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| ООО "ПРОМХИМПРОЕКТ"   |   | ЗАПРОС НА ТЕХНИЧЕСКОЕ ПРЕДЛОЖЕНИЕ |   | ЗТП-04                                       |   |                                 |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| ООО "PROMCHIMPROEKT"  |   | INQUIRY FOR TECHNICAL PROPOSAL    |   | ITP-04                                       |   |                                 |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| ОАО "Славнефть-ЯНОС". г. Ярославль<br>Цех № 13 Участок Парки смещения Титул 46/2<br>ОАО "Slavneft-YANOS". Yaroslavl<br>Shop №13 Title 46/2  |   |                                   |   |  |   |                                 |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| <table><tr><td>Изм./Rev.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>Изм./Rev.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td></tr><tr><td>Лист/Page</td><td colspan="10"></td><td>Лист/Page</td><td colspan="10"></td></tr><tr><td>1</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>29</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>30</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>3</td><td>X</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>31</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>32</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td>X</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>33</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>34</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>35</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>36</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>37</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>38</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>39</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>12</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>40</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>13</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>41</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>14</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>42</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>15</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>43</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>16</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>44</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>17</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>45</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>18</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>46</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>19</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>47</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>20</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>48</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>21</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>49</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>22</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>50</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>23</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>51</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>24</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>52</td><td></td><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|   |                                   |   |  |   |                                 |   |   |   |   |           | Изм./Rev.                               | 0 | 1 | 2 | 3           | 4 | 5               | 6 | 7 | 8 | 9               | Изм./Rev. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Лист/Page |  |  |  |  |  |  |  |  |  |  | Лист/Page |  |  |  |  |  |  |  |  |  |  | 1 | X | X |  |  |  |  |  |  |  |  | 29 |  |  |  |  |  |  |  |  |  |  | 2 | X |  |  |  |  |  |  |  |  |  | 30 |  |  |  |  |  |  |  |  |  |  | 3 | X | X |  |  |  |  |  |  |  |  | 31 |  |  |  |  |  |  |  |  |  |  | 4 | X |  |  |  |  |  |  |  |  |  | 32 |  |  |  |  |  |  |  |  |  |  | 5 | X |  |  |  |  |  |  |  |  |  | 33 |  |  |  |  |  |  |  |  |  |  | 6 |  |  |  |  |  |  |  |  |  |  | 34 |  |  |  |  |  |  |  |  |  |  | 7 |  |  |  |  |  |  |  |  |  |  | 35 |  |  |  |  |  |  |  |  |  |  | 8 |  |  |  |  |  |  |  |  |  |  | 36 |  |  |  |  |  |  |  |  |  |  | 9 |  |  |  |  |  |  |  |  |  |  | 37 |  |  |  |  |  |  |  |  |  |  | 10 |  |  |  |  |  |  |  |  |  |  | 38 |  |  |  |  |  |  |  |  |  |  | 11 |  |  |  |  |  |  |  |  |  |  | 39 |  |  |  |  |  |  |  |  |  |  | 12 |  |  |  |  |  |  |  |  |  |  | 40 |  |  |  |  |  |  |  |  |  |  | 13 |  |  |  |  |  |  |  |  |  |  | 41 |  |  |  |  |  |  |  |  |  |  | 14 |  |  |  |  |  |  |  |  |  |  | 42 |  |  |  |  |  |  |  |  |  |  | 15 |  |  |  |  |  |  |  |  |  |  | 43 |  |  |  |  |  |  |  |  |  |  | 16 |  |  |  |  |  |  |  |  |  |  | 44 |  |  |  |  |  |  |  |  |  |  | 17 |  |  |  |  |  |  |  |  |  |  | 45 |  |  |  |  |  |  |  |  |  |  | 18 |  |  |  |  |  |  |  |  |  |  | 46 |  |  |  |  |  |  |  |  |  |  | 19 |  |  |  |  |  |  |  |  |  |  | 47 |  |  |  |  |  |  |  |  |  |  | 20 |  |  |  |  |  |  |  |  |  |  | 48 |  |  |  |  |  |  |  |  |  |  | 21 |  |  |  |  |  |  |  |  |  |  | 49 |  |  |  |  |  |  |  |  |  |  | 22 |  |  |  |  |  |  |  |  |  |  | 50 |  |  |  |  |  |  |  |  |  |  | 23 |  |  |  |  |  |  |  |  |  |  | 51 |  |  |  |  |  |  |  |  |  |  | 24 |  |  |  |  |  |  |  |  |  |  | 52 |  |  |  |  |  |  |  |  |  |  | 25 |  |  |  |  |  |  |  |  |  |  | 53 |  |  |  |  |  |  |  |  |  |  | 26 |  |  |  |  |  |  |  |  |  |  | 54 |  |  |  |  |  |  |  |  |  |  | 27 |  |  |  |  |  |  |  |  |  |  | 55 |  |  |  |  |  |  |  |  |  |  | 28 |  |  |  |  |  |  |  |  |  |  | 56 |  |  |  |  |  |  |  |  |  |  |
| Изм./Rev.   | 0 | 1                                 | 2 | 3  | 4 | 5                               | 6 | 7   | 8 | 9 | Изм./Rev. | 0                                       | 1 | 2 | 3 | 4           | 5 | 6               | 7 | 8 | 9 |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Лист/Page   |   |                                   |   |  |   |                                 |   |   |   |   | Лист/Page |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 1   | X | X                                 |   |  |   |                                 |   |   |   |   | 29        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 2   | X |                                   |   |  |   |                                 |   |   |   |   | 30        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 3   | X | X                                 |   |  |   |                                 |   |   |   |   | 31        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 4   | X |                                   |   |  |   |                                 |   |   |   |   | 32        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 5   | X |                                   |   |  |   |                                 |   |   |   |   | 33        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 6   |   |                                   |   |  |   |                                 |   |   |   |   | 34        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 7   |   |                                   |   |  |   |                                 |   |   |   |   | 35        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 8   |   |                                   |   |  |   |                                 |   |   |   |   | 36        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 9   |   |                                   |   |  |   |                                 |   |   |   |   | 37        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 10  |   |                                   |   |  |   |                                 |   |   |   |   | 38        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 11  |   |                                   |   |  |   |                                 |   |   |   |   | 39        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 12  |   |                                   |   |  |   |                                 |   |   |   |   | 40        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 13  |   |                                   |   |  |   |                                 |   |   |   |   | 41        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 14  |   |                                   |   |  |   |                                 |   |   |   |   | 42        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 15  |   |                                   |   |  |   |                                 |   |   |   |   | 43        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 16  |   |                                   |   |  |   |                                 |   |   |   |   | 44        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 17  |   |                                   |   |  |   |                                 |   |   |   |   | 45        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 18  |   |                                   |   |  |   |                                 |   |   |   |   | 46        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 19  |   |                                   |   |  |   |                                 |   |   |   |   | 47        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 20  |   |                                   |   |  |   |                                 |   |   |   |   | 48        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 21  |   |                                   |   |  |   |                                 |   |   |   |   | 49        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 22  |   |                                   |   |  |   |                                 |   |   |   |   | 50        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 23  |   |                                   |   |  |   |                                 |   |   |   |   | 51        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 24  |   |                                   |   |  |   |                                 |   |   |   |   | 52        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 25  |   |                                   |   |  |   |                                 |   |   |   |   | 53        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 26  |   |                                   |   |  |   |                                 |   |   |   |   | 54        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 27  |   |                                   |   |  |   |                                 |   |   |   |   | 55        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 28  |   |                                   |   |  |   |                                 |   |   |   |   | 56        |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Ревизии / Revisions   |   |                                   |   |  |   |                                 |   |   |   |   |           | Основание для изменения                 |   |   |   |             |   |                 |   |   |   | Утв. / Appr. by |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Изм. Rev.   |   | Дата Date                         |   | Отдел Автоматизации Процессов OAP Department |   | ОАП DAP                         |   | Basis for revisions   |   |   |           | Главный инженер проекта Project manager |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |   |                                   |   | Исполнил Writer                              |   | Нач. отдела Chief of department |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 1   |   | 11.15                             |   | OK -   |   | Лев                             |   | Уточнение данных  |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |   |                                   |   |  |   |                                 |   | Открытое акционерное общество "Славнефть-Ярославнефтеоргсинтез" К ПРОИЗВОДСТВУ Начальник ОЦНР |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |   |                                   |   |  |   |                                 |   | (подпись, расшифровка)  |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
|   |   |                                   |   |  |   |                                 |   | 15 01 2016 г. ③   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| 18771-46/2-ATX-ЗТП-04   |   |                                   |   |  |   |                                 |   |   |   |   |           | 18771-46/2-ATX-ITP-04                   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Разраб. Designed  |   | I. Remizova                       |   | OK   |   | Н. 15                           |   | МАССОВЫЙ РАСХОДОМЕР   |   |   |           | Стадия/Stage                            |   |   |   | Лист / Page |   | Листов / Amount |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Проверил Checked  |   | A. Arkhipov                       |   | Лев  |   | Н. 15                           |   | CORIOLIS MASS FLOWMETER   |   |   |           | P                                       |   |   |   | 1           |   | 5               |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Н.контр. Verified   |   | E. Kalinina                       |   | Лев  |   | Н. 15                           |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Нач. отд. Chief of dep.   |   | V. Galanin                        |   | Лев  |   | Н. 15                           |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |
| Утвердил Approved   |   | M. Chalaya                        |   | Лев  |   | Н. 15                           |   |   |   |   |           |   |   |   |   |             |   |                 |   |   |   |                 |           |   |   |   |   |   |   |   |   |   |   |           |  |  |  |  |  |  |  |  |  |  |           |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |   |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |   |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |    |  |  |  |  |  |  |  |  |  |  |

