

General

- Data from Leary’s Brook monitoring station is monitored by the Water Resources Management Division staff.
- This monthly deployment report interprets the data from the Leary Brook real-time water quality station for the period of September 16 to October 23.
- Leary Brook station operational status was nominal over the deployment period; no communications dropouts or malfunctions were detected. Hydrolab Datasonde 5X s/n 44975 was in place for this time period.

Maintenance and Calibration of Instrument

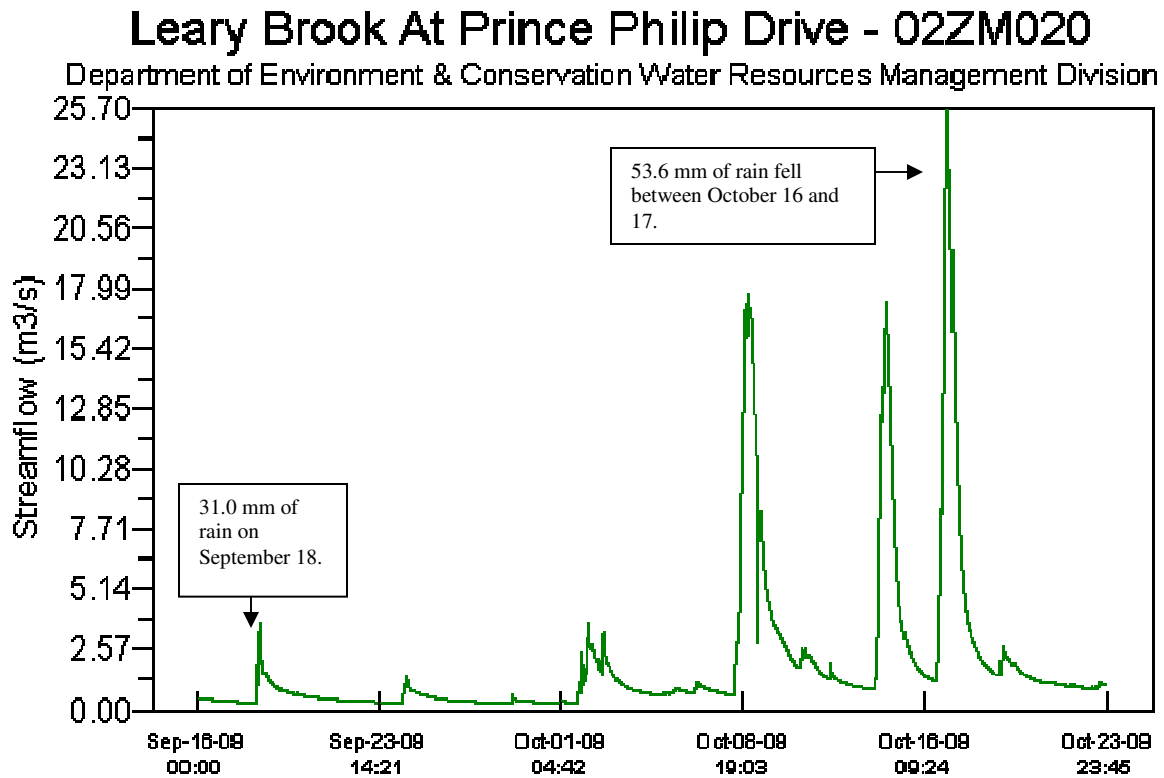
- As part of the removal and reinstallation process, parameters are recorded from both the field sonde (in situ) and a similar, newly-calibrated QA sonde (placed side by side). The parameters from both instruments are compared and their variability is ranked as part of the QA/QC protocol (see Table 1).
- Upon installation all parameters were ranked as “Excellent” except conductivity which ranked as “Good”. Upon removal, once again, all parameters were ranked “Excellent” except conductivity which ranked as “Good”.

| Station | Date | Action | Instrument Comparison Ranking | | | | |
|--------------------------------------|-----------------------------|------------|-------------------------------|------|--------------|------------------|-----------|
| | | | Temperature | pH | Conductivity | Dissolved Oxygen | Turbidity |
| Leary’s Brook at Prince Philip Drive | Sep 16 th , 2009 | Removal | Good | Fair | Excellent | Excellent | Good |
| | Oct 23 rd , 2009 | Deployment | Good | Good | Excellent | Good | Good |

Data Interpretation

- The deployment at Leary’s Brook from September 16th to October 23rd was characterised by several short-term peaks in flow. Flow ranged from 0.291 m³/s to 25.6 m³/s.

