



## December 2012 Quarterly Activities Report

**Musgrave Minerals Limited is a dedicated exploration company focused on base metals, silver and gold in the highly prospective Musgrave Province and Gawler Craton regions of South Australia**

**ASX Code: MGV**  
**Issued Shares: 121M**  
**Cash Balance: \$11.6M**  
**ABN: 12 143 890 671**

### **Directors**

Graham Ascough  
Robert Waugh  
Kelly Ross  
John Percival

### **Top shareholders**

Mithril Resources Ltd  
Independence Group NL  
Goldsearch Ltd  
JP Morgan Nominees Australia Ltd  
Barrick (Australia Pacific) Ltd  
Integra Mining Ltd

### **Head Office**

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## Highlights

### **New Project Acquired – Menninnie Dam**

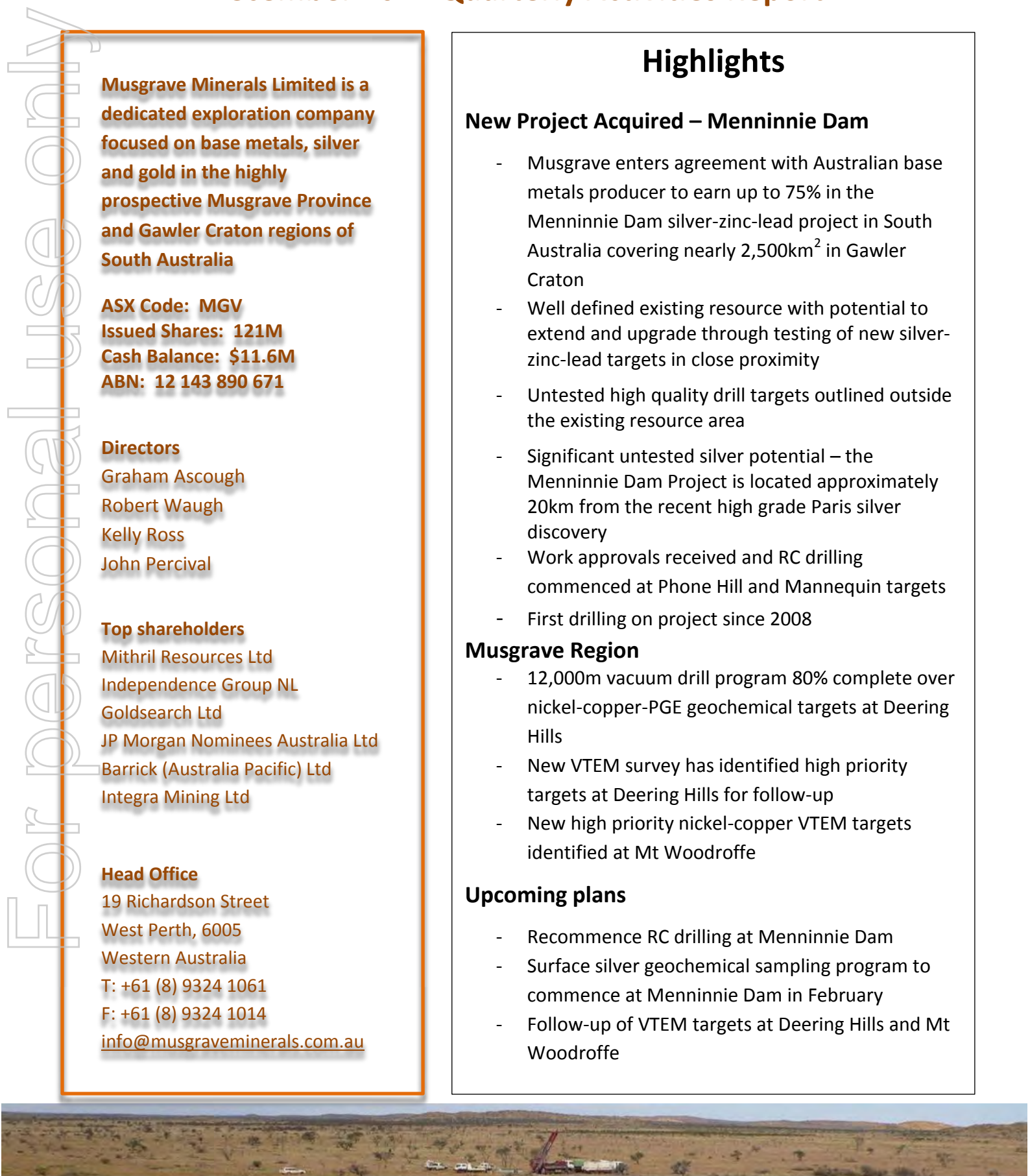
- Musgrave enters agreement with Australian base metals producer to earn up to 75% in the Menninnie Dam silver-zinc-lead project in South Australia covering nearly 2,500km<sup>2</sup> in Gawler Craton
- Well defined existing resource with potential to extend and upgrade through testing of new silver-zinc-lead targets in close proximity
- Untested high quality drill targets outlined outside the existing resource area
- Significant untested silver potential – the Menninnie Dam Project is located approximately 20km from the recent high grade Paris silver discovery
- Work approvals received and RC drilling commenced at Phone Hill and Mannequin targets
- First drilling on project since 2008

