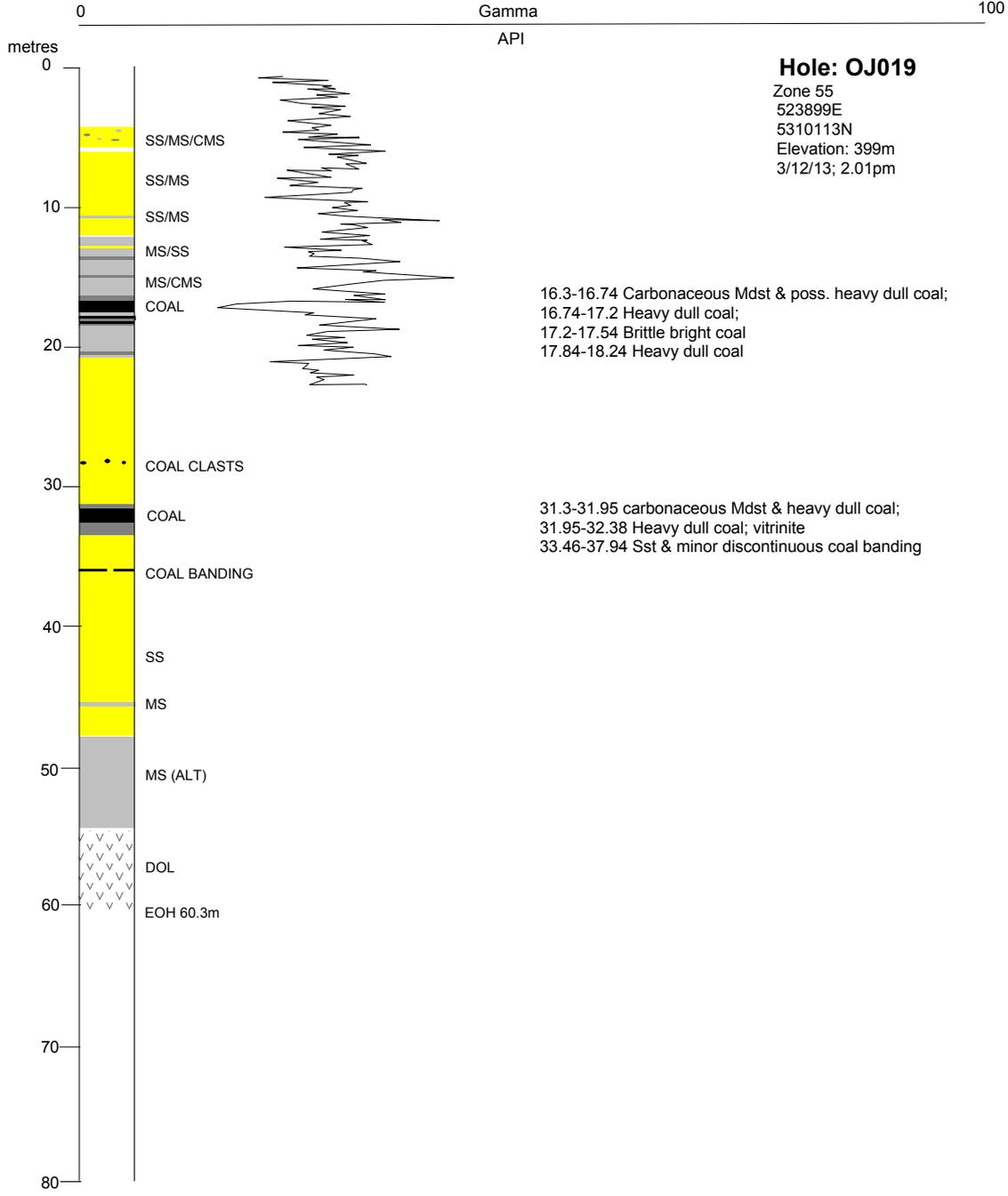


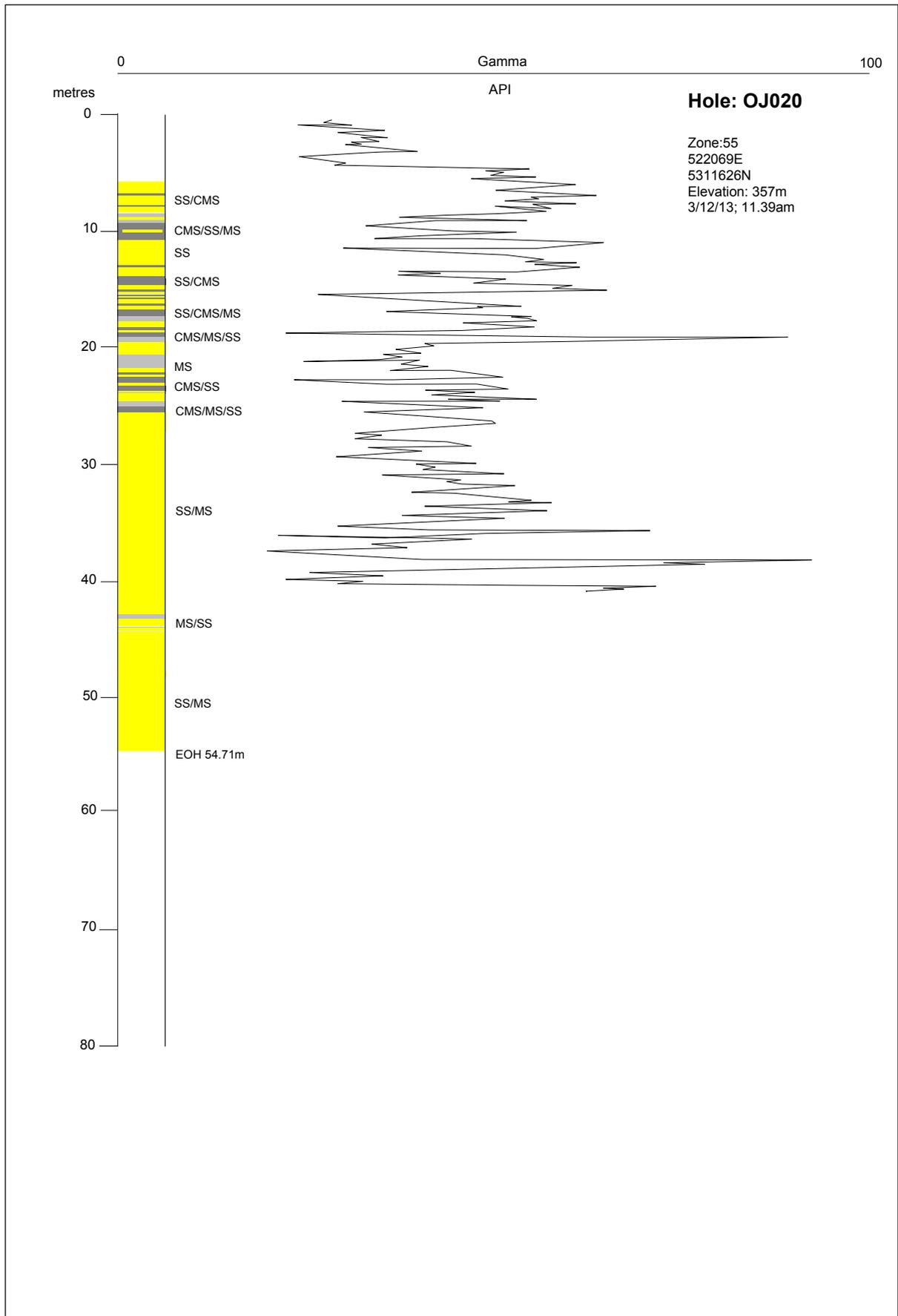
Hole: OJ017

Zone: 55
 525520E
 5313550N
 Elevatiob: 389m
 04/12/2013; 12.59pm

17-17.59 carbonaceous Mdst with coal clasts
 17.59-18.17 heavy dull coal & carbonaceous Mdst
 18.17-18.22 sandstone and coal
 18.5-18.78 heavy dull coal 1% vitrinite, 19.63-19.95
 heavy dull coal & carbonaceous Mdst