Figure 1: Streamflow at Leary's Brook from September 16th to October 23rd, 2009



- Water temperature at Leary's Brook is seen to decline as expected during the deployment period. Periods of heavy rain and cloud cover accelerate the cooling process. During warm weather and sunny periods, water temperature rises against the general downward trend, however this is generally transient and short term. During the deployment, temperature ranged from 15.8C to

Figure 2: Water Temperature at Leary's Brook from September 16th to October 23rd, 2009

Leary Brook At Prince Philip Drive - NF02ZM0178

Department of Environment & Conservation Water Resources Management Division

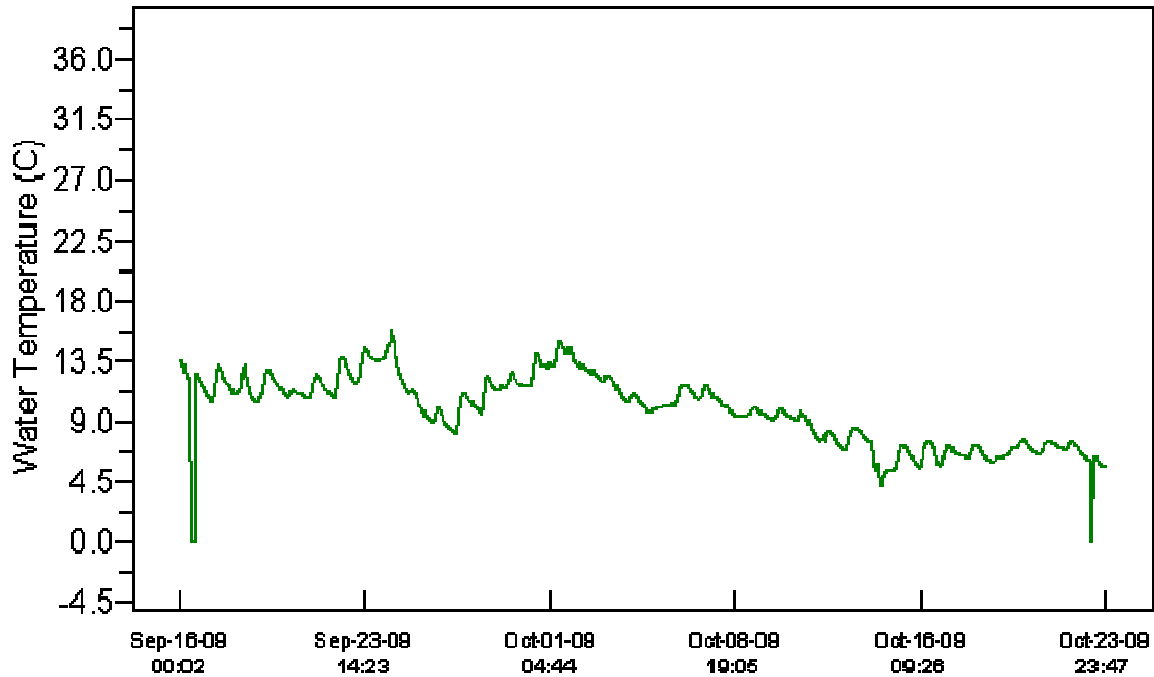


Figure 3: pH at Leary's Brook from September 16th to October 23rd, 2009

Leary Brook At Prince Philip Drive - NF02ZM0178

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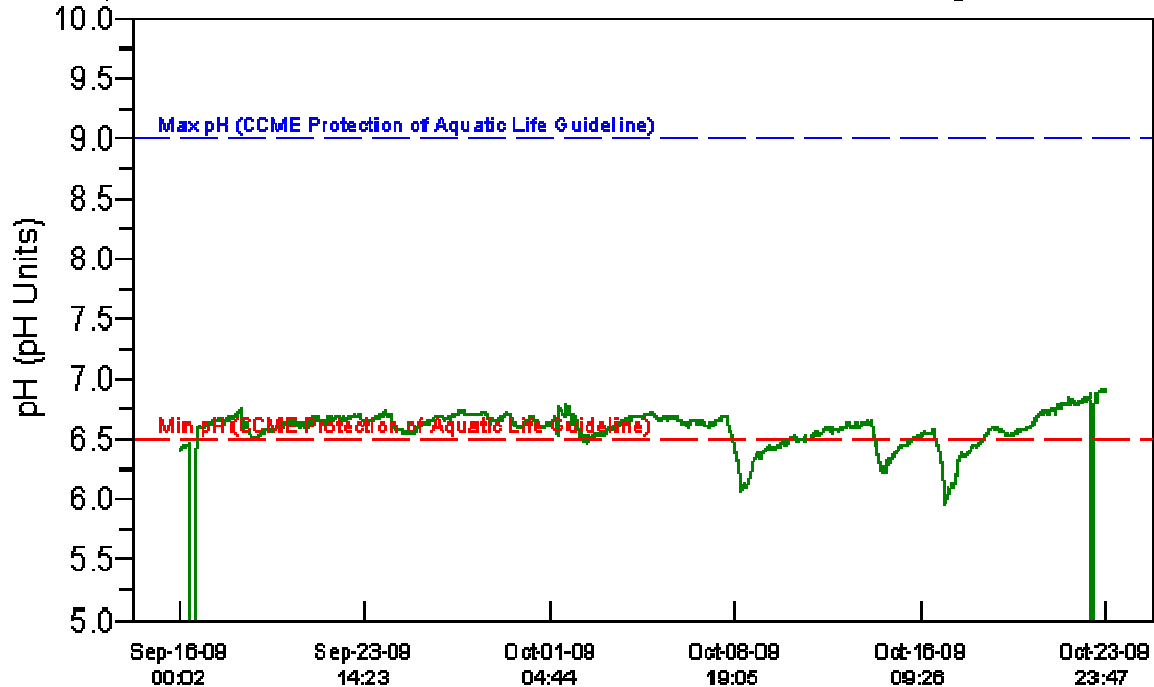


Figure 4: Specific Conductance at Leary's Brook from September 16th to October 23rd, 2009

