

MAYDENA SANDS PTY LTD

ACN 111 938 428

ABN 65 111 938 428

RETENTION LICENCE NO. 2/2003

MAYDENA, TASMANIA

ANNUAL REPORT

TO

09 January 2006

GERHARD K. KRUMMEI

DECEMBER 2005

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ABSTRACT

Except for one instance, laboratory bulk sample processing this year did not quite achieve premium product quality acceptable in the marketplace for TFT glass substrate production, indicating further need for research and tests for product quality improvement.

However, as a result of ongoing marketing efforts, this Company's profile and its potential products are gaining greater recognition in the marketplace, resulting in enquiries and encouragement.

Previous project capex and opex estimates are under close review to assist a decision towards production.

Keywords:

Maydena; Pine Hill;
Silica flour;
Processing;
Marketing;

C O N T E N T S

ABSTRACT

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1. INTRODUCTION

At the end of April, 2005, Maydena Sands Pty. Ltd. replaced J.J. McDonald & Sons Mining Pty. Ltd. as owner/operator of this tenement without interruption to programme continuity.

This report outlines activities by J.J. McDonald & Sons Mining Pty. Ltd. and subsequently Maydena Sands Pty. Ltd. in regard to the second year's activities relating to its Retention Licence 2/2003, granted for a three year period to 09.01.2007.

This tenement has its origins in EL 17/1998 previously held and operated by J.J. McDonald & Sons Mining Pty. Ltd. It is located just south of the sealed Gordon River road approximately 4 km west south west of Maydena and about 90 km by road from Hobart (Fig.1). There is good access to and within the prospect area. Power, water, housing and basic facilities are readily available from within a short radius of the prospect. The narrow gauge rail-line from New Norfolk to Maydena is being progressively upgraded for passenger traffic. A 700m long gravel airstrip is located 3 km north west of the silica sand deposit.

The primary target for investigation and assessment remains the deposit of silica sand and its silica flour matrix located largely to the west of the Eastern Quarry, about 1 km south east of Pine Hill (Fig.2).

The overall aim of the investigations is to determine if a commercially viable operation can be established, based on products derived from the silica sand resource in the tenement.

The main objectives of this year's activities towards this aim were:

- Continuation of beneficiation/processing investigations
- Continuing marketing efforts for silica flour and co- or by-products
- Continuation of site planning for quarry and processing plant.
- Preparations towards an Environmental Impact Study.

2. PREVIOUS WORK

Exploration by Pioneer Silicon Industries Pty. Ltd. in 1988/89 identified a lag deposit of hard silica rock at the Western Quarry containing a small resource of material deemed suitable for the manufacture of silicon. (Fig.2). From this, approximately 19,000 tonnes of crushed, screened silica rock was produced in 1991 and 1992 for shipment. 10,000 tonnes were consigned to Pioneer's silicon smelter at Electrona and about 9,500 tonnes went to Temco's Bell Bay ferrosilicon plant. Extraction, by Duggans Pty. Ltd. under M.L.1396 P/M, virtually ceased upon closure of the Electrona smelter in 1992, although a small parcel of 850 tonnes of silica rock is reported to have been mined in 1995. At the end of the earlier exploration work, an occurrence of white silica sand was located between Pine Hill and the Styx Road in an area now known as the Eastern Quarry Area. Pioneer investigated this deposit in the vicinity of the Eastern Quarry by 23 shallow RC drill holes. Preliminary estimates suggested a resource in the order of some 0.75 – 1.5 million cu. m. of mostly low iron silica sand containing about 10% of high grade lump silica.

Assay results from a number of subsequent, excavator generated pit samples by the North West Bay Co. Pty. Ltd. supported the high quality of the resource and, together with sizing determinations on a bulk sample, indicated that the sand might be suitable for the manufacture of table ware glass.

During its tenure of EL 17/1998, which contained these deposits, J.J. McDonald & Sons Pty. Ltd., using the air core drill sampling method, completed 43 drill holes totalling 553 m which outlined a raw material resource of about 6 million tonnes of loose silica. A small part in the south west of the deposit, included in the above estimate, remains to be more fully assessed by drilling.

The drilling also demonstrated that the deposit is more variable, complex and higher in iron oxides and other impurities than previous data suggested.

Laboratory sizing determinations indicated that the deposit is a possible source of silica flour as well as glass sand, while geological mapping pointed to a small resource potential for hard rock silica as well.

Bench scale beneficiation tests and bulk sample processing tests, including acid wash tests on samples of the glass size fraction sand, showed that the - 250 micron fraction could be upgraded to a high quality product containing only about 50ppm Fe₂O₃ without major environmental impact, with lower levels of iron a possibility.

Sources of good quality limestone and dolomite were identified in relative proximity to the silica sand deposit for eventual acid neutralization uses.

The company's activities in the marketplace identified the natural silica flour as potentially the deposit's most important component economically. This material provided the major focus for ongoing geological, processing and marketing activities, though the coarser size fractions and hard-rock potential remain of interest for future attention.

Details of past activities and outcomes are provided in reports listed in the Bibliography. (See Item 8 below).

In late 2004, J.J. McDonald & Sons Mining Pty. Ltd. formed a new holding and operating company, Maydena Sands Pty. Ltd., to which all of the former company's interests in the Maydena area were transferred in April 2005.

Since then, all activities are being conducted under the new Company name.

3. ACTIVITIES FOR PERIOD

Activities this year were again focused mainly on raw material beneficiation tests and marketing, with intermittent conceptual quarry, process design and processing site layout planning continuing in the latter half of the year.

3.1 Work Done

- Completion by HECEC of a topo-contour plan of the quarry site using photogrammetry.

- Production of a colour orthophotoplan of the silica sand deposit of the area.
- Completion of laboratory-scale beneficiation tests on small (8-20kg) bulk sample composites, 106B, 107B, 108B and EQ01B (Eastern Quarry dump) by AMMTEC, Perth.
- Various assay work and determinations in conjunction with the above laboratory tests.
- Collection of a bulk sample 101B of 6 tonnes approx. from drill hole site 101 (AGD 1966 co-ords: 5263882mN, 465893mE) for processing by pilot plant - sample in temporary storage.
- Restoration and rehabilitation of above bulk sample site.
- Intermittent conceptual planning for quarry and processing site layout.
- Review and update of project capex and opex commenced towards year-end.
- Regular contact with Norske Skog re possible land purchase/lease.
- Marketing-related meeting with OHC, Berlin.
- Marketing-related meeting with Iwatani, Tokyo.
- Marketing meeting in Melbourne with reps of Quanzhou Huanmin Trading Co. of China.
- Attendance at Glasstech Asia 2005, Bangkok.
- Various project-related Forestry Tasmania liaison, meetings with members of MRT, DIER, DPIWE, local MHR, Maydena Development Assoc. and technical/environmental consultants (EIS and Development Approval related).

