INTERNATIONAL CYANIDE MANAGEMENT CODE
CYANIDE PRODUCTION

SUMMARY AUDIT REPORT

KWINANA PRODUCTION FACILITY

PREPARED FOR:

AUSTRALIAN GOLD REAGENTS PTY. LTD

Sept 2007

INDEPENDENT
METALLURGICAL
OPERATIONS
PTY LTD

TABLE OF CONTENTS

DESCRIPTION OF FACILITY 3
AUDITOR'S FINDINGS ..... 4 -13

DESCRIPTION OF FACILITIES

Name of Cyanide Production Facility:	Kwinana Sodium Cyanide Facility
Name of Facility Owner:	Australian Gold Reagents Pty. Ltd. (AGR)
Name of Facility Operator:	CSBP Ltd.
Name of Responsible Manager:	Michael Rodriguez
Address:	Kwinana Beach Road, Kwinana Western Australia, Australia, 6966
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Location and Description of Operation:

Australian Gold Reagents Pty. Ltd. (AGR) is the management company of the unincorporated joint venture between CSBP Ltd. and Coogee Chemicals Pty. Ltd. CSBP, part of Wesfarmers Ltd., is the major participant in the venture and acts as both plant operator and sales agent. Coogee Chemicals is a local manufacturer and distributor of industrial chemicals.

The AGR cyanide production facility is located within CSBP's fertiliser and chemicals complex at Kwinana, some 40 km south of Perth within the state of Western Australia. AGR produces and transports two different forms of sodium cyanide from the Kwinana production facility, namely solution and solids. Sodium cyanide solution is produced as a 30%wt liquid and solid sodium cyanide as a >97%, white briquette.

Sodium cyanide manufactured at the Kwinana site is used in gold mining operations within Australia, South East Asia, Africa and South America.

AUDITOR'S FINDINGS

This operation is

- ☑ **in full compliance**
- ☐ in substantial compliance **with the International Cyanide Management Code***
- ☐ not in compliance

Audit Company:	Independent Metallurgical Operations Pty. Ltd. (IMO) 22 Altona Street, West Perth Western Australia, 6005 Tel: +61 1300 724 271 Fax: +61 8 9322 1808 www.indmetops.com.au
Date(s) of Audit:	Inclusive of the period March 6 to 9, 2007
Audit Team Leader:	R. John McKenna (mckennaassocs@yahoo.com.au)

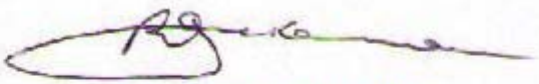
Names and Signatures of Other Auditors:

Name of Auditor	Signature	Date
Raymond L. Biehl		September 13, 2007
William Danaher		September 13, 2007

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Detailed Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Production Operations and using standard and accepted practices for health, safety and environmental audits.

AGR Kwinana
Production Facility



September 13, 2007

Signature of Lead Auditor

WITNESS TO ABOVE

(DORIS ANN ALLSOP Jr C.DEC)

AGR Kwinana
Production Facility

September 13, 2007

Signature of Lead Auditor

1. OPERATIONS: ***Design, construct and operate cyanide production facilities to prevent release of cyanide.***

Production Practice 1.1: *Design and construct cyanide production facilities consistent with sound, accepted engineering practices and quality control, quality assurance procedures.*

The operation is

- ☑ **in full compliance with Production Practice 1.1**
- ☐ in substantial compliance with
- ☐ not in compliance with

Basis for this Finding:

The two liquid plants and the solids plant were designed by Shedden - UDHE. The liquid plants were commissioned in 1988 and 1996 respectively with the solids plant being commissioned in 2002. Since commissioning, modifications and upgrades have been undertaken in all three plants. Comprehensive QA/QC documentation for all three plants was available in the Chemicals East Technical and Project Engineering libraries.

AGR can demonstrate that quality control and quality assurance programmes have been implemented during the construction of its cyanide production and storage facilities. Suitable engineering documents were available for review by the auditors.

