FIGURE A8.

RESULTS - RUN 8.

RUN: 8

CELL CURRENT: 50 amps
CATHOLYTE FLOW RATE: 8.0 l/min
CATHOLYTE VOL.: 450 | 430
ANOLYTE VOL.: 450 | 44.8
ANOLYTE FLOW RATE: 10.1 l/min
pH: 1.69 | 1.62

NICKEL CONCENTRATION

CURRENT EFFICIENCY
CATHOLYTE CONDUCTIVITY (\( \mu \text{ohm/cm} \))

POTENTIAL (-volts vs. SCE)

**RUN: 8**

CATHOLYTE pH

BED POTENTIALS

Membrane

Feeder

CATHOLYTE CONDUCTIVITY

**Membrane**

**Feeder**
RUN: 9

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CELL CURRENT</td>
<td>7.5 amps</td>
</tr>
<tr>
<td>CATHOLYTE FLOW RATE</td>
<td>80 l/min</td>
</tr>
<tr>
<td>ANOLYTE FLOW RATE</td>
<td>10 l/min</td>
</tr>
<tr>
<td>CATHOLYTE VOL (l)</td>
<td>45.0</td>
</tr>
<tr>
<td>CATHOLYTE VOL (l) end</td>
<td>42.4</td>
</tr>
<tr>
<td>ANOLYTE VOL (l)</td>
<td>45.0</td>
</tr>
<tr>
<td>ANOLYTE VOL (l) end</td>
<td>44.7</td>
</tr>
<tr>
<td>PH ANOLYTE</td>
<td>160.152</td>
</tr>
</tbody>
</table>

FIGURE A9. RESULTS - RUN 9.
RUN: 10

CELL CURRENT: 150 amps
CATHOLYTE FLOWRATE: 80 l/min
ANOLYTE FLOWRATE: 10 l/min

CATHOLYTE VOl.(i) | 45.0 | 40.8
ANOLYTE VOl.(ii) | 45.0 | 44.6
pH ANOLYTE | 162.1 163

NICKEL CONCENTRATION

CURRENT EFFICIENCY

FIGURE A10. RESULTS - RUN 10.
CELL CURRENT: 7.5 amps
CATHOLYTE FLOWRATE: 3.0 l/min
CATHOLYTE VOL: 450 416
ANOLYTE VOL: 450 447
ANOLYTE FLOWRATE: 1.0 l/min
pH ANOLYTE: 1.0 1.5

FIGURE A11. RESULTS - RUN 11.
RUN: 11

Outlet

Inlet

CATHOLYTE pH

BED POTENTIALS

Membrane

Feeder

CATHOLYTE CONDUCTIVITY

POTENTIAL (v) vs. SCE

CATHOLYTE CONDUCTIVITY (µS/cm)

TIME (minutes)
CURRENT EFFICIENCY

CELL CURRENT: 15.0 amps
CATHOLYTE FLOW RATE: 30 l/min
ANOLYTE FLOW RATE: 10 l/min

CATHOLYTE VOL (i) 45.0 38.6
ANOLYTE VOL (i) 45.0 44.6
ANOLYTE pH 1.51 1.50

FIGURE A12. RESULTS - RUN 12.
CATHOLYTE CONDUCTIVITY (t/mho/cm)

POTENTIAL (-volts vs SCE)

CATHOLYTE pH

BED POTENTIALS

RUN: 12

Outlet

Inlet

Membrane

Feeder

CATHOLYTE CONDUCTIVITY

TINT (minutes)
FIGURE A13. RESULTS - RUN 13.
FIGURE A14. RESULTS - RUN 14.
RUN: 15

<table>
<thead>
<tr>
<th>CELL CURRENT: 150 amps</th>
<th>CATHOLYTE FLOWRATE: 5.0 l/min</th>
<th>CATHOLYTE VOL(I): 45.0</th>
<th>40.2</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ANOLYTE FLOWRATE: 10 l/min</td>
<td>ANOLYTE VOL(II): 45.0</td>
<td>ANOLYTE VOL(II): 44.6</td>
<td>pH ANOLYTE: 1.63</td>
<td>1.54</td>
<td></td>
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<table>
<thead>
<tr>
<th>pH ANOLYTE</th>
<th>CURRENT EFFICIENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.63</td>
<td>1.54</td>
</tr>
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</table>

**NICKEL CONCENTRATION**

**CURRENT EFFICIENCY**

**FIGURE A15. RESULTS—RUN 15.**
RUN: 15

CATHOLYTE pH

Outlet
Inlet

BED POTENTIALS

Membrane
Feeder

CATHOLYTE CONDUCTIVITY
FIGURE A16. RESULTS - RUN 16.

<table>
<thead>
<tr>
<th>RUN: 16</th>
<th>CELL CURRENT: 100 amps</th>
<th>CATHOLYTE VOL (l)</th>
<th>ANOLYTE VOL (l)</th>
<th>pH ANOLYTE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>CATHOLYTE FLOWRATE: 5.0 l/min</td>
<td>450</td>
<td>418</td>
<td>45.0</td>
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<tr>
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<td>ANOLYTE FLOWRATE: 1.0 l/min</td>
<td>162</td>
<td>153</td>
<td>5.0</td>
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</table>

NICKEL CONCENTRATION

CURRENT EFFICIENCY
CELL CURRENT: 7.5 amps
CATHOLYTE FLOWRATE: 5.0 l/min
CATHOLYTE VOL (l) start: 45.0, end: 43.1
ANOLYTE FLOWRATE: 10 l/min
ANOLYTE VOL (l) start: 45.0, end: 44.8
pH ANOL start: 159, end: 157
NICKEL CONCENTRATION

FIGURE A17. RESULTS - RUN 17.
RUN: 17

CATHOLYTE pH

Outlet
Inlet

BED POTENTIALS

Membrane
Feeder

CATHOLYTE CONDUCTIVITY

TIME (minutes)
RUN: 18

<table>
<thead>
<tr>
<th>CELL CURRENT: 5.0 amps</th>
<th>CATHOLYTE VOL (I)</th>
<th>ANOLYTE VOL (I)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Start: 450</td>
<td>End: 432</td>
</tr>
<tr>
<td>CATHOLYTE FLOW RATE: 50 l/min</td>
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<tr>
<td>ANOLYTE FLOW RATE: 10 l/min</td>
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</tr>
<tr>
<td>pH ANOLYTE</td>
<td>159</td>
<td>155</td>
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</tbody>
</table>

NICKEL CONCENTRATION

CURRENT EFFICIENCY

FIGURE A18. RESULTS - RUN 18.