3.2 Statistical Summary

| | |
|---|-----|
| No. of large Bulk Samples collected: | 1 |
| No. of “metallurgical” samples assayed: | 34 |
| No. of “environmental” samples: (Acid Generation Analyses) | 3 |
| No. of determinations: | 360 |
| No. of sizing analyses | 19 |

3.3 Expenditure

| | |
|------------------------------|-----------|
| This period (Jan – Dec 2005) | \$66,904 |
| Cumulative to 31.12.05 | \$126,691 |

4. RESULTS

4.1 Photogrammetry

Topo-contour coverage of the southern half of the silica sand deposit at 2m vertical interval, using photogrammetric methods, has been completed. The data has been merged with that already available for the northern half of the deposit.

This now provides topo-contour coverage over the entire deposit.

In addition, an orthophotograph, providing a colour image of the deposit, with 2m contours, cultural detail and drill holes superimposed, was created.

Both these data sets will significantly assist in the quarry site planning process.

A similar project is planned for the proposed process plant site immediately south of the Gordon River Road, in the north of the RL, subject to the acquisition of an allotment on which to site the plant and supporting infrastructure.

4.2 Drilling

The small drilling programme planned for April 2005 was not undertaken as Forestry Tasmania, for several reasons, did not carry out its indicated burning and re-seeding programme over the southern, clear-felled half of the silica sand deposit. Drilling was deferred to about April, 2006, subject to activities by Forestry Tasmania.

4.3 Beneficiation

4.3.1 Bulk Sample Processing

The non-magnetic fraction sample 107B/5/1, obtained from beneficiation tests undertaken last year, was subjected to agitation acid leach tests by AMMTEC at 20°C for 30 mins using a dilute acid dose of 25kg/tonne H₂SO₄.

No improvements in product quality were achieved with this sample.

Following completion of the above acid washing tests on sample 107B/5/1, AMMTEC, Perth, was requested to process, at laboratory scale, small bulk samples 106B, 108B and EQ01B composited last year, to produce the non-magnetic fraction for each of the respective samples in the +38µm - 300µm size band.

Procedures were similar to those described in Krummei, 2004 and displayed in the flowsheet in AMMTEC Report A9587 attached as Appendix 1. For each sample, assays were obtained for the head/feed, the pre-mag +38µm - 300µm fraction and the non-mag sub sample.

After review of the results, AMMTEC were further requested to undertake acid wash tests on the non-magnetic fractions of samples 106B, 108B and EQ01B in line with the procedures outlined above for samples 90B and 107B. Sample analyses were undertaken by ALS-Chemex, Brisbane.

The results of the processing to the non-magnetic fraction stage were somewhat disappointing with respect to iron for samples 106B and 108B, but not unexpected for sample EQ01B (the latter collected from the dump at Eastern Quarry (Appendix 2). Improvements were recorded for TiO_2 , but desired levels below 20ppm were not achieved. Alkali metals, especially Na_2O_3 also remained undesirably high.

Acid washing of these samples resulted in approximately a 50% reduction of iron in the above non-magnetic fraction of samples 106B and 108B to levels around 50-60ppm Fe_2O_3 . Only a minor improvement was achieved in sample EQ01B.

There was only minor improvement in the reduction of TiO_2 levels.

The results for all other elements investigated were mixed at best, with levels of alkali metals remaining problematic.

The outcomes for Fe_2O_3 are compared in Table 1.

Of note are the results of sample AIS20/250/B8. This sub-sample was the result of bulk processing approximately 30 tonnes of Pine Hill material in the production plant at Heybridge, NW Tasmania in 2001. (Krummei 2001).

The washed +35-250 micron fraction assaying 54ppm Fe_2O_3 , when acid washed as previously described, yielded an improved product reporting 46ppm Fe_2O_3 .

However, a significantly better end product assaying only 10ppm Fe_2O_3 was obtained when the former material was WHIMS-processed.

There was no further lowering of Fe_2O_3 content when this high quality product was subjected to acid washing (Appendix 2).

These high quality results were essentially confirmed for Fe_2O_3 and TiO_2 by fire assay. Significantly, Al_2O_3 at 20ppm as well as K_2O and Na_2O at < 10ppm each are also seen as an encouraging outcome (Appendix 3).

Discussions with Dorfner of Germany regarding its submission for a series of extensive beneficiation tests were suspended as a large part of the proposal would have resulted in duplication of work already undertaken by this company. However, contact is being maintained with a view to investigate the application of leading edge technology to end product upgrade to a quality acceptable for electronic and superconductor applications.

4.3.2 Sizings

Sizing analyses, using a Mastersizer 2000 unit, were carried out on AMMTEC head samples, as well as the +38 μ m - 300 μ m fractions of the intermediate and final non-mag products. Results for the latter are relevant in the marketplace (Appendix 4) and show:

| <u>Sample</u> | <u>d(0.1) μm</u> | <u>d(0.5) μm</u> | <u>d(0.9) μm</u> |
|------------------|---------------------------------|---------------------------------|---------------------------------|
| 106B – Non-Mag. | 52 | 122 | 288 |
| 108B – Non-Mag. | 46 | 101 | 255 |
| EQ01B – Non-Mag. | 46 | 100 | 248 |

For comparison, average results for the non-mag product in the +38 μ m - 300 μ m fraction for samples 90B and 107B obtained at the end of the last reporting period indicated:

| | | | |
|----------|----|-----|-----|
| 90B2/4/1 | 42 | 102 | 264 |
| 90B4/4/1 | 36 | 89 | 230 |
| 107B/5/1 | 47 | 123 | 299 |

Market response to these results was positive on the whole, except that the spread of material at the coarse end needs to be narrowed in somewhat.

| SAMPLE | 108B | 107B | 106B | INDEX AIS 20/250/B8 | 90B | Roche 90/91 Composite | EQ 01 B |
|--------------------------------|------|------|-------------|---------------------------|---------|-----------------------------|-----------------|
| Drill Hole Av. (Calc) | 424 | 472 | 500 | 430 approx. 128 (1-3m) | 232 | 331 | 200-400 approx. |
| Head/Feed | 390 | 600 | 510 | 95 | 2870 | 497 | 180 |
| - 300 (250) micron (washed) | 560 | 100 | 810 | 54 | 140 | 193 | 240 |
| Non Mag (-300µ) | 130# | 50# | 110# | 10#,20# | 60, 80# | 90# | 180# |
| Acid Wash(-300µ) | 60* | 60* | 50* 50** | 46** 10* | ? | 50*(,50)* | 150* |

* Acid dose : 25kg/tonne H₂SO₄
 ** Acid dose : 25kg/tonne oxalic acid
 ** Leach temp : 20°C
 Leach time : 30 mins
 # WHIMS
 ≠ IRMS
 " pre-WHIMS

TABLE 1

BULK SAMPLES

PROCESSING RESULTS -- Fe₂O₃ ppm

SUMMARY

23/01/2006

4.4 Marketing

Marketing activities continues throughout the year and intensified in the latter half.

Positive outcomes were achieved.

4.4.1 Osthandel Chemie GmbH (OHC)

Progress discussions on marketing the Pine Hill material in Europe, the Middle East and North America were held at the company's head office in Berlin.