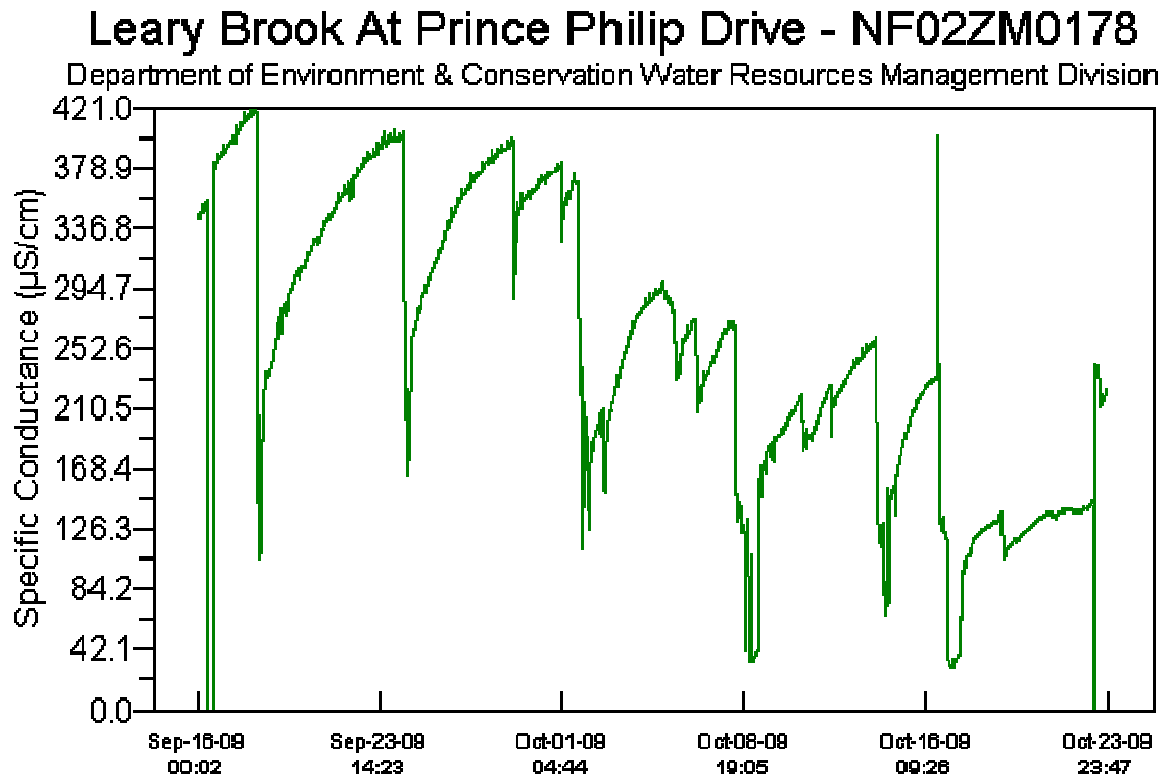
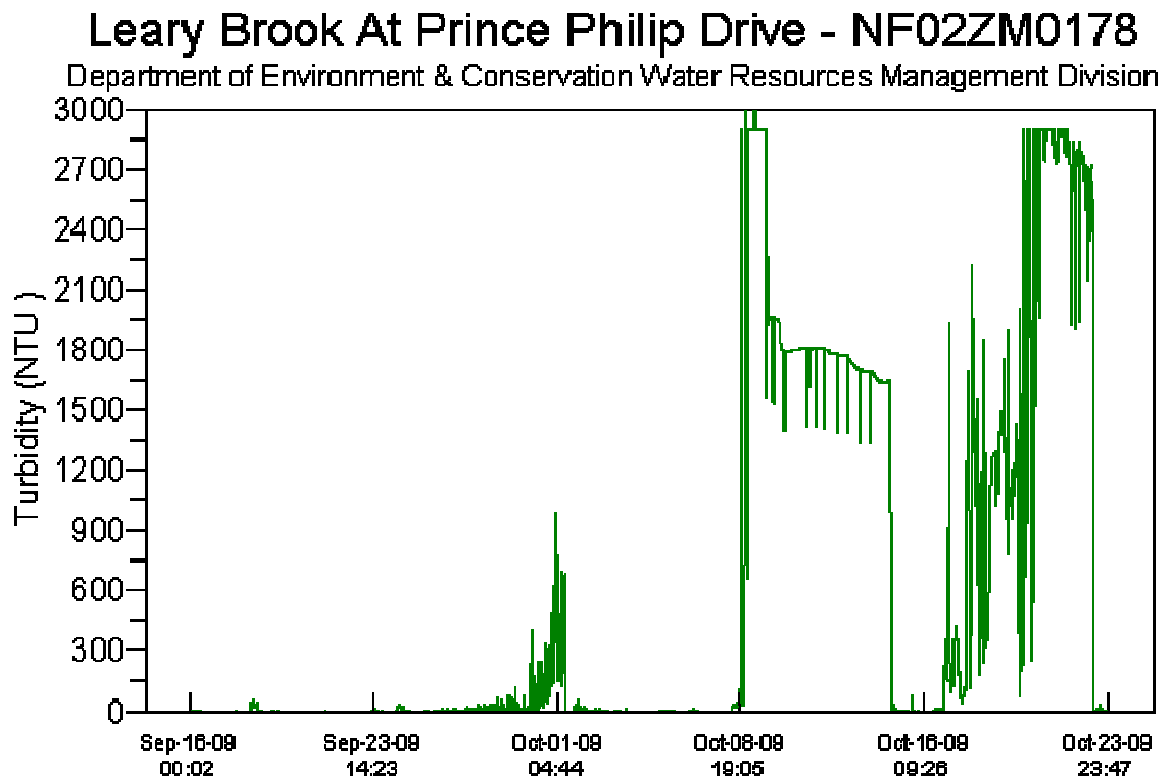