ПРОМХИМПРОЕКТ

ДАННЫЙ ЗАПРОС КАСАЕТСЯ ПОСТАВКИ СЛЕДУЮЩЕГО ОБОРУДОВАНИЯ, УСЛУГ И ДОКУМЕНТАЦИИ :

THE INQUIRY CONCERNS SUPPLY OF THE FOLLOWING EQUIPMENT, SERVICES AND DOCUMENTATION :

| ПУНКТ<br>POINT | ОПИСАНИЕ<br>DESCRIPTION  | КОЛ-ВО<br>QTE   | ЦЕНА ЗА<br>ЕДИНИЦУ<br>PRICE FOR<br>UNIT<br>(NOTE 1) | ЦЕНА<br>ОБЩАЯ<br>TOTAL<br>PRICE<br>(NOTE 1) |
|----------------|--|---|---|---|
| 1.             | <p>Массовые расходомеры<br/>в соответствии с опросным листом<br/>18771-46/2-ATX-ОЛ-04</p> <p><i>Coriolis mass flowmeters<br/>correspond to specification<br/>18771-46/2-ATX-SP-04</i></p>      | <p>В соотв.<br/>с ОЛ</p> <p><i>In<br/>conformity<br/>SP</i></p> |   |   |
| 2.             | <p>Комплект технической документации и чертежей в соответствии с таблицей (см. стр. 4)</p> <p><i>Set of technical documentation and drawings in accordance with the table (see page 4)</i></p> | 1set  |   |   |
| 3.             | <p>Запасные части для периода пуска и двух лет эксплуатации</p> <p><i>Spare parts for start-up period and for two years operation</i></p>  | 1set  |   |   |

( 1 ) - ЗАПОЛНЯЕТ ПОСТАВЩИК / TO BE FILLED BY VENDOR

МАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

18771-46/2-ATX-ЗТП-04

18771-46/2-ATX-ИТР-04

ЛИСТ ИЗМ.  
PAGE REV.

2 0

ПЕРЕЧЕНЬ ДОКУМЕНТАЦИИ, НАПРАВЛЯЕМОЙ ИЛИ АННУЛИРУЕМОЙ НАСТОЯЩИМ ИЗМЕНЕНИЕМ  
LIST OF DOCUMENTS ATTACHED OR CANCELLED BY THE PRESENT ISSUE

| ДОКУМЕНТ / DOCUMENT                                    |                           |              | Прилагаемая<br>изменённая<br>документация<br>ATTACHED | Аннулируемая<br>документация<br>CANCELLED |
|--|---------------------------|--------------|---|---|
| НАИМЕНОВАНИЕ / DESIGNATION                             | НОМЕР / NUMBER            | Рев.<br>Rev. |   |   |
| Опросный лист<br>на массовые расходомеры               | 18771-46/2-ATX-<br>-ОЛ-04 | 1            |   |   |
| Coriolis mass flowmetr<br>specification                | 18771-46/2-ATX-<br>-SP-04 | 1            |   |   |
| Требования к документации<br>Поставщика                | 18771-46/2-ATX-<br>-ОЛ-00 | 0            |   |   |
| Requirements for Supplier's<br>technical documentation | 18771-46/2-ATX-<br>-SP-00 | 0            |   |   |

## ПРИМЕЧАНИЯ / NOTES

МАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

18771-46/2-ATX-ЗТП-04

18771-46/2-ATX-ИТП-04

ЛИСТ ИЗМ.