OHC also promoted Maydena Sands to Corning-USA.

The above company identified Schlingmeier Quarzsand GmbH as a potential customer for some of the higher quality silica sand and flour from Pine Hill, possibly for blending purposes.

Initial feedback on the quality of two samples forwarded for preliminary testing and assessment to Schlingmeier was encouraging. Tests are continuing and further comment is awaited.

4.4.2 Itochu

Previously established contacts with this company were maintained through regular information and update meetings and emails.

4.4.3 Iwatani

The company continues to show a high level of interest in Pine Hill silica flour.

There were regular information exchanges and a project update meeting was held with the company's Assistant Manager in Tokyo.

A 1 kg sample of the +38 μ m - 300 μ m fraction from sample 107B/5/1 was supplied to Japanese motherglass producer NEG via Iwatani for assessment. Feedback indicates that sample grading, subject to minor adjustments, is acceptable, though slightly on the coarse side.

4.4.4 Huamin Trading - China

Contact has been established with this trading house, with discussions held with the company's General Manager and Marketing Manager during their recent visit to Melbourne.

The company specialises in chemical, minerals, metals and fuels, but wishes to add high purity silica flour products to its trading list.

They have undertaken to investigate the market in China for Maydena Sands products, including high purity lump silica rock.

4.4.5 Golden Resources Industries & Investments Co. Ltd.

The company is a supplier and trader of industrial minerals based and focused on China. Introductory contacts are in progress.

4.4.6 CIMC6 Conference

The September 2005 promotion at this Conference of Maydena Sands and its potential to produce high purity silica flour, sands and rock has already generated several enquiries.

4.4.7 GlassTech Asia 2005

Attendance at this trade exhibition in Bangkok identified one Chinese manufacturer of refractory materials as a possible customer for some low-volume off-take of silica flour. Further response from this company is awaited.

4.5 Mine Planning

There were indications towards the end of the year that several issues which delayed mine planning during the year (Krummei, 2004) could be resolved by mid-year 2006.

In anticipation of positive outcomes, a consultant was engaged to review earlier production concepts and update previous capex and opex estimates to be initially based on a 1 shift/day process plant operation yielding about 18-20,000 t.p.a. of saleable product. This output would require a raw material extraction rate around 50,000 t.p.a.

Work has commenced to source and cost suitable gear for a small pilot plant for bulk sample testing and to provide larger quantities of material for client tests.

In view of its prior involvement and knowledge of the area, SEMF, Hobart, has been selected to assist with the compilation of an Environmental Impact Statement for the Pine Hill Project in support of an eventual Draft Development Application to the Local Council.

4.6 Environmental

In order to gauge the environmental impact of surface storage of oversize, fines and magnetic products, a series of determinations were undertaken on the solids of the +300 μ m, - 38 μ m and the magnetic fractions on 106B-Solids sub samples. pH values recorded were in the range of 7.48 – 8.26, i.e. neutral to slightly alkaline.

The net Acid Production Potential for the samples tested is reported as nil (Appendix 5).

4.7 Rehabilitation

Bulk sample site 101B, situated in a clear felled area in the west central part of the deposit, was rehabilitated and restored immediately on completion of sample collection.

5. CONCLUSIONS

- 5.1** During the past year there have been a number of favourable demand-side developments in the marketplace for high quality fine silica sand and silica flour which encourage perseverance with the Maydena Sands Project.
- 5.2** Subject to completion of burning activities by Forestry Tasmania in the project area, complete some 10-15 shallow air core holes in the south west segment of the deposit for further resource assessment and to provide information for basic quarry-site planning.

- 5.3** In view of the non-availability, Australia-wide, of a suitable facility, the construction of a small project dedicated pilot plant needs serious consideration. This is to test the notion that better quality silica flour end products could be obtained more consistently by larger tonnage throughput than that possible at laboratory scale, using natural fine and comminuted coarser material. Some of the end products will be starting points for attempts at further upgrading to premium products for the semi-conductor industry.
- 5.4** Quality control problems remain and require ongoing attention in order to achieve a saleable end product of consistent, high quality. Various laboratory investigations and tests towards that end should continue as needed.
- 5.5** Marketing activities should continue world-wide, supported by high quality samples for demonstration and test purposes by potential customers.
- 5.6** Market contact and marketplace developments during the year further strengthen confidence for moves towards production.

6. PROPOSED FUTURE ACTIVITIES

These largely flow on from the past year's activities and will include:

- Production of a contour base map, using photogrammetry, of the proposed process plant site in the northern part of the tenement to assist with detailed site layout planning, subject to successful completion of a land purchase,
- Completion of a small drilling programme of up to 15 shallow air-core holes to assess the extent and quality of the raw material resource in the south west of the deposit.
- Continuation of ongoing beneficiation investigations at both laboratory and pilot plant scale aimed at developing a product range, improving end product quality and consistency and providing quality material for testing by customers.

- Completion of a thorough review of process plant design and sand extraction concepts with capex and opex re-estimates.
- Further research to assist with the compilation of an EIS.
- Further efforts to identify sales opportunities and develop market contacts and relationships.
- Ongoing contact with state and local regulatory authorities, as well as civic associations, on project related activities.
- Submission of an application for a mining lease of about 2.5 sq km.

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- | | | |
|---------------|------|--|
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APPENDIX 1

AMMTEC REPORT NO. A9587

(See separate PDF file attached)

APPENDIX 2

ASSAY RESULTS

CERTIFICATE OF ANALYSIS



ALS Chemex

Batch: ST40613
Sub Batch: 0

CONTACT: MR GERHARD KRUMMEI
CLIENT: JJ MCDONALD & SONS MINING P/L
ADDRESS: SUITE 28
487 ST KILDA ROAD
MELBOURNE VICTORIA 3004

LABORATORY: BRISBANE
DATE RECEIVED: 29/03/2005
DATE COMPLETED: 11/04/2005
SAMPLE TYPE: SILICA SANDS
No. of SAMPLES: 21

ORDER No.: ALS 224180

PROJECT:

COMMENTS

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

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Fax: 61-7-3243 7254
Email: shaun.kenny@alschemex.com

Signatory

LABORATORIES

| AUSTRALIA | NORTH AMERICA | SOUTH AMERICA | AFRICA |
|--|--|--|--------|
| Brisbane Alice Springs Perth Kalgoorlie Townsville | Vancouver Chihuahua Elko Fairbanks Guadalajara Reno Thunder Bay Toronto | Santiago Antofagasta Arequipa Calama Copiapo Lima Mendoza Quito | Mwanza |