Materials of construction used in the facilities were considered to be adequate, both in terms of those facilities used for the storage and movement of cyanide as well as those facilities used to catch and trap cyanide spills e.g. concrete surfaces were in good condition, sealed, etc.

Potential routes of release of cyanide from the plant are from the incinerator stack, solids plant stack, through waste water, through storm water from the liquids plant and from the solids plant. All of the above other than storm water are protected by interlocks and emergency shutdowns. Storm water is pumped to ponds and tested before release.

Spill containment measures were in place at the production facility but, in addition, any cyanide spill or waste water is ultimately transferred to the waste water management facilities at the CSBP Limited site, and this provides an additional level of control in relation to cyanide discharge.

Production Practice 1.2: Develop and implement plans and procedures to operate cyanide production facilities in a manner that prevents accidental releases.

	☑ **in full compliance with**	**Production Practice 1.2**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

The facility has in place extensive documentation in relation to the operation of the facility. These documents were controlled documents and available within an electronic document retrieval system. Suitable preventative maintenance programmes were in place for general maintenance and also proof testing of critical process trips and alarms. Procedures were in place to prevent unauthorised or unregulated discharge to the environment and, as noted, there is an additional level of control through intervention at the CSBP operation.

In addition, a management of change process was in place to ensure that any changes to the facilities underwent appropriate reviews.

Cyanide is stored in suitable locations with appropriate security controls to prevent public access.

Evidence was also available to indicate that procedures were in place to ensure that cyanide is packaged and transported in a manner that is consistent with the requirements of the destination jurisdiction.

Production Practice 1.3: Inspect cyanide production facilities to ensure their integrity and prevent accidental releases

	☑ **in full compliance with**	**Production Practice 1.3**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

Evidence was available to indicate that the operation has practices in place to ensure the integrity of cyanide containment measures. This involves a combination of preventative maintenance programmes and regular operator inspections. The Plant Inspection and Recommendation reports are Corrective Action Reports where the progress of actions is logged, monitored, closed off and filed.

2. WORKER SAFETY: Protect workers' health and safety from exposure to cyanide.

Production Practice 2.1: Develop and implement procedures to protect plant personnel from exposure to cyanide.

	☑ **in full compliance with**	**Production Practice 2.1**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

Standard operating procedures have been written for cyanide related tasks from receipt of ammonia, natural gas and caustic soda, through to packaging and storage of solid sodium cyanide to shipping of liquid and solid sodium cyanide. Emergency procedures have also been developed.

Worker input and involvement in developing and evaluating health and safety procedures is achieved through consultation through participation in safety committees, development of Job Safety Analyses, representation in process improvement teams and participation in team based risk assessments.

Gas detection equipment was available. In the control room the units have docking stations where the calibration and the instrument condition is monitored and an electronic log is maintained. Fixed and personal monitoring of the workforce in relation to cyanide exposure is undertaken and suitable evidence was available.

Controls and communications systems have been incorporated to include requirements for an observer to be present during loading of liquid cyanide into rail and road isotainers, man down alarms located throughout the two liquid plants, safety shower alarms installed throughout the facility, two-way radio communication between workers, control room and first aid post, and the confined space permit system.

All new employees undergo health assessments.

Decontamination facilities are available at the site and warning signs are present and information included in inductions in relation to the wearing of Personal Protective Equipment (PPE) and controls on smoking, eating and drinking.

Production Practice 2.2: Develop and implement plans and procedures for rapid and effective response to cyanide exposure.

	☑ **in full compliance with**	**Production Practice 2.2**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

The AGR sodium cyanide production facility is part of the larger CSBP production facility located at Kwinana. In addition to the production of sodium cyanide, a range of other dangerous goods and toxic substances are produced at the works. Therefore, the overall strategy in relation to emergency response is that there is an emergency response team that is formed by the works, i.e. the parent company. This response team is devoted to dealing with and addressing emergencies at any location on the works.

In addition to the overall emergency response procedures, combined safety showers and low pressure eye wash stations are located throughout the facility. The procedures, reagents and apparatus required for cyanide poisoning are held at the plant control room. Oxiviva and Oxiports are located throughout the plant site. The oxyviva/port units are maintained by an independent contractor. Units examined were found to be in good condition.