PAGE REV.

3

1

В ТЕХНИЧЕСКОЕ ПРЕДЛОЖЕНИЕ ДОЛЖНО БЫТЬ ВКЛЮЧЕНО:  
TECHNICAL PROPOSAL SHOULD INCLUDE THE FOLLOWING:

1. При подаче технического предложения поставщик обязан предоставить скан-копию действующего документа (сертификат, письмо) об авторизации, выданного заводом-изготовителем или его официальным дистрибьютором (дилером) в РФ. Данный документ должен определять права на поставку и сервисное обслуживание с сохранением всех гарантийных, постгарантийных обязательств, технического сопровождения продукции и наличие всей разрешительной документации в соответствии с действующим законодательством.

*When submitting a technical proposal Supplier must submit a scanned copy of the current document (certificate, letter) authorization issued by the manufacturer or its authorized distributor (dealer) in the Russian Federation. This document should define the rights for the supply and service of preserving all warranty, post-warranty obligations, technical support and product availability all permits in accordance with applicable law.*

2. При подаче технического предложения поставщик обязан предоставить электронные копии всех разрешительных документов на приборы и комплектующие (кабельные вводы и др.).

*When submitting a technical proposal Supplier must provide electronic copies of all permits for tools and equipment (cable glands, etc.).*

3. При подаче технического предложения поставщик обязан предоставить расчет расходомера, в котором обязательно указывается скорость потока, погрешность измерения и потеря давления, число Рейнольдса при минимальном, рабочем и максимальном расходе.

*When submitting a technical proposal Supplier must provide meter calculation, which should indicate the flow rate, measurement error and loss of pressure, the Reynolds number at the minimum, operating and maximum expense.*

4. При поставке продукции Поставщик обязан предоставить копию методики поверки средств измерений и оригинал свидетельства о первичной поверке.

*When shipping a product Supplier shall provide a copy of the verification of measuring instruments and the original certificate of the primary calibration.*

5. Предусмотреть услуги шеф-монтажа расходомеров.

*Provide installation supervision services of mass flowmeter.*

6. Поставляемые приборы должны соответствовать требованиям технических регламентов таможенного союза:

- ТР ТС 004/2011 "О безопасности низковольтного оборудования";  
- ТР ТС 012/2011 "О безопасности оборудования для работы во взрывоопасных средах";  
- ТР ТС 020/2011 "Электромагнитная совместимость технических средств".