CERTIFICATE OF ANALYSIS

Batch: ST40613
 Sub Batch: 0
 Date of Issue: 11/04/2005
 Client: JJ MCDONALD & SONS MINING P/L
 Client Reference:

| SAMPLE | Element Unit Method | Fe2O3 % | Al2O3 % | CaO % | Cr2O3 ppm | MgO % | TiO2 % | V2O5 % | MnO % | Na2O % | K2O % | Co ppm |
|--------------|---------------------------|-----------------|-----------------|-----------------|--------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-------------|
| | LOR | M289-1 0.001 | M289-1 0.001 | M289-1 0.001 | M289-1 1 | M289-1 0.001 | M289-1 0.001 | M289-1 0.001 | M289-1 0.001 | M289-1 0.001 | M289-1 0.001 | M289-1 1 |
| A9587-1HRS | | 0.018 | 0.019 | 0.021 | <1- | 0.006 | 0.013 | <0.001 | <0.001 | 0.002 | 0.002 | <1 |
| A9587-6HRS | | 0.051 | 0.016 | 0.020 | 1 | 0.008 | 0.049 | <0.001 | <0.001 | 0.002 | 0.001 | <1 |
| A9587-8HRS | | 0.039 | 0.091 | 0.080 | 1 | 0.043 | 0.041 | <0.001 | <0.001 | 0.002 | 0.003 | <1 |
| A9587-1-300F | | 0.024 | 0.020 | 0.030 | 1 | 0.008 | 0.013 | <0.001 | <0.001 | 0.004 | 0.002 | <1 |
| A9587-6-300F | | 0.081 | 0.022 | 0.034 | 2 | 0.013 | 0.072 | <0.001 | <0.001 | 0.004 | 0.002 | <1 |
| A9587-8-300F | | 0.056 | 0.114 | 0.119 | 1 | 0.060 | 0.028 | <0.001 | <0.001 | 0.004 | 0.005 | <1 |
| A9587-1NM | | 0.018 | 0.018 | 0.036 | 1 | 0.008 | 0.002 | <0.001 | <0.001 | 0.005 | 0.002 | <1 |
| A9587-6NM | | 0.011 | 0.012 | 0.028 | <1 | 0.010 | 0.009 | <0.001 | <0.001 | 0.006 | 0.001 | <1 |
| A9587-8NM | | 0.013 | 0.052 | 0.112 | 1 | 0.058 | 0.006 | <0.001 | <0.001 | 0.004 | 0.003 | <1 |

Note: 1 = EQ01B
 6 = 106B
 8 = 108B



CERTIFICATE OF ANALYSIS



ALS Chemex

Batch: ST40699
Sub Batch: 0

CONTACT: MR GERHARD KRUMMEI
CLIENT: JJ MCDONALD & SONS MINING P/L
ADDRESS: SUITE 28
487 ST KILDA ROAD
MELBOURNE VICTORIA 3004

LABORATORY: BRISBANE
DATE RECEIVED: 20/05/2005
DATE COMPLETED: 27/05/2005
SAMPLE TYPE: SAND
No. of SAMPLES: 4

ORDER No.: 224181

PROJECT:

COMMENTS

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

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Signatory

LABORATORIES

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Alice Springs Perth
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NORTH AMERICA

Vancouver Fairbanks Thunder Bay
Chihuahua Guadalajara Toronto
Elko Reno

SOUTH AMERICA

Santiago Calama Mendoza
Antofagasta Copiapo Quito
Arequipa Lima

AFRICA

Mwanza



CERTIFICATE OF ANALYSIS

Batch: ST40699
 Sub Batch: 0
 Date of Issue: 27/05/2005
 Client: JJ MCDONALD & SONS MINING P/L
 Client Reference:

| SAMPLE | Element Unit Method | Al2O3 % M289-1 | Fe2O3 % M289-1 | TiO2 % M289-1 | MgO % M289-1 | CaO % M289-1 | Na2O % M289-1 | K2O % M289-1 | Co ppm M289-1 | Cr2O3 ppm M289-1 | MnO % M289-1 | V2O5 % M289-1 |
|------------|---------------------------|----------------------|----------------------|---------------------|--------------------|--------------------|---------------------|--------------------|---------------------|------------------------|--------------------|---------------------|
| A9717-1SAW | LOR | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 1 | 1 | 0.001 | 0.001 |
| A9717-6OAW | | 0.015 | 0.015 | 0.004 | 0.007 | 0.027 | 0.006 | <0.001 | <1 | 1 | <0.001 | <0.001 |
| A9717-6SAW | | 0.013 | 0.005 | 0.010 | 0.010 | 0.030 | 0.004 | <0.001 | <1 | <1 | <0.001 | <0.001 |
| A9717-8SAW | | 0.012 | 0.005 | 0.009 | 0.008 | 0.023 | 0.003 | <0.001 | <1 | <1 | <0.001 | <0.001 |
| | | 0.042 | 0.006 | 0.008 | 0.051 | 0.096 | 0.004 | 0.002 | <1 | <1 | <0.001 | <0.001 |

Note: 1 = EQ01B
 6 = 106B
 8 = 108B

SAW = Sulphuric Acid Wash
 OAW = Oxalic Acid Wash

CERTIFICATE OF ANALYSIS



ALS Chemex

Batch: ST40731
Sub Batch: 0

CONTACT: MR GERHARD KRUMMEI
CLIENT: JJ MCDONALD & SONS MINING P/L
ADDRESS: SUITE 28
487 ST KILDA ROAD
MELBOURNE VICTORIA 3004

LABORATORY: BRISBANE
DATE RECEIVED: 20/06/2005
DATE COMPLETED: 29/06/2005
SAMPLE TYPE: SAND
No. of SAMPLES: 9

ORDER No.: 224182

PROJECT:

COMMENTS

NOTES

This is the Final Report and supersedes any preliminary reports with this batch number.
Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release.

ISSUING LABORATORY: BRISBANE

Address
32 Shand Street
Stafford QLD 4053
Australia

Phone: 61-7-3243 7222
Fax: 61-7-3243 7254
Email: shaun.kenny@alschemex.com

Signatory

LABORATORIES

AUSTRALIA

Brisbane Orange
Alice Springs Perth
Kalgoorlie Townsville

NORTH AMERICA

Vancouver Fairbanks Thunder Bay
Chihuahua Guadalajara Toronto
Elko Reno

SOUTH AMERICA

Santiago Calama Mendoza
Antofagasta Copiapo Quito
Arequipa Lima

AFRICA

Mwanza



CERTIFICATE OF ANALYSIS

Batch: ST40731
 Sub Batch: 0
 Date of Issue: 29/06/2005
 Client: JJ McDONALD & SONS MINING P/L
 Client Reference:

| SAMPLE | Element Unit Method LOR | Al2O3 % M289-1 0.001 | Fe2O3 % M289-1 0.001 | TiO2 % M289-1 0.001 | Cr2O3 ppm M289-1 1 | CaO % M289-1 0.001 | MgO % M289-1 0.001 | Na2O % M289-1 0.001 | K2O % M289-1 0.001 | Co ppm M289-1 1 | MnO % M289-1 0.001 | V2O5 % M289-1 0.001 |
|------------------|----------------------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|-----------------------------|-----------------------------|------------------------------|-----------------------------|--------------------------|-----------------------------|------------------------------|
| - A9717-7SAW | | 0.020 | 0.006 | 0.005 | 1 | 0.070 | 0.034 | 0.004 | 0.002 | <1 | <0.001 | <0.001 |
| AIS20/250/WT | | 0.003 | 0.001 | <0.001 | <1 | 0.032 | 0.013 | 0.001 | <0.001 | <1 | <0.001 | <0.001 |
| AIS20/250/NM-1 | | 0.003 | 0.001 | <0.001 | <1 | 0.034 | 0.014 | 0.001 | <0.001 | <1 | <0.001 | <0.001 |
| AIS20/250/NM-2 | | 0.003 | 0.001 | <0.001 | <1 | 0.034 | 0.014 | 0.001 | <0.001 | <1 | <0.001 | <0.001 |
| A9717-20/250-SAW | | 0.003 | 0.001 | <0.001 | <1 | 0.030 | 0.013 | 0.003 | <0.001 | <1 | <0.001 | <0.001 |