### **Musgrave Region**

- 12,000m vacuum drill program 80% complete over nickel-copper-PGE geochemical targets at Deering Hills
- New VTEM survey has identified high priority targets at Deering Hills for follow-up
- New high priority nickel-copper VTEM targets identified at Mt Woodroffe

### **Upcoming plans**

- Recommence RC drilling at Menninnie Dam
- Surface silver geochemical sampling program to commence at Menninnie Dam in February
- Follow-up of VTEM targets at Deering Hills and Mt Woodroffe



## Introduction

Musgrave Minerals Limited (ASX: MGV) is an Australian-based exploration company focused on base metal, gold and silver exploration in the Musgrave Geological Province and Gawler Craton regions of South Australia.

The Musgrave tenements are prospective for massive and disseminated nickel and copper sulphides within the mafic/ultramafic Giles Complex intrusives, base metal mineralisation within the Birksgate Complex metavolcanic and metasedimentary sequences, shear-hosted, hydrothermal copper, silver and gold and pegmatite-hosted rare earth element ("REE") mineralisation.

In October 2012, the Company signed a Heads of Agreement with Menninnie Metals Pty Ltd, a subsidiary of Terramin Australia Limited (ASX: TZN) to earn a 51% interest in the Menninnie Dam Project in the first stage, and up to a 75% interest thereafter.

Menninnie Dam, located approximately 100km west of Port Augusta in South Australia, is a silver- zinc-lead project comprising five licences covering an area of 2,471km<sup>2</sup> in the southern Gawler Craton.

The Project hosts the Menninnie Central and Viper mineralised zones which have a JORC-compliant inferred mineral resource of 7.7Mt at 27g/t Ag, 3.1% Zn and 2.6% Pb (estimated by Terramin Australia Limited in 2011 in accordance with the JORC code). These zones are not closed off and there is potential for further resources to be defined. The project is also located just 20km from the recent high grade Paris silver discovery by Investigator Resources. Previous drilling at Menninnie Dam has focused on the existing resource area, and no exploration drilling had been undertaken since 2008.

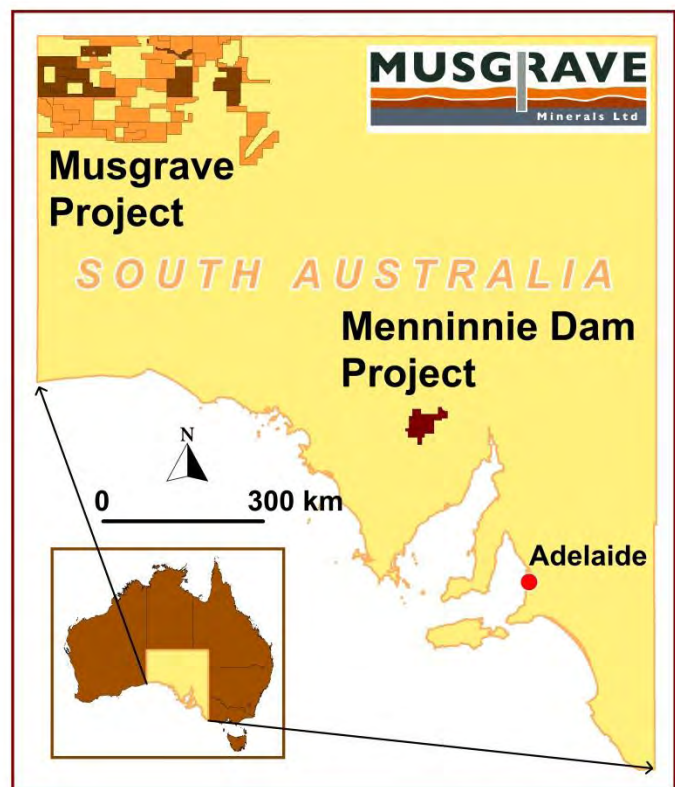


Figure 1: *Musgrave Minerals' Project location map*

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## Quarterly Activities Report for the period ending 31 December 2012

In the Musgrave region, the Company identified a number of new high priority drill targets at Mt Woodroffe and Deering Hills and commenced a follow-up vacuum drilling program over high priority geochemical targets at Deering Hills.