ПЕРЕЧЕНЬ ДОКУМЕНТОВ ПОСТАВЩИКА  
LIST OF DOCUMENTS REQUIRED FROM THE SUPPLIER

| ПУНКТ<br><br>ITEM | НАИМЕНОВАНИЕ<br><br>DESIGNATION  | КОЛ-ВО С     | ПОСЛЕ ЗАКАЗА / AFTER ORDERING |                |              |                |  |  | ИЗМ.<br>REV |
|-------------------|--|--------------|-------------------------------|----------------|--------------|----------------|--|--|-------------|
|                   |  | ПРЕДЛОЖ. (1) | ДЛЯ УТВЕРЖДЕНИЯ               |                | ФИНАЛЬНАЯ    |                |  |  |             |
|                   |  | QUANTITY     | FOR APPROVAL                  |                | FINAL ISSUE  |                |  |  |             |
|                   |  | WITH BID     | КОЛ.-ТИП (1)                  | СРОК (2)       | КОЛ.-ТИП (1) | СРОК (2)       |  |  |             |
|                   |  | NOTE 1       | QTE-TYPE (1)                  | DELIV.TIME (2) | QTE-TYPE (1) | DELIV.TIME (2) |  |  |             |
| 1                 | ГАБАРИТНЫЙ И УСТАНОВОЧНЫЙ ЧЕРТЁЖ<br>DIMENSIONAL AND INSTALLATION DRAWING   | 2 - C        | 3 - C                         | 4 - W          | 6 - C        |                |  |  |             |
| 2                 | СБОРОЧНЫЙ ЧЕРТЁЖ И РАЗРЕЗЫ<br>ARRANGEMENT DRAWING AND SECTIONS   | 2 - C        | 3 - C                         | 4 - W          | 6 - C        |                |  |  |             |
| 3                 | ОСНОВНЫЕ ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ<br>GENERAL TECHNICAL DATA  | 2 - C        | 3 - C                         | 4 - W          | 6 - C        |                |  |  |             |
| 4                 | ПЕРЕЧЕНЬ ЭЛЕМЕНТОВ<br>PARTS SCHEDULE   | 2 - C        | 3 - C                         | 4 - W          | 6 - C        |                |  |  |             |
| 5                 | СХЕМА ВНЕШНИХ СОЕДИНЕНИЙ<br>ELECTRIC OR PNEUMATIC HOOK-UP DRAWING  | 2 - C        | -                             | -              | 6 - C        |                |  |  |             |
| 6                 | СХЕМА ВНУТРЕННИХ ЭЛЕКТРИЧЕСКИХ СОЕДИНЕНИЙ<br>INTERNAL WIRING DIAGRAM   | 2 - C        | -                             | -              | 6 - C        |                |  |  |             |
| 7                 | ДИАГРАММЫ ИЗЛУЧЕНИЯ<br>SOURCE RADIATION DIAGRAMS   | -            | -                             | -              | -            |                |  |  |             |
| 8                 | КАЛИБРОВОЧНЫЕ ДИАГРАММЫ<br>CALIBRATION CURVES  | -            | -                             | -              | 6 - C        |                |  |  |             |
| 9                 | СЕРТИФИКАТЫ СООТВЕТСТВИЯ<br>ACCEPTANCE CERTIFICATES, CONFORMITY CERTIFICATES   | -            | -                             | -              | 6 - C        |                |  |  |             |
| 10                | ПРОТОКОЛЫ ЗАВОДСКИХ ИСПЫТАНИЙ<br>TEST REPORTS  | -            | -                             | -              | 6 - C        |                |  |  |             |
| 11                | ИНСТР. ПО МОНТ., ПУСКУ, ЭКСПЛ. И ТЕХН. ОБСЛУЖИВАНИЮ<br>INSTALL., START-UP, OPER. AND MAINTEN. INSTR.   | 2 - C        | RUSSIAN LANGUAGE              |                | 6 - C        |                |  |  |             |
| 12                | ПЕРЕЧЕНЬ ЗАПАСНЫХ ЧАСТЕЙ ДЛЯ ПУСКА<br>LIST OF SPARE PARTS FOR START-UP PERIOD  | 2 - C        | 3 - C                         | -              | 6 - C        |                |  |  |             |
| 13                | ПЕРЕЧЕНЬ ЗАПАСНЫХ ЧАСТЕЙ ДЛЯ 2-Х ЛЕТ РАБОТЫ<br>LIST OF SPARE PARTS FOR TWO YEARS OPERATION   | 2 - C        | 3 - C                         | -              | 6 - C        |                |  |  |             |
| 14                | ПРОЦЕДУРА И СЕРТИФИКАТ СВАРКИ<br>WELDING PROCEDURE AND WELDING TEST CERTIFICATE  | -            | -                             | -              | 6 - C        |                |  |  |             |
| 15                | ПРОЦЕДУРА ПРИЁМКИ<br>FACTORY ACCEPTANCE TEST PROCEDURE   | -            | -                             | -              | 6 - C        |                |  |  |             |
| 16                | ПРОЦЕДУРА ТЕСТИРОВАНИЯ<br>PERFORMANCE TEST PROCEDURE   | -            | -                             | -              | 6 - C        |                |  |  |             |
| 17                | ПРОТОКОЛ ПРИЁМКИ<br>FACTORY ACCEPTANCE TEST REPORT   | -            | -                             | -              | 6 - C        |                |  |  |             |
| 18                | ДОКУМЕНТАЦИЯ ПО ПРОГРАММНОМУ ОБЕСПЕЧЕНИЮ<br>SOFTWARE DOCUMENTATION   | -            | -                             | -              | -            |                |  |  |             |
| 19                | ТЕХНИЧЕСКИЙ ПАСПОРТ (ДЛЯ КАЖДОЙ ПОЗИЦИИ)<br>TECHNICAL PASSPORT (FOR EACH TAG N)  | -            | -                             | -              | 6 - C        |                |  |  |             |
| 20                | СВИДЕТЕЛЬСТВО ОБ УТВЕРЖДЕНИИ ТИПА СРЕДСТВ<br>ИЗМЕРЕНИЙ С ОПИСАНИЕМ ТИПА СИ<br>(ПРИЛОЖЕНИЯ К СВИДЕТЕЛЬСТВУ)<br>CERTIFICATE OF TYPE APPROVAL OF FUNDS<br>MEASUREMENTS<br>(APPLICATION FOR CERTIFICATE) | 2 - C        | -                             | -              | 6 - C        |                |  |  |             |
| 21                | МЕТОДИКА ПОВЕРКИ<br>CALIBRATION PROCEDURE  | -            | -                             | -              | 6 - C        |                |  |  |             |
| 22                | СВИДЕТЕЛЬСТВО О ПЕРВИЧНОЙ ПОВЕРКЕ<br>PRIMARY CALIBRATION CERTIFICATE   | -            | -                             | -              | 6 - O        |                |  |  |             |
| 23                | СЕРТИФИКАТ НА СООТВЕТСТВИЕ ТРЕБОВАНИЯМ<br>ТЕХНИЧЕСКОГО РЕГЛАМЕНТА ТАМОЖЕННОГО СОЮЗА<br>CERTIFICATE OF COMPLIANCE WITH REQUIREMENTS<br>OF CUSTOMS UNION TECHNICAL REGULATIONS                         | 2 - C        | -                             | -              | 6 - C        |                |  |  |             |

## ПРИМЕЧАНИЯ / NOTES

(1) ТИП : С - КОПИЯ, Т - КАЛЬКА  
TYPE : C - COPY, T - TRANSPARENT POLYESTER(2) ДАТА И КОЛИЧЕСТВО НЕДЕЛЬ  
DATE AND NUMBERS OF WEEKSМАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

18771-46/2-АТХ-ЗТП-04

18771-46/2-АТХ-ИТП-04

ЛИСТ  
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ООО "ПРОМХИМПРОЕКТ"  
ООО "PROMCHIMPROEKT"

ОПРОСНЫЙ ЛИСТ  
SPECIFICATION

ОЛ-04  
SP-04

ОАО "Славнефть-ЯНОС". г. Ярославль  
Цех № 13 Участок Парки смешения Титул 46/2  
ОАО "Slavneft-YANOS". Yaroslavl  
Shop №13 Title 46/2