There is a registered occupational health and safety nurse, three paramedics and designated trained personnel on call. Additional support is available from the CSBP site. The medical procedures have been reviewed by two specialist occupational physicians. There is also a process of annual meetings between the company medical officer and the nearby hospital emergency department.

Local “man down” emergency drills are undertaken in the plant. Larger scale hazardous materials emergencies are addressed by the overall CSBP Emergency Plan.

A permit to work system is in place to minimise the risk of exposure of personnel to contents within pipes, tanks, etc. In addition, tanks and most pipelines are labeled and there is an ongoing programme of improvement of the quality of labeling.

3. MONITORING: ***Ensure that process controls are protective of the environment.***

Production Practice 3.1: *Conduct environmental monitoring to confirm that planned or unplanned releases of cyanide do not result in adverse impacts.*

The operation is

☑ **in full compliance with Production Practice 3.1**

☐ in substantial compliance with

☐ not in compliance with

Basis for this Finding:

There is no direct discharge to surface water. There are two discharge streams, effluent and storm water. Effluent water treated with peroxide is analysed and, if there is no detectable cyanide, it is pumped to whole of site storage ponds. Storm water is pumped to storage ponds. A license for discharge of effluent to Cockburn Sound is available. This discharge includes other materials from the CSBP site. The company has a license to discharge water directly to surface water but has elected not to do so.

All operations are conducted on concrete surfaces. Free cyanide levels are analysed in the production bore. The last monitoring results revealed that all free cyanide concentrations in groundwater were within jurisdictional compliance levels. The plant has a Water and Rivers Commission Licence to use ground water for irrigation and plant water. There is no evidence that seepage has caused exceedance.

The solids plant has a scrubber and HCN monitors. The liquid plant emissions are from the unreacted gases. The energy potential of these gases is realized through combustion in incinerators. External consultants undertake stack monitoring every 3 months. All results are within compliance.

4. TRAINING: ***Train workers and emergency response personnel to manage cyanide in a safety and environmentally protective manner.***

Production Practice 4.1: *Train employees to operate the plant in a manner that minimises the potential for cyanide exposures and releases.*

The operation is

☑ **in full compliance with Production Practice 4.1**

☐ in substantial compliance with

☐ not in compliance with

Basis for this Finding:

AGR has a structured training process in place for all operators and other personnel. In relation to operators, competency is subdivided in three levels – A, B and C. At lower competency levels, the operator is given less scope for activity and there is a greater level of peer review, mentoring and a buddy system. In order to transition from one level to another, the operator must demonstrate competency to a Level C operator, complete appropriate assessments and then have the overall process reviewed and signed off by the Plant Engineer.

Other forms of training include local area inductions, new worker briefings and safety meetings. Training also includes selection and use of PPE.

It is noted that comprehensive training records were not available for all personnel for all types of training delivered. Nevertheless, significant training records are available and there is a current programme in place that will finalise the process of documentation of training records (either by retraining or use of recognition of prior learning).

Production Practice 4.2: Train employees to respond to cyanide exposures and releases.

	☑ **in full compliance with**	**Production Practice 4.2**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

Personnel are briefed on emergency response requirements as part of the site induction. As noted previously, the structure of the emergency response programme is such that plant operators are not involved in the first line response to a cyanide plant emergency. This is addressed by the CSBP emergency response team.

If an emergency does occur, the expectation is that the cyanide plant operators will return to the control room and attempt to make the plant safe, while at the same time raising the alarm and initiating the work's Emergency Plan. Requirements are addressed in operator training. "Man down" alarms are available in the plant and operators are expected to respond to these. Emergency drills have been undertaken to test the application of the "man down" alarms and an ongoing programme of drills and reviews was sighted. As noted previously, emergency response kits are also available within the control room.

5. EMERGENCY RESPONSE: Protect communities and the environment through the development of emergency response strategies and capabilities.