### **Corporate**

During the period, the Company spent \$1.1 million on exploration activities as summarised in the Exploration Activities section of this report.

At the end of the December 2012 quarter, the Company was well resourced to aggressively explore its Musgrave and Gawler Craton projects with more than \$11.6 million in cash.

As discussed above, MGV entered into a Heads of Agreement with Terramin Australia Ltd subsidiary Menninnie Metals Pty Ltd in regards to the Menninnie Dam Project. Terms and conditions of this agreement can be found in the ASX announcement dated 2 October 2012.

The Menninnie Dam Project complements Musgrave Minerals' ongoing commitment to the Musgrave region of South Australia, enhancing the Company's project portfolio with a more advanced opportunity and adding further drill ready targets in a new and prospective silver and base metal province.

### **Exploration Activities**

The Company's exploration during the December 2012 quarter focused on activities at Menninnie Dam, Deering Hills, Mt Woodroffe and the Ragnar target at Mimili.

### **Menninnie Dam**

#### **EL5039, 4813, 4285, 4669, 4865 (Musgrave Minerals Ltd earning up to 75%)**

Musgrave Minerals is earning a 51% interest in the Menninnie Dam silver-zinc-lead project in South Australia in the first stage, and up to a 75% interest thereafter under a Heads of Agreement with Menninnie Metals Pty Ltd a wholly owned subsidiary of Terramin Australia Ltd (ASX: TZN).

Menninnie Dam comprises five Exploration Licences (ELs) covering a contiguous area of 2,471km<sup>2</sup> in the Gawler Craton, located approximately 100km west of Port Augusta. The project hosts two zones, Menninnie Central and Viper, that have an Inferred mineral resource of 7.7Mt at 27g/t silver, 3.1% zinc and 2.6% lead (estimated by Terramin in 2011 in accordance with the JORC code) which are not closed off. The project has significant potential to discover new economic mineral deposits.

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## Quarterly Activities Report for the period ending 31 December 2012