| Изм./Rev.<br>Лист/Рage | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Изм./Rev.<br>Лист/Рage | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|------------------------|---|---|---|---|---|---|---|---|---|---|------------------------|---|---|---|---|---|---|---|---|---|---|
| 1                      | X | X |   |   |   |   |   |   |   |   | 29                     |   |   |   |   |   |   |   |   |   |   |
| 2                      | X |   |   |   |   |   |   |   |   |   | 30                     |   |   |   |   |   |   |   |   |   |   |
| 3                      | X |   |   |   |   |   |   |   |   |   | 31                     |   |   |   |   |   |   |   |   |   |   |
| 4                      | X |   |   |   |   |   |   |   |   |   | 32                     |   |   |   |   |   |   |   |   |   |   |
| 5                      | X |   |   |   |   |   |   |   |   |   | 33                     |   |   |   |   |   |   |   |   |   |   |
| 6                      | X | X |   |   |   |   |   |   |   |   | 34                     |   |   |   |   |   |   |   |   |   |   |
| 7                      | X | X |   |   |   |   |   |   |   |   | 35                     |   |   |   |   |   |   |   |   |   |   |
| 8                      | X | X |   |   |   |   |   |   |   |   | 36                     |   |   |   |   |   |   |   |   |   |   |
| 9                      |   |   |   |   |   |   |   |   |   |   | 37                     |   |   |   |   |   |   |   |   |   |   |
| 10                     |   |   |   |   |   |   |   |   |   |   | 38                     |   |   |   |   |   |   |   |   |   |   |
| 11                     |   |   |   |   |   |   |   |   |   |   | 39                     |   |   |   |   |   |   |   |   |   |   |
| 12                     |   |   |   |   |   |   |   |   |   |   | 40                     |   |   |   |   |   |   |   |   |   |   |
| 13                     |   |   |   |   |   |   |   |   |   |   | 41                     |   |   |   |   |   |   |   |   |   |   |
| 14                     |   |   |   |   |   |   |   |   |   |   | 42                     |   |   |   |   |   |   |   |   |   |   |
| 15                     |   |   |   |   |   |   |   |   |   |   | 43                     |   |   |   |   |   |   |   |   |   |   |
| 16                     |   |   |   |   |   |   |   |   |   |   | 44                     |   |   |   |   |   |   |   |   |   |   |
| 17                     |   |   |   |   |   |   |   |   |   |   | 45                     |   |   |   |   |   |   |   |   |   |   |
| 18                     |   |   |   |   |   |   |   |   |   |   | 46                     |   |   |   |   |   |   |   |   |   |   |
| 19                     |   |   |   |   |   |   |   |   |   |   | 47                     |   |   |   |   |   |   |   |   |   |   |
| 20                     |   |   |   |   |   |   |   |   |   |   | 48                     |   |   |   |   |   |   |   |   |   |   |
| 21                     |   |   |   |   |   |   |   |   |   |   | 49                     |   |   |   |   |   |   |   |   |   |   |
| 22                     |   |   |   |   |   |   |   |   |   |   | 50                     |   |   |   |   |   |   |   |   |   |   |
| 23                     |   |   |   |   |   |   |   |   |   |   | 51                     |   |   |   |   |   |   |   |   |   |   |
| 24                     |   |   |   |   |   |   |   |   |   |   | 52                     |   |   |   |   |   |   |   |   |   |   |
| 25                     |   |   |   |   |   |   |   |   |   |   | 53                     |   |   |   |   |   |   |   |   |   |   |
| 26                     |   |   |   |   |   |   |   |   |   |   | 54                     |   |   |   |   |   |   |   |   |   |   |
| 27                     |   |   |   |   |   |   |   |   |   |   | 55                     |   |   |   |   |   |   |   |   |   |   |
| 28                     |   |   |   |   |   |   |   |   |   |   | 56                     |   |   |   |   |   |   |   |   |   |   |

Ревизии / Revisions

| Изм.<br>Rev. | Дата<br>Date | Отдел Автоматизации Процессов<br>Department | ОАП<br>DAP                         |
|--------------|--------------|---|------------------------------------|
|              |              | Исполнил<br>Writer                          | Нач. отдела<br>Chief of department |

|   |       |      |        |
|---|-------|------|--------|
| 1 | 11.15 | ОА - | А.А.А. |
|---|-------|------|--------|

Основание для изменения

Basis for revisions

Уточнение данных

Открытое акционерное общество  
"Славнефть-Ярославское предприятие"  
К ПРОИЗВОДСТВУ  
Начальник ОАП  
(подпись, расшифровка)  
15.01.2016

Утв. / Appr. by

Главный инженер проекта  
Project manager

18771-46/2-ATX-ОЛ-04

18771-46/2-ATX-SP-04

|                            |             |       |
|----------------------------|-------------|-------|
| Разраб.<br>Designed        | I. Remizova | 11.15 |
| Проверил<br>Checked        | A. Arkhipov | 11.15 |
| Контр.<br>Verified         | E. Kalinina | 11.15 |
| Нач. отд.<br>Chief of dep. | V. Galanin  | 11.15 |
| Утвердил<br>Approved       | M. Chalaya  | 11.15 |

МАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

| Стадия/Stage | Лист / Page | Листов / amount |
|--------------|-------------|-----------------|
| P            | 1           | 8               |

ПРОМХИМ  
ПРОЕКТ

**1 УСТАНОВКА**

Данный опросный лист определяет поставку средств КИП и автоматики, а также вспомогательных материалов для цеха №13, тит. 46/2  
ОАО "Славнефть-ЯНОС". г. Ярославль.

**UNIT**

*The present specification defines the supply of instruments and supplementary materials for shop №13, tit. 46/2 ОАО "Slavneft-YANOS". Yaroslavl.*

**2 МЕТЕОРОЛОГИЧЕСКИЕ УСЛОВИЯ УСТАНОВКИ**

**ТЕМПЕРАТУРА** Абсолютная максимальная - плюс 37 °C  
Абсолютная минимальная - минус 46 °C  
Средняя температура наиболее теплого месяца - плюс 23,2 °C  
Средняя температура наиболее холодной пятидневки - минус 34 °C

**ОТНОСИТЕЛЬНАЯ ВЛАЖНОСТЬ**  
Наиболее теплого месяца - 74 %  
Наиболее холодного месяца - 83 %

**CLIMATIC CONDITIONS**

**TEMPERATURE** Absolute maximum - plus 37 °C  
Absolute minimum - minus 46 °C  
Average of the hottest month - plus 23,2 °C  
Average of the five coldest days - minus 34 °C

**RELATIVE HUMIDITY**

The hottest month - 74%  
The coldest month - 83%

**3 ВНЕШНЯЯ ОКРАСКА**

Цвет поставляемого оборудования будет соответствовать стандартам Поставщика.

**PAINTING**

*The colour of the articles supplied shall be according to Supplier's standards.*

**4 ТЕХНИЧЕСКИЙ ПАСПОРТ И ДОКУМЕНТАЦИЯ**

Каждый прибор должен поставляться с техническим паспортом. Содержание технического паспорта и требования к документации указаны в 18771-46/2-АТХ-ОЛ-00 "Требования к документации Поставщика."  
Перечень документов Поставщика содержится в 18771-46/2-АТХ-ЗТП-04 "Запрос на техническое предложение"

**TECHNICAL PASSPORT AND DOCUMENTATION**

*Each instrument must be supplied with technical passport. The contents of technical passport and requirements for technical documentation see 18771-46/2-ATX-SP-00 "Requirements for Supplier's technical documentation".  
List of documents required from the Supplier see 18771-46/2-ATX-ITP-04 "Inquiry for technical proposal"*

МАССОВЫЙ РАСХОДОМЕР

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CORIOLIS MASS FLOWMETER

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## 5 КОМПЛЕКТ ПОСТАВКИ

В комплект поставки массового расходомера должны входить: массовый расходомер с фланцами, ответные фланцы, крепежные изделия, прокладки, кабельные вводы, ручной программатор или программное обеспечение с модемом для конфигурирования датчика с помощью РС.