Production Practice 5.1: Prepare detailed emergency response plans for potential cyanide releases.

	☑ **in full compliance with**	**Production Practice 5.1**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

The AGR sodium cyanide production facility is part of the larger CSBP production facility located at Kwinana. In addition to the production of sodium cyanide, a range of other dangerous goods and toxic substances are produced at the works. Therefore, the overall strategy in relation to emergency response is that there is an emergency response team that is formed by the works, i.e. by the parent company, and this response team is devoted to dealing with and addressing emergencies at any location in the works.

Overall the works operates a tiered emergency response system with corresponding documentation. All of these documents were controlled documents. Potential hazardous releases have been addressed as part of the requirements of the Major Hazard Facility Legislation. In addition, the AGR Transport Emergency Response Plan addresses spillages of solid or liquid cyanide and is the key point of reference in relation to these matters. The AGR Transport Emergency Response Plan is referenced by the CSBP Emergency Response Documentation and is used for responding to both on site and off site emergencies.

Production Practice 5.2: Involve site personnel and stakeholders in the planning process.

	☑ **in full compliance with**	**Production Practice 5.2**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

Consultation is a mandatory requirement under the Major Hazard Facility Legislation. This has occurred in several ways, e.g. inclusion of product specialists in the emergency response process, attendance and participation in the Kwinana Mutual Aid Group, liaison with the State Emergency Services, presentation of safety reports to relevant stakeholders. Communities have been made aware and consulted as per mechanisms noted above and through the CSBP involvement in the Kwinana Industries Council.

Production Practice 5.3: *Designate appropriate personnel and commit necessary equipment and resources for emergency response.*

The operation is

☑ **in full compliance with** **Production Practice 5.3**

☐ in substantial compliance with

☐ not in compliance with

Basis for this Finding:

CSBP has defined emergency response teams and incident controllers. Rosters are available and were sighted as part of the audit. Emergency response documentation was also available. Emergency responders are trained. A training programme for 2006/2007 for each team was sighted. This training includes application of the AGR Transport Emergency Response Plan which, as noted previously, will be the primary reference point for responding to an onsite cyanide emergency. Equipment lists were available. Testing of emergency response and communications equipment also occurs and records were sighted.

Production Practice 5.4: *Develop procedures for internal and external emergency notification and reporting.*

The operation is

☑ **in full compliance with** **Production Practice 5.4**

☐ in substantial compliance with

☐ not in compliance with

Basis for this Finding:

Emergency response documentation contains specific flow charts, detailed checklists and contact numbers. A mutual aid system is also in place for Kwinana Industries, and radio communication tests between the various parties are conducted and documented. The Crisis Management Manual includes procedures for communicating with the media.

Production Practice 5.5: *Incorporate into response plans and remediation measures, monitoring elements that account for the additional hazards of using cyanide treatment chemicals.*

The operation is

☑ **in full compliance with** **Production Practice 5.5**

☐ in substantial compliance with

☐ not in compliance with

Basis for this Finding:

Neutralisation, recovery and treatment of sodium cyanide spills is covered in the AGR Transport Emergency Response Plan for sodium cyanide products. It is understood that these measures apply equally to the Kwinana manufacturing and storage facilities and so provides specific guidance for dealing with specific cyanide related situations. This plan addresses use of chemicals for remediation and ongoing monitoring.

Production Practice 5.6: *Periodically evaluate response procedures and capabilities and revise them as needed.*

	☑ **in full compliance with**	**Production Practice 5.6**
The operation is	☐ in substantial compliance with	
	☐ not in compliance with	

Basis for this Finding:

Six monthly reviews of the safety report are conducted with the regulator, as required by relevant legislation. The major emergency management documentation is reviewed on an annual basis. General reviews also occur at the Kwinana Industry's mutual aid meetings.

Incident management team drills are generally conducted on a monthly basis for the CSBP works teams. Crisis management drills have been conducted. Tests of the AGR Transport Emergency Response Plan are undertaken on an annual basis. As noted previously, local man down drills to respond to cyanide emergency scenarios are also conducted.