Note: 7 = I07B

SAW = Sulphuric Acid Wash

APPENDIX 3

FIRE ASSAY RESULTS



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JJ MCDONALD & SONS MINING P/L

STAFFORD

Page-no: 1

Attention: MR GERHARD KRUMMEI
YourOrder:
SampleType:SAND
Project:

Batch-no: 40743
Sub-batch:0
No-samples:2
Received: 30/06/05
Checked: 18/07/05

| Element Unit Method | SiO2 % ME-PKG86 | Al2O3 % ME-PKG86 | Fe2O3 % ME-PKG86 | TiO2 % ME-PKG86 | Cr2O3 % ME-PKG86 | CaO % ME-PKG86 | MgO % ME-PKG86 | K2O % ME-PKG86 |
|---------------------------|-----------------------|------------------------|------------------------|-----------------------|------------------------|----------------------|----------------------|----------------------|
| AMS 20/250/W1 | 99.9 | 0.002 | 0.002 | 0.001 | <1.0 | 0.024 | 0.012 | <0.001 |
| AMS 20/250/NM-1 | 99.9 | 0.002 | 0.002 | 0.001 | <1.0 | 0.025 | 0.012 | <0.001 |

33

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Limit of Detection 0.1 0.001 0.001 0.001 1.0 0.001 0.001 0.001
 SiO2 analysis by balance.



JJ McDONALD & SONS MINING P/L

Attention: MR GERHARD KRUMMEI
Your Order:
Sample Type: SAND
Project:

STAFFORD

Page-no: 2

Batch-no: 40743
Sub-batch: 0
No-samples: 2
Received: 30/06/05
Checked: 18/07/05

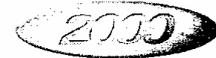
| Element Unit Method | Na2O * ME-PKG86 | LOI * CA-GRA |
|---------------------------|-----------------------|--------------------|
| AIS 20/250/WF | <0.001 | 0.07 |
| AIS 20/250/NM-1 | <0.001 | 0.07 |

Limit of Detection 0.001 0.01

APPENDIX 4

SIZING ANALYSES

MASTERSIZER

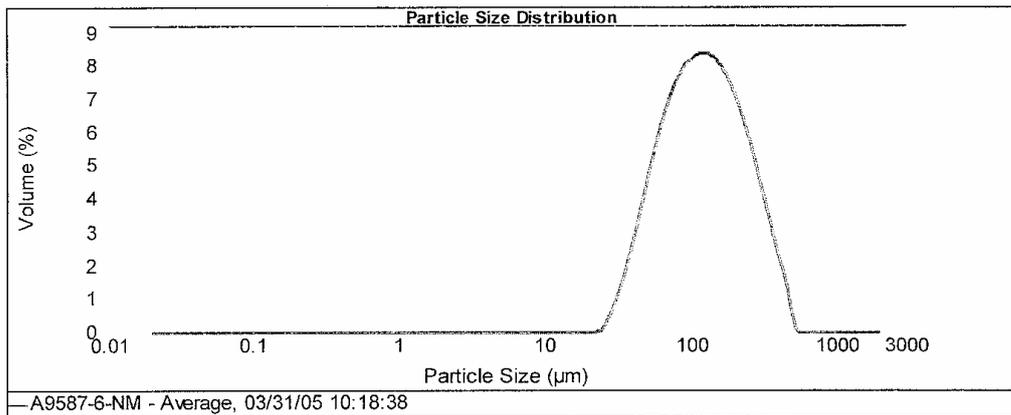


Result Analysis Report

Sample Name: A9587-6-NM - Average **SOP Name:** **Measured:** 03/31/05 10:18:38
Sample Source & type: X106B **Measured by:** Stephen Carey **Analysed:** 03/31/05 10:18:40
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 13.64 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.0... um **Weighted Residual:** 0.459 %
Dispersant RI: 1.330 **Result Emulation:** Off

Concentration: 0.2067 %Vol **Vol. Weighted Mean D[4,3]:** 149.007 um **Specific Surface Area:** 0.0598 m²/g
Span : 1.928 **Uniformity:** 0.59 **Surface Weighted Mean D[3,2]:** 100.362 um
Result units: Volume
d(0.1): 52.273 um **d(0.5):** 122.379 um **d(0.9):** 288.165 um



| Size (µm) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.106 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 7.54 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.00 | 13.183 | 0.00 | 138.038 | 7.37 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.00 | 15.136 | 0.00 | 158.489 | 7.05 | 1659.587 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.00 | 17.378 | 0.00 | 181.970 | 6.55 | 1905.461 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.905 | 0.00 | 19.853 | 0.00 | 208.900 | 5.90 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.909 | 0.06 | 239.883 | 5.09 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 0.48 | 275.423 | 4.17 | 2894.032 | 0.00 |
| 0.026 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 1.07 | 316.228 | 3.25 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 1.87 | 363.078 | 2.30 | 3901.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 2.81 | 416.869 | 1.48 | 4365.158 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.365 | 0.00 | 45.709 | 3.83 | 478.630 | 0.28 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 4.82 | 549.541 | 0.00 | 5754.399 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 5.72 | 630.957 | 0.00 | 6606.934 | 0.00 |
| 0.060 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 6.45 | 724.438 | 0.00 | 7585.776 | 0.00 |
| 0.069 | 0.00 | 0.724 | 0.00 | 7.586 | 0.00 | 79.433 | 7.01 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.00 | 8.710 | 0.00 | 91.201 | 7.37 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.00 | 10.000 | 0.00 | 104.713 | 7.54 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 7.54 | 1258.925 | 0.00 | | |

