

## PROJECT FACT SHEET

**Customer:** Iluka Resources Limited

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**Contractor:** Roche Mining (JR) Pty Ltd

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**Project:** Installation of Electrical & Communication Services including Instrumentation for Mineral Separation Plant

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**Completion:** November 2006

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**Project Profile:** The Mineral Separation Plant Project itself comprises an open-cut dry mining operation with a mining unit plant and wet concentrator plant at the Douglas Mine, 85km northwest of Hamilton. Following the mining and concentration processes, this intermediate product is then transported by road to the Heavy Mineral Separation Plant located at Hamilton.

As a result of the separation process at this plant, Zircon and Rutile is produced which is then sold to the domestic market or transported by road to Portland for export overseas.

**Nilsen Scope of Works:** The project involved the electrical and instrumentation installation associated with the construction and commissioning of a mineral sands separation plant for Iluka Resources Limited at Hamilton, Victoria.

In summary the project involved the installation of the following:

- 8,650m of cable ladder;
- 30,325m of steel conduit;
- 210,230m of cable;
- 6,002 cable terminations;
- 3,150 light fittings;
- 1,680 instruments and associated control cabling; and
- 1200 distribution boards / control panels; and
- 200,000 plus man=hours.
- A scope of works originally described through 70 drawings that expanded to greater than 5,000 drawings by project end.

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Nilsen was an integral part of the massive workforce delivering the Iluka Project. The project workforce peaked at approximately 700, which was a particularly challenging undertaking for all contractors involved given the remote location, the demand within the current market nationally for specialist resources and the industrial environment.

### Project Challenges:

Roche Mining's design was used for this industrial facility. The design was undertaken on a progressive basis, barely keeping ahead of the construction works. As a result of this approach, Nilsen were able to play a major consultative role in the electrical and instrumentation design.

### Installing an Appropriate Organisation and Skill Set

Nilsen identified that the key to a successful outcome both from a delivery and financial perspective was the deployment of a team of specialists who could deliver.

**A comprehensive Nilsen project organisation was established which reflected the importance of the project to the business. At the core of that organisation were:**

- 2 full-time Project Managers;
  - 1 full-time Estimator / Administrator;
  - 1 full-time Drawing Manager/Office Assistant;
  - 1 full time OH&S Representative;
  - 4 Foreman; and
  - 1 Instrumentation Specialist.
- These key staff were complemented by an average of 55, and at the work peak by 115 electricians.

This team was further supplemented by the:

- Divisional Manager who was instrumental in ensuring IR and OH&S issues were handled in an expeditious manner.
- A Systems Expert who designed and implemented systems especially for a project of this size.
- A Communications Expert who designed the appropriate satellite communications to ensure responsiveness of external support.

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- A Project Scheduler who assisted in setting up the appropriate scheduling systems.
- Contract Specialists who ensured that our contractual obligations were delivered.

### **Drawing Control System**

Nilsen designed a drawing control system to manage the many changes to the original design. The project commenced with approximately 70 drawings and by project end there were greater than 5000 drawings. The Drawing Control System was that Nilsen could understand the interdependency of drawings and design changes, track changes and the electrical integrity of those changes and most importantly demonstrate to our customer the value that Nilsen add.

### **Efficient Problem Resolution**

Nilsen in undertaking any project employs a proactive approach in seeking firstly to prevent and secondly to minimise the potential impact of any project issues.

**Added value accrued to customer because of Nilsen involvement :**

### **Components and Design Aspects**

A significant task for Nilsen involved the ongoing review of electrical and instrumentation design drawings as they were produced throughout the project. This ensured compliance with relevant Australian Standards and that any constructibility and maintainability issues were identified as early as possible and appropriately addressed.

### **Difficulties (e.g. access, environmental, client or design requirements) and how they were overcome (e.g. planning, expertise, management, innovation)**

Unique difficulties and issues related to the congested nature of the multiple work faces associated with a project with multiple critical paths. Again these were overcome through significant planning effort by the Nilsen Team.

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### **Development of applications or processes and innovative alternatives, practice or supplies to save time or money or create a more aesthetically appealing or better result using alternative methods of installation**

Due to the large number of cable terminations associated with this project, Nilsen developed a mechanism aimed at improving the efficiency of this often time consuming process

In addition, an approach was developed where the Nilsen workforce was divided into a number of specialist teams that focussed on the efficient execution of a single element of a multi-faceted task.

### **Quality assurance system (e.g. tailored or AS9001) plus proof of audit**

The primary objective of Nilsen is to provide products, services and processes that meet clients' needs and expectations in the most cost effective manner.

### **Coordination of Project**

The Iluka Project demanded that component, particularly instrumentation, be installed to meet the most stringent and exacting technical performance requirements.

### **Quality of Workmanship (e.g. final appearance, minimisation of defects)**

The Nilsen Team places significant emphasis on the quality of workmanship in delivering every project. Not only does it reflect the professional values of the Nilsen team, but it is also seen as being fundamental to achieving the client's objectives and as a key differentiator between Nilsen and many other players within the electrical industry.

Overall, these initiatives are just some examples of the dedication and ingenuity of the Nilsen Team on this project. In summary, the Iluka Project continually provided an environment which demanded a flexible and enquiring approach, and encouraged innovation and teamwork to deliver a project within a constantly changing and challenging environment.

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**Referees:** Mr Don Witham  
Roche Mining (JR) Pty Ltd

**Awards and Nominations:** Finalist – 2007 Victorian NECA Award, Industrial (Certificate of Commendation)