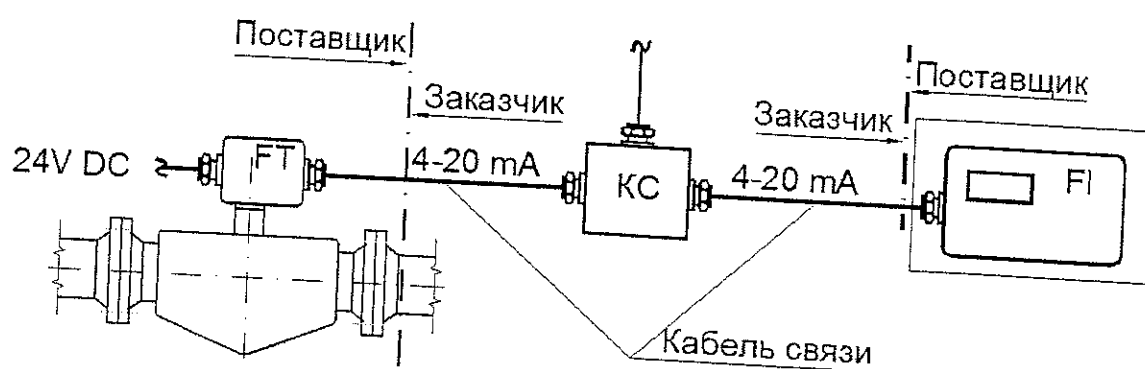
Массовые расходомеры с выносным индикатором (рис. 1) должны работать по токовой петле 4-20 мА.

В комплект поставки выносного индикатора должен входить кабельный ввод.

Кабели связи для подключения выносного индикатора не входит в комплект поставки.

Рисунок 1

Figure 1



FT - датчик

FI - выносной индикатор

КС - соединительная коробка

## SCOPE OF SUPPLY

A scope of supply of mass flowmeter shall include: mass flowmeter with flanges, companion flanges, fixing arrangements, gaskets, cable glands, manual programming device or software with modem to configure sensor using PC.

Mass flowmeter with remote indicator (fig. 1) shall work via current loop 4-20 mA.

Scope of supply of remote indicator should include a cable gland.

Communication cables for remote indicator connection are not included in scope of supply.

## 6 КАБЕЛЬНЫЕ ВВОДЫ

Комплект с двумя кабельными вводами для кабеля питания и сигнального кабеля. Кабельные вводы должны быть герметичными из никелированной латуни с возможностью крепления и заземления брони кабеля или с переходом на металлорукав.



**CABLE GLANDS**

A set with two cable glands for feed cable and signal cable.  
Cable gland shall be weather proof, plated brass having a device for fixing and grounding armor cable or for switching to metal hose.

**7 УСЛОВИЯ ЗАЩИТЫ ОТ КОРРОЗИОННЫХ СРЕД (НАЛИЧИЕ H<sub>2</sub>S).**

Оборудование КИП, подверженное воздействию сероводорода, должно быть изготовлено в соответствии с рекомендациями стандарта NACE MR 0103-2003

**CONDITIONS OF PROTECTION FROM CORROSIVE FLUIDS (H<sub>2</sub>S content)**

Instrumentation exposed to H<sub>2</sub>S influence shall be manufactured in compliance with recommendations of standard NACE MR 0103-2003

**8 КРОМКИ ОТВЕТНЫХ ФЛАНЦЕВ ПОД ПРИВАРКУ**

Кромки ответных фланцев под приварку должны соответствовать классу трубопровода или размерам труб, указанным на листах для конкретных позиций КИП.

**COMPANION FLANGES ENDS FOR WELDING**

Companion flanges ends for welding shall correspond to piping class or pipe size indicated on sheets for specific instrument tag.

| Класс трубопровода / Piping class   | Ду расходомера / FLOW METER DN |      |        |      |      |       |       |       |       |       |       |       |       |       |       |        |
|---|--------------------------------|------|--------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
|   | 3/4"                           | 1"   | 1 1/2" | 2"   | 3"   | 4"    | 6"    | 8"    | 10"   | 12"   | 14"   | 16"   | 20"   | 24"   | 32"   | 40"    |
|   | (20)                           | (25) | (40)   | (50) | (80) | (100) | (150) | (200) | (250) | (300) | (350) | (400) | (500) | (600) | (800) | (1000) |
| Наружный диаметр трубы по ГОСТ / Outside pipe wall diameter according to GOST |                                |      |        |      |      |       |       |       |       |       |       |       |       |       |       |        |
|   | 25                             | 32   | 45     | 57   | 89   | 108   | 159   | 219   | 273   | 325   | 377   | 426   | 530   | 630   | 820   | 1020   |
| Толщина стенки трубы по ГОСТ / Pipe wall thickness according to GOST          |                                |      |        |      |      |       |       |       |       |       |       |       |       |       |       |        |
| BB1   | 3,50                           | 3,50 | 4,00   | 4,00 | 4,00 | 4,00  | 5,00  | 6,00  | 7,00  | 8,00  | 9,00  | 10,00 | 10,00 | 10,00 | -     | -      |
| BB2   | 4,50                           | 4,50 | 5,00   | 5,00 | 6,00 | 8,00  | 8,00  | 8,00  | 8,00  | 9,00  | 10,00 | 10,00 | 10,00 | 10,00 | -     | -      |
| BB11  | 4,50                           | 4,50 | 5,00   | 5,00 | 6,00 | 8,00  | 8,00  | 8,00  | 8,00  | 9,00  | 10,00 | 10,00 | 10,00 | 10,00 | -     | -      |
| CB1   | 3,50                           | 3,50 | 4,00   | 4,00 | 5,00 | 6,00  | 6,00  | 7,00  | 8,00  | 8,00  | 9,00  | 10,00 | 10,00 | 10,00 | 10,00 | -      |
| DB2   | 4,50                           | 4,50 | 5,00   | 6,00 | 8,00 | 8,00  | 8,00  | 12,00 | 12,00 | 12,00 | 12,00 | 14,00 | 12,00 | -     | -     | -      |
| DB3   | 4,50                           | 5,00 | 6,00   | 7,00 | 8,00 | 8,00  | 10,00 | 12,00 | 14,00 | 14,00 | 16,00 | 16,00 | -     | -     | -     | -      |
| EB2   | 4,50                           | 5,00 | 6,00   | 6,00 | 7,00 | 8,00  | 10,00 | 12,00 | -     | -     | -     | -     | -     | -     | -     | -      |

Условный диаметр оборудования не может быть меньше 0,5 Ду трубопровода и не может быть больше Ду трубопровода.