Figure 5: Turbidity at Leary's Brook from September 16th to October 23rd, 2009



Appendix

Daily Data Report for September 2009

| <u>D</u> <u>a</u> <u>y</u> | <u>Max</u> <u>Temp</u> °C | <u>Min</u> <u>Temp</u> °C | <u>Mean</u> <u>Temp</u> °C | <u>Heat</u> <u>Deg</u> <u>Days</u> °C | <u>Cool</u> <u>Deg</u> <u>Days</u> °C | <u>Total</u> <u>Rain</u> mm | <u>Total</u> <u>Snow</u> cm | <u>Total</u> <u>Precip</u> mm | <u>Snow</u> <u>on</u> <u>Grnd</u> cm | <u>Dir of</u> <u>Max</u> <u>Gust</u> 10's Deg | <u>Spd of</u> <u>Max</u> <u>Gust</u> km/h |
|----------------------------------|-------------------------------------|-------------------------------------|--------------------------------------|--|--|---------------------------------------|---------------------------------------|---|---|---|--|
| 01 | 19.5 | 9.6 | 14.6 | 3.4 | 0.0 | T | 0.0 | T | 0 | 25E | 44E |
| 02 | 15.3 | 9.1 | 12.2 | 5.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 25E | 37E |
| 03 | 21.6 | 11.3 | 16.5 | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 26E | 67E |
| 04 | 23.3 | 12.3 | 17.8 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 25E | 46E |
| 05 | 13.9 | 5.3 | 9.6 | 8.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | | <31 |
| 06 | 14.1 | 4.8 | 9.5 | 8.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | | <31 |
| 07 | 19.7 | 7.4 | 13.6 | 4.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 26E | 70E |
| 08 | 17.9 | 12.5 | 15.2 | 2.8 | 0.0 | 0.8 | 0.0 | 0.8 | 0 | M | M |
| 09 | 13.2 | 5.3 | 9.3 | 8.7 | 0.0 | T | 0.0 | T | 0 | M | M |
| 10 | 11.4 | 4.5 | 8.0 | 10.0 | 0.0 | 0.2 | 0.0 | 0.2 | 0 | 33E | 44E |
| 11 | 20.5 | 7.2 | 13.9 | 4.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 28E | 50E |
| 12 | 16.3 | 6.1 | 11.2 | 6.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 35E | 33E |
| 13 | 13.8 | 6.6 | 10.2 | 7.8 | 0.0 | 4.0 | 0.0 | 4.0 | 0 | 18E | 33E |
| 14 | 17.9 | 12.2 | 15.1 | 2.9 | 0.0 | 53.2 | 0.0 | 53.2 | 0 | 16E | 69E |
| 15 | 18.2 | 9.7 | 14.0 | 4.0 | 0.0 | T | 0.0 | T | 0 | 26E | 61E |
| 16[†] | 9.7 | 5.7 | 7.7 | 10.3 | 0.0 | 1.2 | 0.0 | 1.2 | | 3 | 33 |
| 17 | 17.4 | 5.4 | 11.4 | 6.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 27E | 37E |
| 18 | 14.4 | 6.2 | 10.3 | 7.7 | 0.0 | 31.0 | 0.0 | 31.0 | 0 | 31E | 65E |
| 19 | 16.7 | 7.9 | 12.3 | 5.7 | 0.0 | 3.2 | 0.0 | 3.2 | 0 | 23E | 37E |
| 20 | 9.6 | 7.2 | 8.4 | 9.6 | 0.0 | 2.0 | 0.0 | 2.0 | 0 | 32E | 41E |
| 21 | 13.9 | 8.3 | 11.1 | 6.9 | 0.0 | 0.4 | 0.0 | 0.4 | 0 | 26E | 41E |
| 22 | 19.8 | 10.0 | 14.9 | 3.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 26E | 54E |
| 23 | 17.8 | 11.2 | 14.5 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 25E | 67E |
| 24 | 17.5 | 7.1 | 12.3 | 5.7 | 0.0 | 14.6 | 0.0 | 14.6 | 0 | 25E | 70E |
| 25 | 7.8 | 5.5 | 6.7 | 11.3 | 0.0 | 0.2 | 0.0 | 0.2 | 0 | 4E | 59E |
| 26 | 7.7 | 1.6 | 4.7 | 13.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | 3E | 54E |
| 27 | 15.9 | 2.8 | 9.4 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | | <31 |
| 28 | 15.7 | 6.7 | 11.2 | 6.8 | 0.0 | 0.4 | 0.0 | 0.4 | 0 | | <31 |
| 29 | 11.4 | 9.5 | 10.5 | 7.5 | 0.0 | 6.0 | 0.0 | 6.0 | 0 | 16E | 41E |
| 30 | 16.8 | 10.4 | 13.6 | 4.4 | 0.0 | T | 0.0 | T | 0 | 18E | 37E |
| Sum | | | | 190.3 | 0.0 | 117.2 | 0.0 | 117.2 | | | |
| Avg | 15.6 | 7.6 | 11.63 | | | | | | | | |
| Xtrm | 23.3 | 1.6 | | | | | | | | 26* | 70* |