Operator notes: -300 micron nonmags

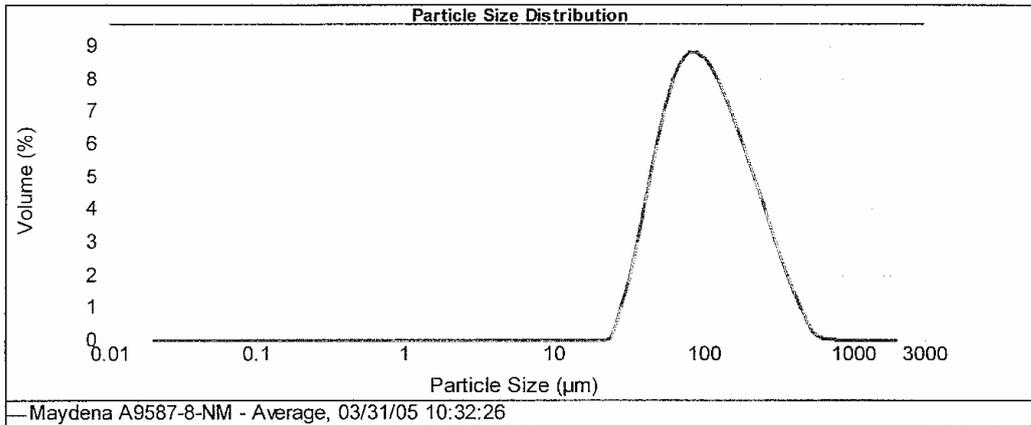
MASTERSIZER 2000

Result Analysis Report

Sample Name: Maydena A9587-8-NM - Average **SOP Name:** **Measured:** 03/31/05 10:32:26
Sample Source & type: X108B **Measured by:** Stephen Carey **Analysed:** 03/31/05 10:32:27
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 17.91 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 0.409 %
Dispersant RI: 1.330 **Result Emulation:** Off

Concentration: 0.2388 %Vol **Vol. Weighted Mean D[4,3]:** 129.071 um **Specific Surface Area:** 0.0694 m²/g
Span : 2.070 **Uniformity:** 0.637 **Surface Weighted Mean D[3,2]:** 86.393 um
Result units: Volume
d(0.1): 46.110 um **d(0.5):** 100.653 um **d(0.9):** 254.462 um



| Size (µm) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 7.02 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.00 | 13.183 | 0.00 | 138.038 | 6.42 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.00 | 15.136 | 0.00 | 158.489 | 5.77 | 1659.587 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.00 | 17.378 | 0.00 | 181.970 | 5.07 | 1905.461 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.905 | 0.00 | 19.953 | 0.00 | 208.930 | 4.36 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.909 | 0.11 | 239.883 | 3.62 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 0.87 | 275.423 | 2.89 | 2884.032 | 0.00 |
| 0.026 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 1.73 | 316.228 | 2.17 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 2.87 | 363.078 | 1.50 | 3801.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 4.11 | 416.869 | 0.95 | 4365.158 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.385 | 0.00 | 45.709 | 5.34 | 478.630 | 0.42 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 6.42 | 549.541 | 0.08 | 5754.399 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 7.24 | 630.957 | 0.01 | 6606.934 | 0.00 |
| 0.060 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 7.75 | 724.436 | 0.00 | 7585.776 | 0.00 |
| 0.069 | 0.00 | 0.724 | 0.00 | 7.586 | 0.00 | 79.433 | 7.94 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.00 | 8.710 | 0.00 | 91.201 | 7.84 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.00 | 10.000 | 0.00 | 104.713 | 7.51 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | | 1258.925 | | | |

Operator notes: -300 micron nonmags

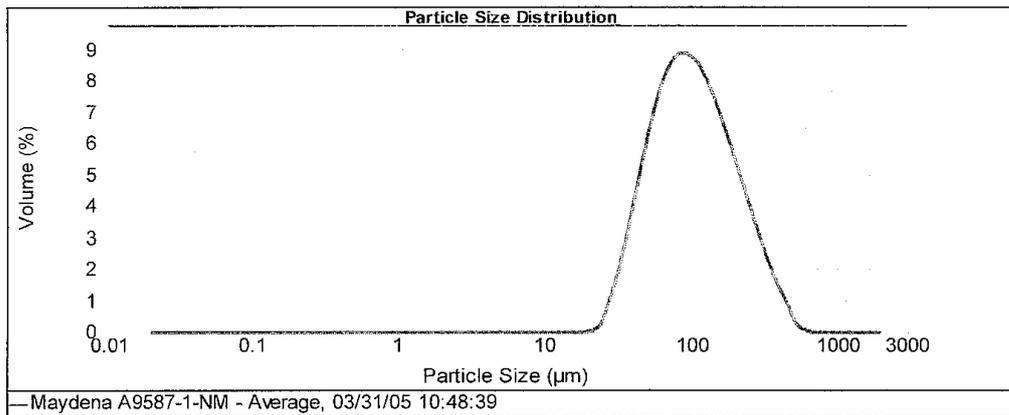
MASTERSIZER 2000

Result Analysis Report

Sample Name: Maydena A9587-1-NM - Average **SOP Name:** **Measured:** 03/31/05 10:48:39
Sample Source & type: EQ01B **Measured by:** Stephen Carey **Analysed:** 03/31/05 10:48:41
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 13.58 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 0.380 %
Dispersant RI: 1.330 **Result Emulation:** Off

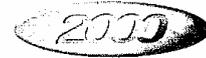
Concentration: 0.1747 %Vol **Vol. Weighted Mean D[4,3]:** 126.958 um **Specific Surface Area:** 0.0702 m²/g
Span: 2.021 **Uniformity:** 0.624 **Surface Weighted Mean D[3,2]:** 85.412 um
Result units: Volume
d(0.1): 45.641 um **d(0.5):** 100.070 um **d(0.9):** 247.918 um



| Size (µm) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.105 | 0.00 | 1.036 | 0.00 | 11.482 | 0.00 | 120.226 | 7.17 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.00 | 13.183 | 0.00 | 138.038 | 6.54 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.00 | 15.136 | 0.00 | 158.489 | 5.82 | 1659.557 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.00 | 17.379 | 0.00 | 181.970 | 5.05 | 1905.461 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.905 | 0.00 | 19.953 | 0.04 | 200.930 | 4.27 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.909 | 0.25 | 239.883 | 3.48 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 0.97 | 275.423 | 2.73 | 2884.032 | 0.00 |
| 0.026 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 1.81 | 316.228 | 2.02 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 2.90 | 363.078 | 1.38 | 3801.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 4.09 | 416.869 | 0.91 | 4365.168 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.365 | 0.00 | 45.709 | 5.28 | 478.630 | 0.32 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 6.35 | 549.541 | 0.06 | 5754.399 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 7.20 | 630.957 | 0.00 | 6606.994 | 0.00 |
| 0.060 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 7.75 | 724.436 | 0.00 | 7585.776 | 0.00 |
| 0.069 | 0.00 | 0.724 | 0.00 | 7.586 | 0.00 | 79.433 | 8.00 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.00 | 8.710 | 0.00 | 91.201 | 7.96 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.00 | 10.000 | 0.00 | 104.713 | 7.66 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 7.66 | 1258.925 | 0.00 | | |