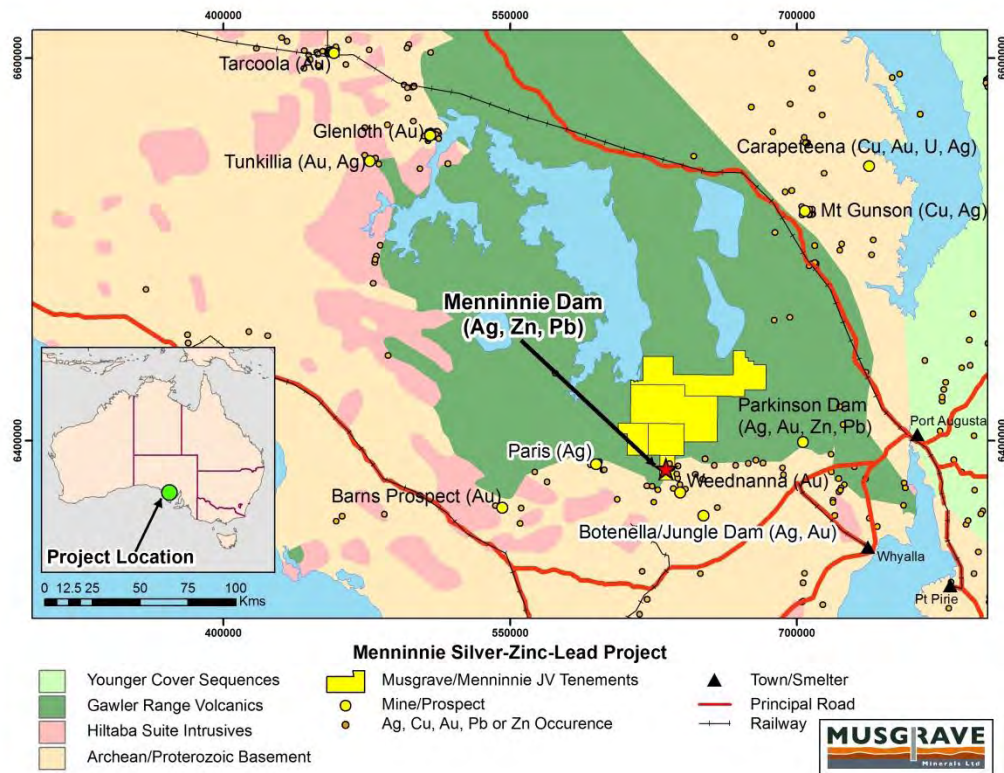


Figure 2: *Location of the Menninnie Dam Project, South Australia*

During the quarter, MGV received statutory work approvals to commence exploration activities including drilling at Menninnie Dam. The Company commenced a drilling program of more than 30 reverse circulation (RC) drill holes for approximately 4,000m across five targets in November. Targets included induced polarisation (IP) and geochemical targets at Tank Hill, Mannequin, Phone Hill and Nonning, as well as possible shallow extensions to the existing mineralisation at Viper (Figure 3). A total of 17 drill holes for 1,997m were completed before the Christmas break. Drill hole locations can be found in Figure 3 and Appendix 1, with drill hole depths varying from 48m to 198m.

Drilling will recommence in late February to complete the program, testing the Mannequin North, Tank Hill and Nonning IP targets.

Weak sericite alteration was intersected at Phone Hill associated with minor Pb, Zn mineralisation with values peaking at 1,599ppm Pb and 999ppm Zn and 1.6g/t Ag. Analytical results have only been received for the first seven holes (Appendix 1). Results for the remaining 10 holes completed to date at Viper and Mannequin are expected in February-March before drilling recommences.

A large surface geochemical soil sampling program is planned and will commence in the March quarter. One of the primary focusses of the program will be low level silver geochemistry to define analogous targets to Paris discovered by Investigator Resources Ltd only 20km to the west.