Daily Data Report for October 2009

| <u>D</u> <u>a</u> <u>y</u> | <u>Max</u> <u>Temp</u> °C | <u>Min</u> <u>Temp</u> °C | <u>Mean</u> <u>Temp</u> °C | <u>Heat</u> <u>Deg</u> <u>Days</u> °C | <u>Cool</u> <u>Deg</u> <u>Days</u> °C | <u>Total</u> <u>Rain</u> mm | <u>Total</u> <u>Snow</u> cm | <u>Total</u> <u>Precip</u> mm | <u>Snow</u> <u>on</u> <u>Grnd</u> cm | <u>Dir of</u> <u>Max</u> <u>Gust</u> 10's Deg | <u>Spd of</u> <u>Max</u> <u>Gust</u> km/h |
|----------------------------------|---------------------------------|---------------------------------|----------------------------------|--|--|-----------------------------------|-----------------------------------|-------------------------------------|---|---|--|
| <u>01</u> † | 20.7 | 12.4 | 16.6 | 1.4 | 0.0 | 15.2 | 0.0 | 15.2 | | | <31 |
| <u>02</u> † | 13.9 | 12.0 | 13.0 | 5.0 | 0.0 | 34.8 | 0.0 | 34.8 | | 26 | 46 |
| <u>03</u> † | 13.2 | 7.1 | 10.2 | 7.8 | 0.0 | 1.8 | 0.0 | 1.8 | | 31 | 56 |
| <u>04</u> † | 8.6 | 5.8 | 7.2 | 10.8 | 0.0 | 1.0 | 0.0 | 1.0 | | 32 | 50 |
| <u>05</u> † | 10.3 | 5.8 | 8.1 | 9.9 | 0.0 | 9.6 | 0.0 | 9.6 | | 16 | 54 |
| <u>06</u> † | 15.0 | 9.8 | 12.4 | 5.6 | 0.0 | 7.6 | 0.0 | 7.6 | | 24 | 41 |
| <u>07</u> † | 12.1 | 7.2 | 9.7 | 8.3 | 0.0 | T | 0.0 | T | | 28 | 57 |
| <u>08</u> † | 8.4 | 6.9 | 7.7 | 10.3 | 0.0 | 44.2 | 0.0 | 44.2 | | 3 | 61 |
| <u>09</u> † | 8.9 | 6.7 | 7.8 | 10.2 | 0.0 | 12.4 | 0.0 | 12.4 | | 31 | 41 |
| <u>10</u> † | 8.2 | 0.0 | 4.1 | 13.9 | 0.0 | 1.8 | 0.0 | 1.8 | | 36 | 37 |
| <u>11</u> † | 8.8 | 4.9 | 6.9 | 11.1 | 0.0 | 6.8 | 0.0 | 6.8 | | 30 | 63 |
| <u>12</u> † | 7.5 | 4.1 | 5.8 | 12.2 | 0.0 | 2.2 | 0.0 | 2.2 | | 29 | 61 |