Operator notes: -300 micron nonmags

MASTERSIZER

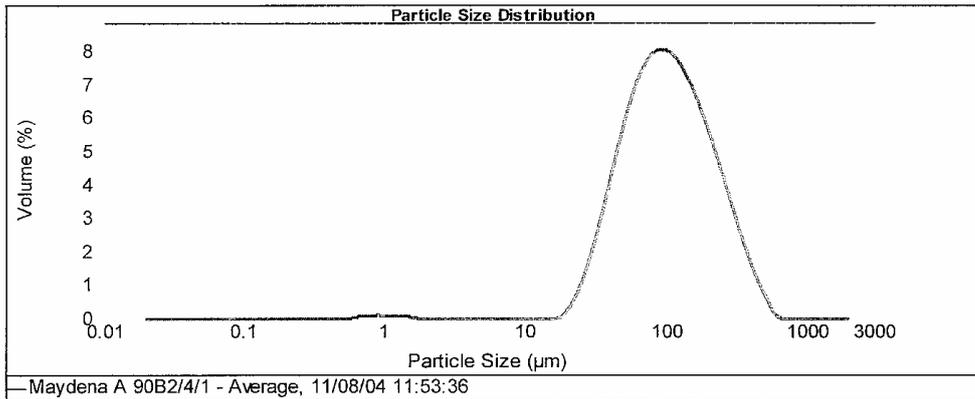


Result Analysis Report

Sample Name: Maydena A 90B2/4/1 - Average **SOP Name:** **Measured:** 11/08/04 11:53:36
Sample Source & type: Works 90B **Measured by:** Stephen Carey **Analysed:** 11/08/04 11:53:37
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 13.86 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 0.299 %
Dispersant RI: 1.330 **Result Emulation:** Off

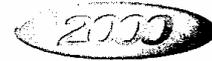
Concentration: 0.1270 %Vol **Vol. Weighted Mean D[4,3]:** 131.024 um **Specific Surface Area:** 0.1 m²/g
Span: 2.188 **Uniformity:** 0.675 **Surface Weighted Mean D[3,2]:** 59.835 um
Result units: Volume
d(0.1): 41.785 um **d(0.5):** 101.703 um **d(0.9):** 264.343 um



| Size (µm) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.105 | 0.00 | 1.096 | 0.07 | 11.482 | 0.00 | 120.226 | 6.78 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.07 | 13.183 | 0.00 | 138.038 | 6.34 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.07 | 15.136 | 0.00 | 158.489 | 5.80 | 1659.587 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.05 | 17.378 | 0.00 | 181.970 | 5.18 | 1905.451 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.905 | 0.00 | 19.963 | 0.09 | 208.930 | 4.52 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.909 | 0.39 | 239.893 | 3.80 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 0.85 | 275.423 | 3.07 | 2894.032 | 0.00 |
| 0.026 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 1.47 | 316.228 | 2.35 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 2.26 | 363.078 | 1.68 | 3901.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 3.15 | 416.869 | 1.08 | 4365.158 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.365 | 0.00 | 45.709 | 4.09 | 478.630 | 0.62 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 5.83 | 549.541 | 0.13 | 5754.389 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 6.50 | 630.957 | 0.00 | 6606.934 | 0.00 |
| 0.050 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 6.96 | 724.436 | 0.00 | 7585.776 | 0.00 |
| 0.059 | 0.00 | 0.724 | 0.04 | 7.586 | 0.00 | 79.433 | 7.21 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.07 | 8.710 | 0.00 | 91.201 | 7.25 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.08 | 10.000 | 0.00 | 104.713 | 7.10 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.08 | 11.482 | 0.00 | 120.226 | 7.10 | 1259.925 | 0.00 | | |

Operator notes:

MASTERSIZER

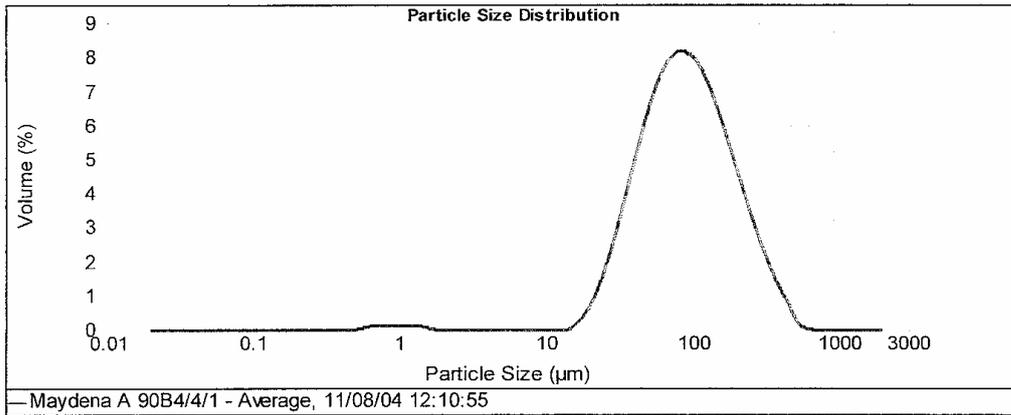


Result Analysis Report

Sample Name: Maydena A 90B4/4/1 - Average **SOP Name:** **Measured:** 11/08/04 12:10:55
Sample Source & type: Works 90B **Measured by:** Stephen Carey **Analysed:** 11/08/04 12:10:56
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 16.43 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.000 um **Weighted Residual:** 0.278 %
Dispersant RI: 1.330 **Result Emulation:** Off

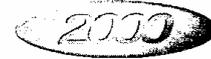
Concentration: 0.1231 %Vol **Vol. Weighted Mean D[4,3]:** 114.288 um **Specific Surface Area:** 0.127 m²/g
Span: 2.191 **Uniformity:** 0.679 **Surface Weighted Mean D[3,2]:** 47.079 um
Result units: Volume
d(0.1): 36.054 um **d(0.5):** 88.535 um **d(0.9):** 230.023 um



| Size (um) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.105 | 0.00 | 1.096 | 0.09 | 11.482 | 0.00 | 120.226 | 6.42 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.09 | 13.183 | 0.00 | 138.038 | 5.79 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.08 | 15.136 | 0.00 | 158.489 | 5.09 | 1659.587 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.00 | 17.378 | 0.14 | 181.970 | 4.34 | 1905.451 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.905 | 0.00 | 19.953 | 0.47 | 208.930 | 3.61 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.906 | 0.90 | 239.883 | 2.91 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 1.49 | 275.423 | 2.25 | 2884.032 | 0.00 |
| 0.026 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 2.22 | 316.228 | 1.66 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 3.06 | 363.078 | 1.14 | 3801.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 3.97 | 418.869 | 0.74 | 4365.158 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.365 | 0.00 | 45.709 | 4.87 | 478.630 | 0.24 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 5.71 | 549.541 | 0.04 | 5754.399 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 6.42 | 630.957 | 0.00 | 6606.934 | 0.00 |
| 0.060 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 6.96 | 724.436 | 0.00 | 7585.776 | 0.00 |
| 0.069 | 0.00 | 0.724 | 0.00 | 7.586 | 0.00 | 79.433 | 7.29 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.00 | 8.710 | 0.00 | 91.201 | 7.39 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.00 | 10.000 | 0.00 | 104.713 | 7.26 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 6.92 | 1258.925 | 0.00 | | |