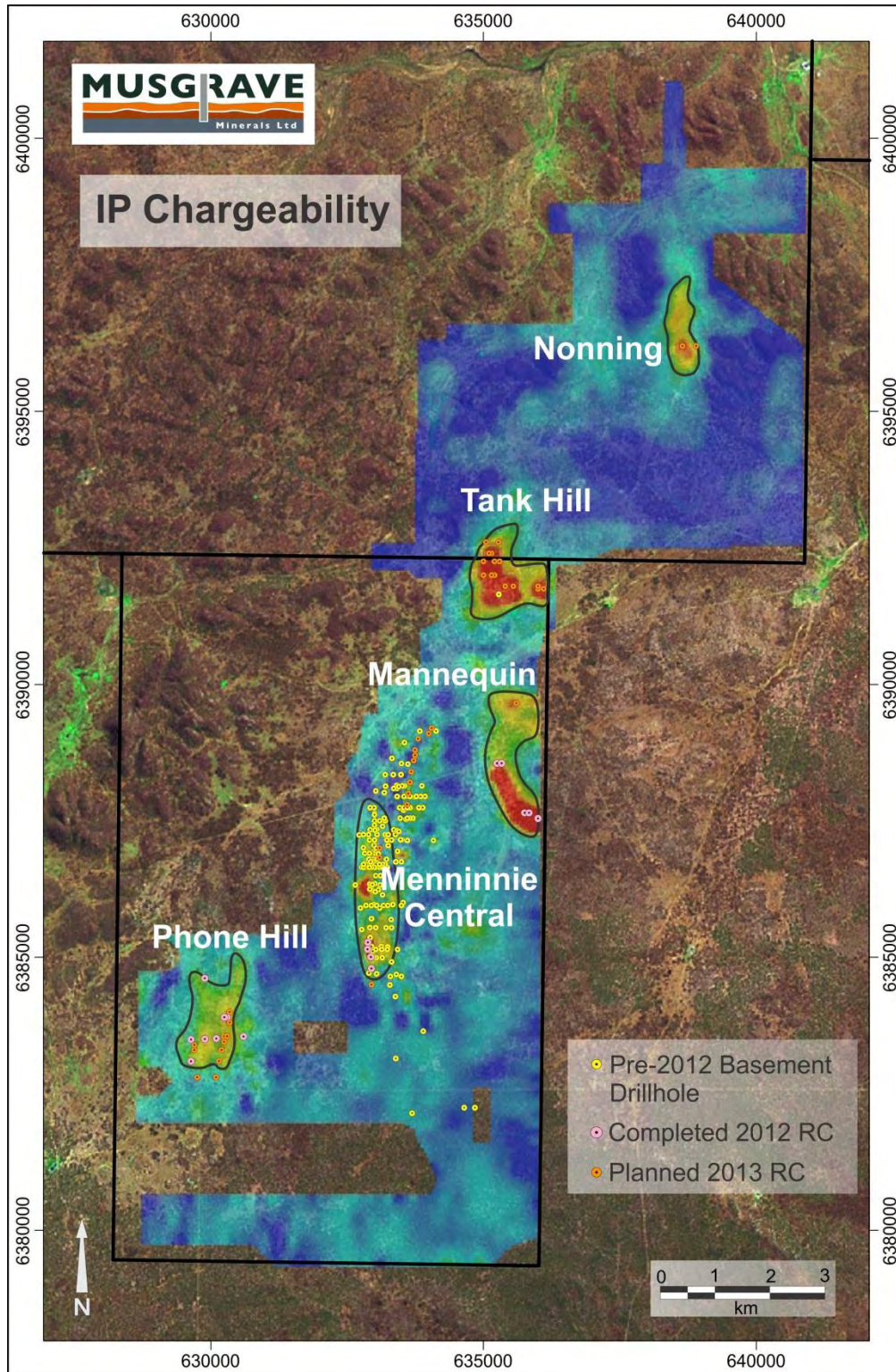


Figure 3: *Menninnie Dam drill hole locations on IP chargeability image.*



## **Deering Hills Project**

### **EL3941 & EL3942 (100% Musgrave Minerals Ltd)**

The Deering Hills Project is in the centre of the Musgrave geological province; about 200km west of the Stuart Highway and Adelaide to Darwin rail line.

A successful vacuum drilling program continued through the December quarter. The program aimed to infill the existing regional vacuum drill hole spacing of 500m x 1,000m down to 500m x 100m over geochemical targets which varied in extent from 600m to more than 5,000m in strike length. The drilling, which consisted of 557 holes for 9451.7m is now 80% complete. Results of the current program are expected in the March quarter.

Final data was received from a VTEM survey completed over the Mt Hardy area at the Deering Hills Project. A number of new high priority conductive targets have been identified. These will be the basis for additional follow-up exploration including rock-chip and soil sampling, ground EM surveys and drilling. Ground follow-up of these targets has commenced.

## **Mt Woodroffe Project**

### **EL3490 (100% Musgrave Minerals Ltd)**

The Mt Woodroffe Project is situated on wholly-owned tenement EL3940 in the eastern portion of the Musgrave Geological Province, located approximately 115km west of the Stuart Highway and Adelaide to Darwin railway line.

Final data from a VTEM survey over the Rimmer gravity target area at Mt Woodroffe was received during the December quarter. The survey identified a number of new high quality VTEM targets (Figure 4), which will be the basis for further exploration including surface soil and rock-chip sampling and ground EM surveys to define drill hole locations. Follow-up of these targets has commenced.