| <u>13</u> † | 10.1 | 3.3 | 6.7 | 11.3 | 0.0 | 0.0 | 0.0 | 0.0 | | 29E | 32E |
| <u>14</u> † | 5.2 | 0.7 | 3.0 | 15.0 | 0.0 | 41.2 | 5.2 | 46.4 | 2 | 31E | 104E |
| <u>15</u> † | 8.4 | 1.1 | 4.8 | 13.2 | 0.0 | 0.0 | 0.0 | 0.0 | | 30 | 65 |
| <u>16</u> † | 8.4 | -0.5 | 4.0 | 14.0 | 0.0 | 23.0 | 0.0 | 23.0 | | 11 | 67 |
| <u>17</u> † | 10.7 | 3.0 | 6.9 | 11.1 | 0.0 | 30.6 | 0.0 | 30.6 | | 12 | 83 |
| <u>18</u> † | 4.6 | 0.1 | 2.4 | 15.6 | 0.0 | 0.4 | 0.0 | 0.4 | | | <31 |
| <u>19</u> † | 8.6 | 1.1 | 4.9 | 13.1 | 0.0 | 14.0 | 0.0 | 14.0 | | 13 | 54 |
| <u>20</u> † | 7.4 | 2.4 | 4.9 | 13.1 | 0.0 | 2.0 | 0.0 | 2.0 | | 3 | 41 |
| <u>21</u> † | 5.5 | 2.9 | 4.2 | 13.8 | 0.0 | 3.0 | 0.0 | 3.0 | | | <31 |
| <u>22</u> † | 5.1 | 0.1 | 2.6 | 15.4 | 0.0 | 1.0 | 0.0 | 1.0 | | | <31 |
| <u>23</u> † | 2.8 | 0.8 | 1.8 | 16.2 | 0.0 | 5.0 | 0.8 | 5.8 | T | 35 | 59 |
| <u>24</u> † | 2.6 | -0.3 | 1.2 | 16.8 | 0.0 | 0.0 | 0.2 | 0.2 | T | 35 | 59 |
| <u>25</u> † | 10.7 | 0.1 | 5.4 | 12.6 | 0.0 | 3.6 | 0.0 | 3.6 | | 19 | 59 |
| <u>26</u> † | 8.4 | 0.1 | 4.3 | 13.7 | 0.0 | 1.0 | T | 1.0 | | 29 | 67 |
| <u>27</u> † | 2.2 | -2.0 | 0.1 | 17.9 | 0.0 | 0.0 | 0.0 | 0.0 | | 32 | 65 |
| <u>28</u> † | 3.2 | -1.7 | 0.8 | 17.2 | 0.0 | 0.6 | 0.6 | 1.2 | T | 32 | 74 |
| <u>29</u> † | 3.3 | -0.2 | 1.6 | 16.4 | 0.0 | 2.8 | T | 2.8 | T | 35 | 54 |
| <u>30</u> † | 4.7 | -1.4 | 1.7 | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | | | <31 |
| <u>31</u> † | 12.8 | -0.5 | 6.2 | 11.8 | 0.0 | T | 0.0 | T | | 24 | 78 |
| Sum | | | | 381.0 | 0.0 | 265.6 | 6.8 | 272.4 | | | |
| Avg | 8.4 | 3 | 5.68 | | | | | | | | |
| Xtrm | 20.7 | -2.0 | | | | | | | | 31E | 104E |

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