Operator notes:

MASTERSIZER

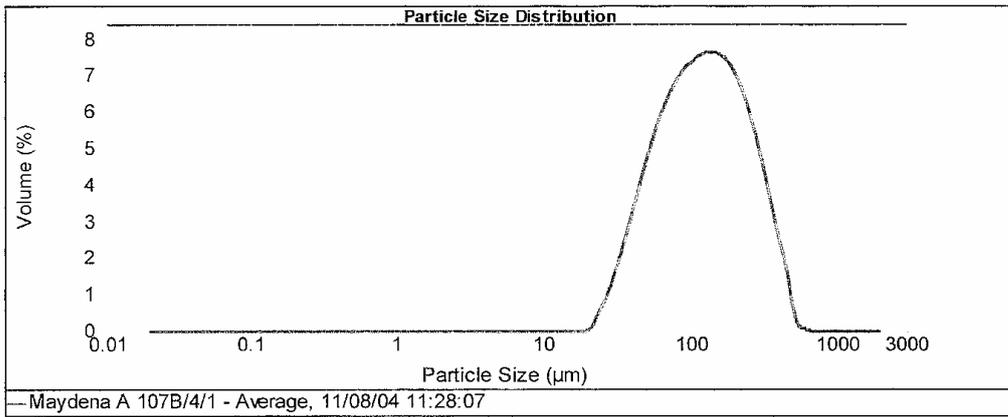


Result Analysis Report

Sample Name: Maydena A 107B/4/1 - Average **SOP Name:** **Measured:** 11/08/04 11:28:07
Sample Source & type: Works **Measured by:** Stephen Carey **Analysed:** 11/08/04 11:28:08
Sample bulk lot ref: 1 **Result Source:** Averaged

Particle Name: Silica 0.1 **Accessory Name:** Hydro 2000MU (A) **Obscuration:** 13.26 %
Particle RI: 1.544 **Absorption:** 0.1 **Analysis model:** General purpose
Dispersant Name: Water **Size range:** 0.020 to 2000.0... um **Weighted Residual:** 0.371 %
Dispersant RI: 1.330 **Result Emulation:** Off

Concentration: 0.1900 %Vol **Vol. Weighted Mean D[4,3]:** 150.861 um **Specific Surface Area:** 0.063 m²/g
Span: 2.053 **Uniformity:** 0.632 **Surface Weighted Mean D[3,2]:** 95.258 um
Result units: Volume
d(0.1): 47.257 um **d(0.5):** 122.732 um **d(0.9):** 299.248 um



| Size (µm) | Volume In % |
|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|
| 0.010 | 0.00 | 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 6.88 | 1258.925 | 0.00 |
| 0.011 | 0.00 | 0.120 | 0.00 | 1.259 | 0.00 | 13.183 | 0.00 | 138.038 | 6.87 | 1445.440 | 0.00 |
| 0.013 | 0.00 | 0.138 | 0.00 | 1.445 | 0.00 | 15.136 | 0.00 | 158.489 | 6.74 | 1659.587 | 0.00 |
| 0.015 | 0.00 | 0.158 | 0.00 | 1.660 | 0.00 | 17.378 | 0.00 | 181.970 | 6.45 | 1905.461 | 0.00 |
| 0.017 | 0.00 | 0.182 | 0.00 | 1.906 | 0.00 | 19.953 | 0.10 | 208.930 | 5.98 | 2187.762 | 0.00 |
| 0.020 | 0.00 | 0.209 | 0.00 | 2.188 | 0.00 | 22.909 | 0.56 | 239.683 | 5.31 | 2511.886 | 0.00 |
| 0.023 | 0.00 | 0.240 | 0.00 | 2.512 | 0.00 | 26.303 | 0.00 | 275.423 | 3.54 | 2884.032 | 0.00 |
| 0.025 | 0.00 | 0.275 | 0.00 | 2.884 | 0.00 | 30.200 | 1.03 | 316.226 | 4.48 | 3311.311 | 0.00 |
| 0.030 | 0.00 | 0.316 | 0.00 | 3.311 | 0.00 | 34.674 | 1.69 | 363.078 | 3.54 | 3801.894 | 0.00 |
| 0.035 | 0.00 | 0.363 | 0.00 | 3.802 | 0.00 | 39.811 | 2.45 | 416.669 | 2.55 | 4355.158 | 0.00 |
| 0.040 | 0.00 | 0.417 | 0.00 | 4.365 | 0.00 | 45.709 | 3.26 | 478.630 | 1.69 | 5011.872 | 0.00 |
| 0.046 | 0.00 | 0.479 | 0.00 | 5.012 | 0.00 | 52.481 | 4.05 | 549.541 | 0.48 | 5754.399 | 0.00 |
| 0.052 | 0.00 | 0.550 | 0.00 | 5.754 | 0.00 | 60.256 | 4.79 | 630.957 | 0.05 | 6606.934 | 0.00 |
| 0.050 | 0.00 | 0.631 | 0.00 | 6.607 | 0.00 | 69.183 | 5.42 | 724.436 | 0.00 | 7585.776 | 0.00 |
| 0.059 | 0.00 | 0.724 | 0.00 | 7.586 | 0.00 | 79.433 | 5.93 | 831.764 | 0.00 | 8709.636 | 0.00 |
| 0.079 | 0.00 | 0.832 | 0.00 | 8.710 | 0.00 | 91.201 | 6.32 | 954.993 | 0.00 | 10000.000 | 0.00 |
| 0.091 | 0.00 | 0.955 | 0.00 | 10.000 | 0.00 | 104.713 | 6.60 | 1096.478 | 0.00 | | |
| 0.105 | 0.00 | 1.096 | 0.00 | 11.482 | 0.00 | 120.226 | 6.79 | 1258.925 | 0.00 | | |

Operator notes:

APPENDIX 5

ACID GENERATION DETERMINATIONS

| | |
|-----------|--|
| JOB I.D. | A9712 : J. J. McDONALD & SONS MINING PTY LTD |
| SAMPLES | SAMPLE 106B SOLIDS |
| TEST WORK | ANALYSIS |

Paste analysis

| Sample | pH | Conductivity (mS/cm) |
|--------|------|----------------------|
| +300µm | 8.26 | 0.56 |
| Mags | 7.80 | 0.31 |
| -38µm | 7.48 | 0.28 |

Acid Generation Analysis

| Sample | ANC (kg H ₂ SO ₄ / t Ore) | NAG (kg H ₂ SO ₄ / t Ore) | NAPP (kg H ₂ SO ₄ / t Ore) |
|--------|--|--|---|
| +300µm | < 0 | < 1 | Nil |
| Mags | < 0 | < 1 | Nil |
| -38µm | < 0 | < 1 | Nil |

ANC : Acid Neutralising Capacity : the capacity to neutralise sulphuric acid

NAG : Net Acid Generation : the net acid produced by the sample under oxidising conditions

NAPP : Net Acid Production Potential : total acid production potential less acid neutralising capacity

ILLUSTRATIONS