0

Gamma

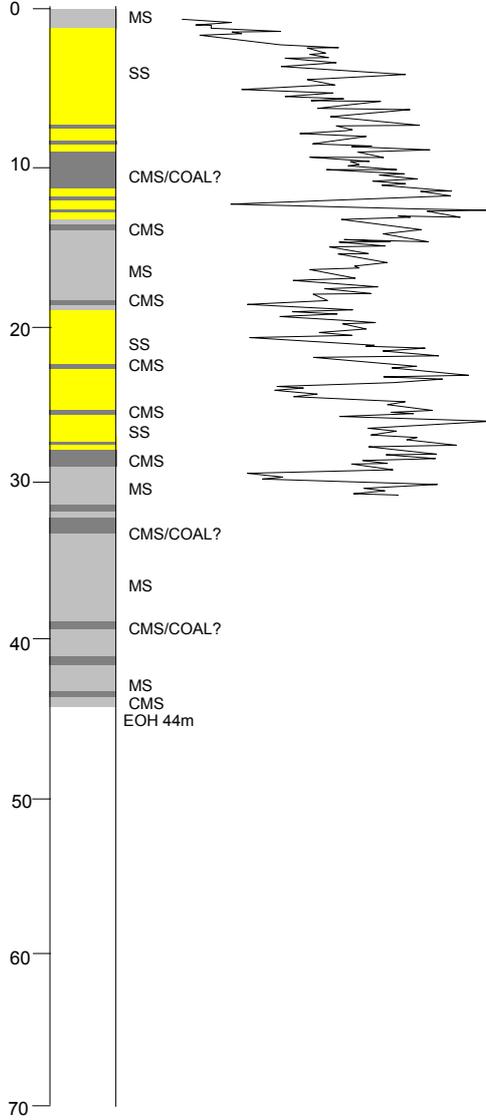
100

metres

API

Hole: OJ022

Zone: 55
525689E
5300501N
Elevation: 445m
2/12/13; 4.19pm



0

Gamma

100

API

metres

0

MS/SS

SS

MS/SS

MS/SS

SS

MS

SS

MS

SS

MS/SS

SS

MS/SS

MS/SS

SS

CMS

SS/MS

MS

MS

MS/SS

MS

EOH 43m

10

20

30

40

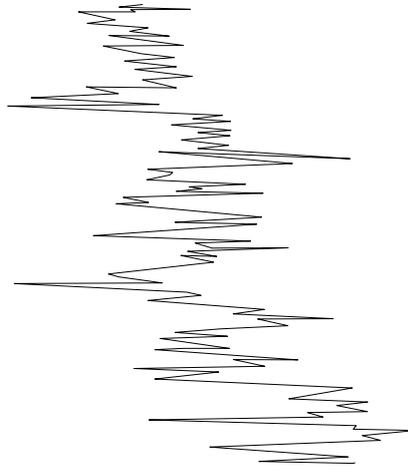
50

60

70

Hole: OJ023

Zone: 55
524035E
5306916N
Elevation: 392m
3/12/13; 10.35am



0

Gamma

100

metres

API

Hole: OJ024

Zone:55
523815E
5311193N
Elevation: 395m
3/12/13; 12.48pm

0

10

20

30

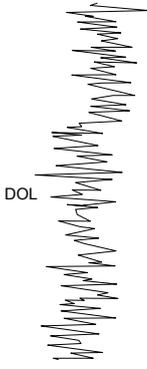
40

50

60

70

80



DOL

DOL

EOH 31m

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APPENDIX 1**GAMMA RAY LOGGER SPECIFICATIONS**

The gamma ray logging equipment used was manufactured by AUSLOG in Brisbane in 2006. Although constructed from 'off the shelf' components, it fulfils the prime requirements for portability and suitability for acquiring good data in coal measure environments that generally have very low levels of natural radioactivity. The gamma tool is a high-sensitivity, 43mm diameter probe which has a 4 x 1 inch NaI crystal. The equipment has proved to be robust and reliable with approximately 450 holes logged to date.

The equipment fits into the rear compartment of a conventional 4WD and is linked by power cables to the vehicles 12v battery. Ideally the vehicle should have a dual battery system. Data are collected and processed in a laptop computer using AUSWIN 2.22 Version software. Specifications of this system as purchased in 2006 and modified in 2011 are given below:

A631B Natural Gamma Tool Specifications:

Diameter	43mm
Sensor	NaI Crystal 1.0 x 4.0 inch (4PA12)
Sensor Offset	71cm
Calibration	Primary Cal Pits/Jig
Length	840mm
Weight	4.0kg
Max. Working Temperature	70°C
Max. Working Pressure KPg/PSI	21000/30000
Min. No. of Cable Conductor	1
Supply Voltage Range	35-65 VDC Nominal 50V
Communications	Digital RS2323

AUSLOG ECONOMY WINCH

Consisting of:

1

Winch Highly Portable – approx 500 metres capacity

with logging

(using PO435 single conductor 1/10" cable). No Mechanical Encoder or Level Wind Facility. Fitted Slip ring and DLS connections set up for shallow applications. In 2011 it was re-fitted with a 350m cable for use in coal exploration drill holes

1	P5701	Motor drive 12 Volt with Cable remote speed control
350m	P0435	Cable 1 conductor 2.54mm (1/10") diameter
1	P1248	Cablehead 1 conductor fitted to Wireline
1	P1249	Cablehead Retermination Kit
1	P5917	Digital Depth Tripod Assembly with 3 x 1 m legs – output of depth to DLS.
		Manual
1	P4718	Case transit suit Winch with Motor Drive

Aluminium

DIGITAL LOGGING SYSTEM (DLS) 5

Laptop logging computer required. Currently using a HP 'Advent' laptop computer with Auswin software. Power supply is from the vehicles battery using a 12volt to 240volt inverter,

1	P5739	"MOBILE" DLS 5, in a rugged metal case Manual, AUSWIN software Manual, digital recording system Alog software DOS
1	P4738	Transit case
1	P0265	Cable power 12 VDC
1	P2032	Cable signal (to suit 1 conductor winch DLS 5)
1	P4608	Cable DLS to computer
1		Windows software package and licence key or dongle

A631 – HIGH SENSITIVITY GAMMA RAY TOOL

Consisting of:

1	P2557	Tool gamma, 43mm diameter TS1
1	P6114	Transit case
1	P6659	Manual
1	P1201	Gamma test source, 43mm
1	P3449	Calibrator API jig for use with test source,

calculations

Supplied

During the re-fitting of the 350m winch cable in 2011 this equipment was inspected, minor repairs undertaken and was recalibrated by Mat Edmonds of Geosensor in Brisbane.