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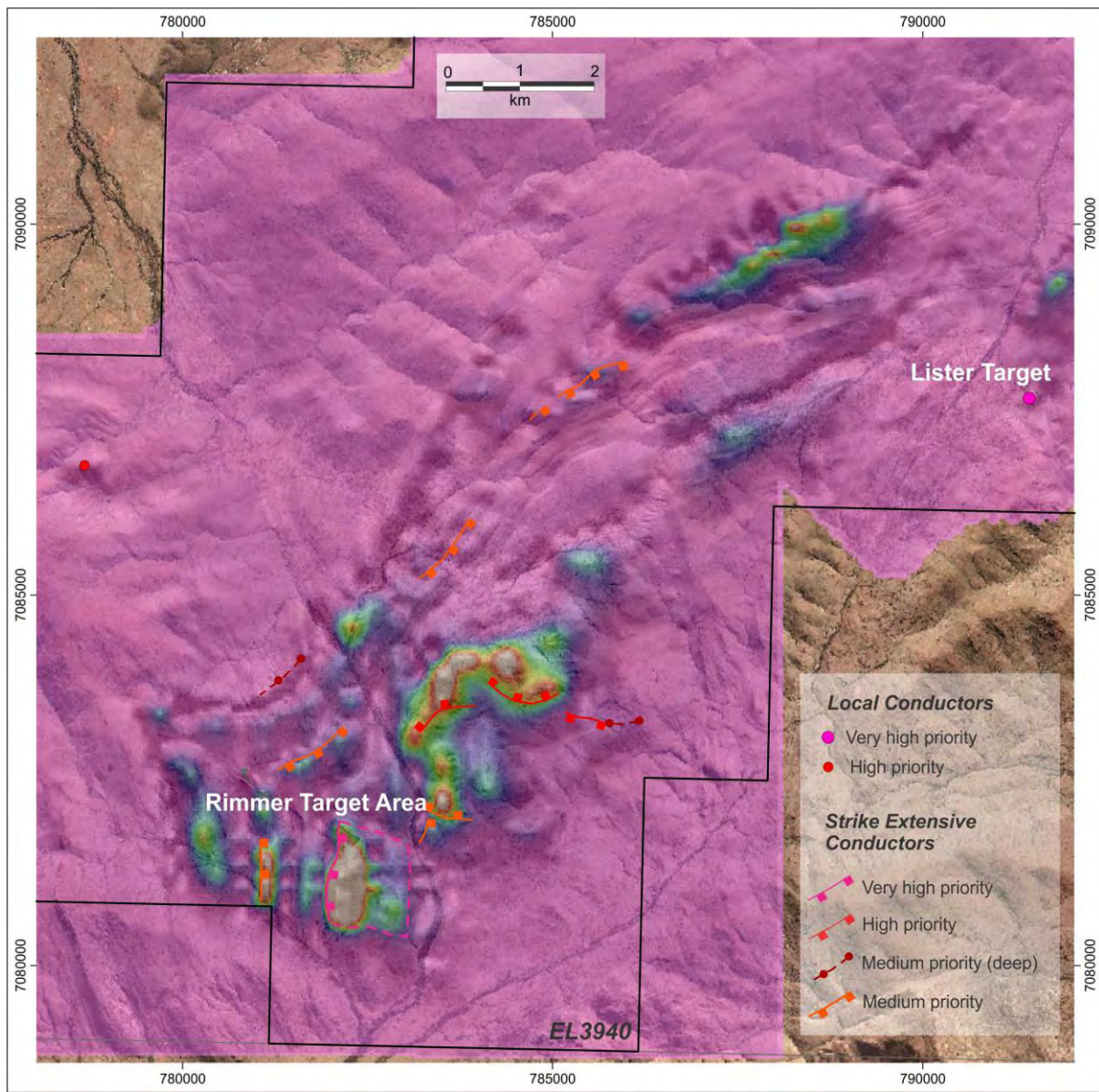


Figure 4: *Mt Woodroffe VTEM targets shown with VTEM colour EM amplitude image overlaying ortho-photograph.*

### Other Projects

Additional follow-up infill geochemical sampling was completed at the Ragnar target on the Mimili Project and initial field checking of VTEM targets at Bryson Hill also commenced late in the December quarter.



## Quarterly Activities Report for the period ending 31 December 2012

### Upcoming plans

During the March 2013 quarter, Musgrave Minerals is planning the following activities:

- RC drill testing of the Tank Hill and Nonning targets at Menninnie Dam;
- Commencement of low level silver geochemical sampling program at Menninnie Dam;
- Follow-up of targets from the Deering Hills vacuum drilling; and
- Follow-up of VTEM targets at Mt Woodroffe.

### Enquiries:

**Robert Waugh**  
Managing Director  
Musgrave Minerals Ltd  
0439 955 415

**Robert Gundelach**  
Investor relations  
NWR Communications  
0451 896 420

*\* JORC-compliant inferred resource for the Menninnie Central and Viper deposits was reported by Terramin Australia Limited (ASX: TZN) on 1<sup>st</sup> March 2011*

Zone	Tonnes x10 <sup>3</sup>	Zn (%)	Pb (%)	Ag (g/t)	Pb+Zn (%)
<b>Total Menninnie Central</b>	<b>5,240</b>	<b>3.5</b>	<b>2.7</b>	<b>28</b>	<b>6.1</b>
<b>Total Viper</b>	<b>2,460</b>	<b>2.3</b>	<b>2.4</b>	<b>24</b>	<b>4.8</b>
<b>Total Menninnie Central and Viper</b>	<b>7,700</b>	<b>3.1</b>	<b>2.6</b>	<b>27</b>	<b>5.7</b>

*Inferred Resource (at 2.5% Pb+Zn cut-off) as at 15 February 2011*

### Competent Person's Statement

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled and thoroughly reviewed by Mr Robert Waugh. Mr Waugh is a fellow of the Australasian Institute of Mining and Metallurgy (AusIMM) and a member of the Australian Institute of Geoscientists (AIG). Mr Waugh is Managing Director of Musgrave Minerals Limited. Mr Waugh has sufficient industry experience to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Waugh consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

### About Musgrave Minerals

Musgrave Minerals Ltd has a massive exploration footprint in the Musgrave Province in South Australia, with tenements covering an area of approximately 50,000km<sup>2</sup>. The Company also has an active advanced stage exploration project in the prospective silver and base metals province of the southern Gawler Craton.