Nominal diameter of equipment shall not be less than 0,5 piping DN and more than piping DN.

МАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

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## 9 ДОПОЛНИТЕЛЬНЫЕ ТРЕБОВАНИЯ

Межповерочный интервал: не менее трех лет.  
 Назначенный срок службы не менее 10 лет (при условиях эксплуатации, указанных в ОЛ).  
 Свидетельство о первичной поверке по стандарту РФ  
 Корпус и фланцы расходомеров должны быть из нержавеющей стали. Применение  
 разнородных материалов не допускается.  
 Корпус электронного блока прибора: алюминий с покрытием или нержавеющая сталь.  
 Поддержка технологии FDT. Интеграция в программное обеспечение Pactware, PRM, AMS.  
 Сертификат функциональной безопасности SIL2  
 Русифицированный дисплей и меню  
 Самодиагностика всех элементов прибора  
 Устойчивость к промышленной вибрации (20-100Гц)  
 Скорость среды для жидкостей не должна превышать 10 м/с,  
 для газов и пара - не более половины скорости звука.  
 Допустимые погрешности измерения массы:  
 0,15 % отн. для жидкости,  
 0,35 % отн. для газа.  
 Допустимые погрешности измерения плотности:  
 $\pm 10 \text{ кг/м}^3$

## ADDITIONAL REQUIREMEN

Calibration period: three years minimum  
 Design life: ten years minimum (under operating conditions specified in SP)  
 Primary calibration certificate in compliance with RF standard  
 Flowmeters flanges and body must be SS. Usage of dissimilar materials is not allowed.  
 Instrument electronic unit case: aluminizing or SS.  
 FDT technology support. Integration into Pactware, PRM, AMS.  
 SIL2 functional safety certificate.  
 Cyrillic display and menu.  
 Self-diagnostic of all instrument components.  
 Industrial vibration resistance (20-100 Hz)  
 Fluid velocity for liquids shall not exceed 10 m/s, for gas and steam - half of acoustic  
 speed max.  
 Admissible errors of mass calibration: 0,15% rel. for liquid, 0,35% rel. for gas.  
 Admissible errors of density measurement:  $\pm 10 \text{ kg/m}^3$ .

ООО "ПРОМХИМПРОЕКТ"  
ООО "PROMCHIMPROEKT"

# ОПРОСНЫЙ ЛИСТ SPECIFICATION

ОЛ-04  
SP-04

|                                    |                            |             |             |             |             |
|------------------------------------|----------------------------|-------------|-------------|-------------|-------------|
| НОМЕР СХЕМЫ<br>P&ID REFERENCE      | НОМЕР ЛИНИИ<br>LINE NUMBER | 2068к       | ИЗМ.<br>REV | 2068к       | ИЗМ.<br>REV |
| ПОЗИЦИЯ<br>TAG NUMBER              | ПОРЯДОК НОМЕРА<br>ORDER NO | 1           |             | 2           |             |
| КЛАСС ТРУБОПРОВОДА<br>PIPING CLASS | Ø (D нар + S) (mm)         | FFQRCA 3002 | BB1         | FFQRCA 3004 | BB1         |
|                                    |                            | 25(32x3,5)  |             | 25(32x3,5)  |             |

|                  |                               |             |     |                  |     |                        |     |
|------------------|-------------------------------|-------------|-----|------------------|-----|------------------------|-----|
| ЕДИНИЦЫ<br>UNITS | ДАВЛЕНИЕ<br>PRESSURE          | МПа         |     | ИЗЫСЧНОЕ<br>GAGE |     | АБСОЛЮТНОЕ<br>ABSOLUTE |     |
|                  | ТЕМПЕРАТУРА<br>TEMPERATURE    | °C          |     |                  |     |                        |     |
|                  | ВЯЗКОСТЬ<br>VISCOSITY         | сСт         |     |                  |     |                        |     |
|                  | РАСХОД<br>FLOW                | л/ч (T/H)   |     | л/ч (T/H)        |     |                        |     |
|                  | ПЛОТНОСТЬ<br>SPECIFIC GRAVITY | кг/м³ (T/H) | (G) | л/ч (T/H)        | (S) | л/ч (T/H)              | (L) |

|                                  |  |                            |                           |                       |      |                       |            |      |      |
|----------------------------------|--|----------------------------|---------------------------|-----------------------|------|-----------------------|------------|------|------|
| ПРИРОДА СРЕДЫ<br>NATURE OF FLUID | РАСЧЕТНОЕ<br>DESIGN  | МИНИМАЛ<br>OPERATING       | МАКС. ПОТЕРИ<br>MAXI LOSS | Депрессорная присадка | L    | Депрессорная присадка | L          |      |      |
|                                  | ТЕМПЕРАТУРА<br>TEMPERATURE   | ТЕМПЕРАТУРА<br>TEMPERATURE | РАБОЧЕЕ<br>OPERATING      | 1,61                  | 0,1  | 0,05                  | 1,61       | 0,1  | 0,05 |
| ЖИДКОСТЬ<br>LIQUID               | УПРУГОСТЬ ПАРОВ<br>LIQUID VAPOR PRESSURE                                   | кг.ф / см² (a)             |                           | 50(2)                 | 50   |                       | 50(2)      | 50   |      |
|                                  | ВЯЗКОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>VISCOSITY AT OPERATING CONDITIONS         |                            |                           | 100                   | 1500 | 5000                  | 100        | 1500 | 5000 |
| ГАЗ, ПАР<br>GAS, STEAM           | ПЛОТНОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>SPECIFIC GRAVITY AT OPERATING CONDITIONS |                            |                           | 5,0 - 50,0            |      |                       | 5,0 - 50,0 |      |      |
|                                  | ПРОЦЕНТНОЕ СОДЕРЖАНИЕ ГАЗОВОЙ ФАЗЫ<br>THE PERCENTAGE OF GAS PHASE          |                            |                           | 830 до 890            |      |                       | 830 до 890 |      |      |

