


APPENDIX A

EXPERIMENTAL RESULTS FOR NICKEL REMOVAL
RESULTS - RUN 1

CELL CURRENT: 1.0 amps
CATHOLYTE FLOWRATE: 3.0 l/min
ANOLYTE FLOWRATE: 1.0 l/min

CATHOLYTE VOL (l): 13.7 12.9
ANOLYTE VOL (l): 45.0 44.8
pH ANOLYTE: 2.56 2.43

FIGURE A1. RESULTS - RUN 1.
RUN: 1

CATHOLYTE pH

BED POTENTIALS

Membrane

Feeder

CATHOLYTE CONDUCTIVITY
RUN: 2

<table>
<thead>
<tr>
<th></th>
<th>Start</th>
<th>End</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELL CURRENT</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>CATHOLYTE VOL</td>
<td>15.0</td>
<td>13.9</td>
</tr>
<tr>
<td>ANOLOYTE VOL</td>
<td>45.0</td>
<td>44.8</td>
</tr>
<tr>
<td>ANOLOYTE FLOW RATE</td>
<td>10.0 l/min</td>
<td></td>
</tr>
<tr>
<td>pH ANOLOYTE</td>
<td>2.37</td>
<td>2.39</td>
</tr>
</tbody>
</table>

**NICKEL CONCENTRATION**

**CURRENT EFFICIENCY**

**FIGURE A2. RESULTS - RUN 2.**
RUN: 2

CATHOLYTE pH

BED POTENTIALS

Membrane
Feeder

CATHOLYTE CONDUCTIVITY
**FIGURE A3. RESULTS - RUN 3.**

<table>
<thead>
<tr>
<th>RUN: 3</th>
<th>CELL CURRENT: 10 amps</th>
<th>CATHOLYTE VOL (l)</th>
<th>start</th>
<th>end</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>15.2</td>
<td>14.4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>45.0</td>
<td>44.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ANOLYTE VOL (l)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pH ANOLYTE</td>
<td>1.84</td>
<td>1.80</td>
<td></td>
</tr>
<tr>
<td>ANOLYTE FLOWRATE: 10 l/min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NICKEL CONCENTRATION**

**CURRENT EFFICIENCY**

**TIME (minutes)**

<table>
<thead>
<tr>
<th>50</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
</tr>
</tbody>
</table>
RUN: 3

CATHOLYTE pH

BED POTENTIALS

CATHOLYTE CONDUCTIVITY
FIGURE A.4

RESULTS - RUN 4

<table>
<thead>
<tr>
<th>RUN: 4</th>
<th>CELL CURRENT: 1.0 amps</th>
<th>CATHOLYTE FLOWRATE: 3.0 l/min</th>
<th>ANOLYTE FLOWRATE: 10 l/min</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CATHOLYTE VOL(1): 15.3</td>
<td>ANOLYTE VOL(1): 45.0</td>
<td>pH ANOLYTE: 18.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FIGURE A.5. RESULTS - RUN 5.
CELL CURRENT: 1000 amps
CATHOLYTE FLOW RATE: 80 l/min
ANOLYTE FLOW RATE: 10 l/min
CATHOLYTE VOL(II) 450 l
ANOLYTE VOL(II) 450 l
pH ANOLYTE 1.68
NICKEL CONCENTRATION

TIM E (minutes)

CURRENT EFFICIENCY

FIGURE A7. RESULTS - RUN 7.
Author  Dardis K A
Name of thesis  Deposition of Copper and Nickel from dilute solutions in packed bed electrolytic cells  1981

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