Musgrave has a powerful shareholder base with six mining and exploration companies participating as cornerstone investors. Musgrave Minerals Ltd is an active Australian base metals explorer currently exploring in South Australia and actively looking for new projects for joint venture or acquisition.



## Quarterly Activities Report for the period ending 31 December 2012

### Appendix 1: Summary of Menninnie Dam Drill Hole Locations and Significant Results

Drill Hole ID	Easting (m)	Northing (m)	Azimuth (degrees)	Dip (degrees)	Total Depth (m)	From (m)	To (m)	Interval (m)	Pb (ppm)	Ag (ppm)
MDRC016	629646	6383501	283	-60	90	NSA				
MDRC017	629647	6383103	275	-60	120	NSA				
MDRC018	629893	6383505	277	-60	150	NSA				
MDRC019	630103	6383515	280	-60	72	22	23	1	-	1.6
MDRC020	630604	6383554	280	-60	72	NSA				
MDRC021	630304	6383903	96	-60	144	82	83	1	1164	-
MDRC022	630253	6383904	106	-60	198	142	143	1	1259	-
						160	161	1	1599	-
MDRC023	629895	6384620	277	-60	48	Assays not yet received				
MDRC024	632877	6385154	270	-60	84	Assays not yet received				
MDRC025	632943	6385007	270	-60	125	Assays not yet received				
MDRC026	632950	6384801	270	-60	156	Assays not yet received				
MDRC027	632885	6385276	270	-60	156	Assays not yet received				
MDRC028	635998	6387546	270	-60	156	Assays not yet received				
MDRC029	635755	6387645	270	-60	102	Assays not yet received				
MDRC030	635835	6387649	270	-60	102	Assays not yet received				
MDRC031	635247	6388556	270	-60	132	Assays not yet received				
MDRC032	635337	6388557	270	-60	90	Assays not yet received				

#### Notes

1. Co-ordinates are in UTM grid (GDA94 Z53) and have been measured by hand-held GPS
2. Drilling was undertaken utilising a truck mounted reverse circulation drilling rig
3. All samples are analysed as 5m composites or individual 1m samples
4. Individual 1m samples were analysed where elevated base metals was identified
5. Sample preparation and sample analysis is undertaken by Intertek Genalysis, in Wingfield, South Australia
6. Sample preparation by dry pulverisation and base metal analysis by ICP-OES and ICP-MS to 0.5ppm
7. An accurate dip and strike of the mineralisation is yet to be determined and the true width of the intercepts is not yet known
8. NSA (no significant assay) – No assay above 1g/t Ag
9. ppm (parts per million)
10. ppb (parts per billion)

# Appendix 5B

## Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001.

Name of entity

MUSGRAVE MINERALS LIMITED

ABN

12 143 890 671

Quarter ended ("current quarter")

31 December 2012

### Consolidated statement of cash flows

Cash flows related to operating activities		Current quarter \$A'000	Year to date (6 months) \$A'000
1.1	Receipts from product sales and related debtors	-	-
1.2	Payments for (a) exploration and evaluation	(1,102)	(1,781)
	(b) development	-	-
	(c) production	-	-
	(d) administration	(226)	(507)
1.3	Dividends received	-	-
1.4	Interest and other items of a similar nature received	194	380
1.5	Interest and other costs of finance paid	(2)	(4)
1.6	Income taxes paid	-	-
1.7	Other	-	-
	<b>Net Operating Cash Flows</b>	<b>(1,136)</b>	<b>(1,912)</b>
<b>Cash flows related to investing activities</b>			
1.8	Payment for purchases of:		
	(a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	(27)	(27)
1.9	Proceeds from sale of:		
	(a) prospects	-	-
	(b) equity investments	-	-
	(c) other fixed assets	-	-
1.10	Loans to other entities	-	-
1.11	Loans repaid by other entities	-	-
1.12	Other	-	-
	<b>Net investing cash flows</b>	<b>(27)</b>	<b>(27)</b>
1.13	Total operating and investing cash flows (carried forward)	<b>(1,163)</b>	<b>(1,939)</b>

+ See chapter 19 for defined terms.



**Appendix 5B**  
**Mining exploration entity quarterly report**

1.13	Total operating and investing cash flows (brought forward)	(1,163)	(1,939)
	<b>Cash flows related to financing activities</b>		
1.14	Proceeds from issues of shares, options, etc	-	-
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	-	-
1.17	Repayment of borrowings	(16)	(30)
1.18	Dividends paid	-	-
1.19	Other	-	-
	<b>Net financing cash flows</b>	<b>(16)</b>	<b>(30)</b>
	<b>Net increase (decrease) in cash held</b>	<b>(1,179)</b>	<b>(1,969)</b>
1.20	Cash at beginning of quarter/year to date	12,781	13,571
1.21	Exchange rate adjustments to item 1.20	-	-
1.22	Cash at end of quarter	11,602	11,602

**Payments to directors of the entity and associates of the directors**

**Payments to related entities of the entity and associates of the related entities**

	Current quarter \$A'000
1.23 Aggregate amount of payments to the parties included in item 1.2	113
1.24 Aggregate amount of loans to the parties included in item 1.10	

1.25 Explanation necessary for an understanding of the transactions

Directors' fees, salary payments and superannuation.

**Non-cash financing and investing activities**

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

Nil

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

Nil

### Financing facilities available

Add notes as necessary for an understanding of the position.

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	-	-
3.2 Credit standby arrangements	-	-

### Estimated cash outflows for next quarter

	\$A'000
4.1 Exploration and evaluation	1,094
4.2 Development	
4.3 Administration	259
<b>Total</b>	<b>1,353</b>

### Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.	Current quarter \$A'000	Previous quarter \$A'000
5.1 Cash on hand and at bank	172	566
5.2 Deposits at call	11,430	12,215
5.3 Bank overdraft	-	-
5.4 Other	-	-
<b>Total: cash at end of quarter (item 1.22)</b>	<b>11,602</b>	<b>12,781</b>

### Changes in interests in mining tenements

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1 Interests in mining tenements relinquished, reduced or lapsed	EL3939	Exploration Licence surrendered 4 October 2012 (Musgrave, Mt Woodward, SA)	100%	0%
6.2 Interests in mining tenements acquired or increased	EL5039	Exploration Licence – MGW earning an interest from Menninnie Metals Pty Ltd.	-	0%

+ See chapter 19 for defined terms.



EL4813	Exploration Licence – MGV earning an interest from Menninnie Metals Pty Ltd.	-	0%
EL4285	Exploration Licence – MGV earning an interest from Menninnie Metals Pty Ltd.	-	0%
EL4669	Exploration Licence – MGV earning an interest from Menninnie Metals Pty Ltd.	-	0%
EL4865	Exploration Licence – MGV earning an interest from Menninnie Metals Pty Ltd.	-	0%

### Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

		Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1	Preference + securities (description)	-	-	-	-
7.2	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs, redemptions	-	-	-	-
7.3	+ Ordinary securities	121,000,000	94,500,000	Fully paid	Fully paid
7.4	Changes during quarter (a) Increases through issues (b) Decreases through returns of capital, buy-backs		-	-	-
7.5	+ Convertible debt securities (description)	-	-	-	-
7.6	Changes during quarter (a) Increases through issues (b) Decreases through securities matured, converted	-	-	-	-

+ See chapter 19 for defined terms.

7.7	<b>Options</b> ( <i>description and conversion factor</i> )	4,750,000 2,500,000 7,750,000 500,000 425,000		<u>Exercise Price</u> \$0.36 \$0.50 \$0.25 \$0.36 \$0.25	<u>Expiry Date</u> 17/02/16 17/02/16 19/04/16 08/05/16 23/01/17
7.8	Issued during quarter			<u>Exercise Price</u>	<u>Expiry Date</u>
7.9	Exercised during quarter				
7.10	Expired/lapsed during quarter	100,000		\$0.25	23/01/17
7.11	<b>Debentures</b> ( <i>totals only</i> )	-	-		
7.12	<b>Unsecured notes</b> ( <i>totals only</i> )	-	-		

## Compliance statement

- This statement has been prepared under accounting policies which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- This statement does give a true and fair view of the matters disclosed.

Sign here:

*Donald Stephens*

Date: 15 January 2012

Print name: Donald Stephens  
(Company Secretary)

## Notes

- The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- Issued and quoted securities** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.

+ See chapter 19 for defined terms.



- 5     **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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