|                              |                        |                                       |                           |                      |                            |                                   |                        |   |  |                |                      |                            |                      |                      |                             |                       |
|------------------------------|------------------------|---------------------------------------|---------------------------|----------------------|----------------------------|-----------------------------------|------------------------|---|--|----------------|----------------------|----------------------------|----------------------|----------------------|-----------------------------|-----------------------|
| ПРЕОБРАЗОВАТЕЛЬ<br>CONVERTER | ИНДИКАТОР<br>INDICATOR | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW            | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL | ПИТАНИЕ<br>SUPPLY      | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | ШКАЛА<br>MEASURING RANGE                         | РАСХОД<br>FLOW | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL | ЗАЩИТА<br>PROTECTION | ПРИСОЕДИНЕНИЕ<br>CONNECTION | ПРИМЕЧАНИЯ:<br>NOTES: |
|                              | ВСТРОЕННЫЙ<br>BUILT-IN | ВСТРОЕННЫЙ<br>BUILT-IN                | ЭЛЕКТРОННЫЙ<br>ELECTRONIC | 4-20mA (Exi)+HART    | 4-20mA (Exi)               | 24V DC                            | 2-ПРОВОДНАЯ<br>2 WIRES | 0-5000 кг/ч                             | алюминий с покрытием или SS<br>aluminizing or SS | SS             | IP54 min             | (1)                        | PN40                 | Исп.3 (R13)          | Исп.2 (V13)                 | 1/2" NPT              |

(2) ПРИ ПРОПАРКЕ 200 °C  
IN STEAMING 200 °C  
КАБЕЛЬНЫЕ ВВОДЫ ИЗ НИКЕЛИРОВАННОЙ ЛАТУНИ ДОЛЖНЫ ИМЕТЬ ПЕРЕХОД НА МЕТАЛЛОУКАВ.  
CABLE GLAND PLATED BRASS SHALL HAVE A DEVICE FOR SWITCHING TO METAL HOSE. FOR FEED CABLE AND SIGNAL CABLE -

ОД 6... 12 mm DN 20 и D out./d ins.=25,7/18,7)

ТЕХНОЛОГИЧЕСКИЙ ОТДЕЛ  
PROCESS DEPARTMENT

МОНТАЖНЫЙ ОТДЕЛ  
DEPARTMENT

ИЗГОТОВИТЕЛЬ  
MANUFACTURER

МАССОВЫЙ РАСХОДОМЕР  
CORIOLIS MASS FLOWMETER

18771-46/2-ATX-ОЛ-04  
18771-46/2-ATX-SP-04

ЛИСТ ИЗМ.  
PAGE REV.  
6

ООО "ПРОМХИМПРОЕКТ"  
ООО "PROMCHIMPROEKT"

# ОПРОСНЫЙ ЛИСТ SPECIFICATION

ОЛ-04  
SP-04

|                                    |                            |            |             |
|------------------------------------|----------------------------|------------|-------------|
| НОМЕР СХЕМЫ<br>P&ID REFERENCE      | НОМЕР ЛИНИИ<br>LINE NUMBER | 3953к      | ИЗМ.<br>REV |
| ПОЗИЦИЯ<br>TAG NUMBER              | ПОРЯДОК НОМЕРА<br>ORDER NO | FFQRC 3012 | 2078к       |
| КЛАСС ТРУБОПРОВОДА<br>PIPING CLASS | Ø (D нар + S) (mm)         | BB1        | 25(32x3,5)  |
|                                    |                            | FFQRC 3013 | 4           |
|                                    |                            | BB1        | 25(32x3,5)  |

|                  |                               |             |                    |                        |
|------------------|-------------------------------|-------------|--------------------|------------------------|
| ЕДИНИЦЫ<br>UNITS | ДАВЛЕНИЕ<br>PRESSURE          | МПа         | ИЗБЫТОЧНОЕ<br>GAGE | АБСОЛЮТНОЕ<br>ABSOLUTE |
|                  | ТЕМПЕРАТУРА<br>TEMPERATURE    | °C          |                    |                        |
|                  | ВЯЗКОСТЬ<br>VISCOSITY         | сСт/сС      |                    |                        |
|                  | РАСХОД<br>FLOW                | л/ч (T/H)   | г/ч (T/H)          | кг/ч (T/H)             |
|                  | ПЛОТНОСТЬ<br>SPECIFIC GRAVITY | г/см³ (T/H) | г/см³ (T/H)        | г/см³ (T/H)            |

|  |  |                      |                           |                       |           |                          |           |
|--|--|----------------------|---------------------------|-----------------------|-----------|--------------------------|-----------|
| ПРИРОДА СРЕДЫ<br>NATURE OF FLUID             | РАСЧЕТНОЕ<br>DESIGN  | МИНИМАЛ<br>OPERATING | МАКС. ПОТЕРИ<br>MAXI LOSS | Депрессорная присадка | L         | Противоизносная присадка | L         |
| ДАВЛЕНИЕ<br>PRESSURE                         | 1,61   | 0,1                  | 0,05                      | 1,61                  | 0,1       | 0,05                     |           |
| ТЕМПЕРАТУРА<br>TEMPERATURE                   | 70(2)  |                      | 30                        | 90(2)                 |           | 90                       |           |
| РАСХОД<br>FLOW                               | 100  | 1500                 | 5000                      | 100                   | 1500      | 5000                     |           |
| ЖИДКОСТЬ<br>LIQUID                           | УПРУГОСТЬ ПАРОВ<br>LIQUID VAPOR PRESSURE                                   | кг. f / cm² (a)      |                           | 5,0 - 50,0            |           | 3,0 - 10,0               |           |
|  | ВЯЗКОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>VISCOSITY AT OPERATING CONDITIONS         |                      |                           | 830 до 890            |           | 830 до 890               |           |
|  | ПЛОТНОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>SPECIFIC GRAVITY AT OPERATING CONDITIONS |                      |                           |                       |           |                          |           |
|  | ПРОЦЕНТОЕ СОДЕРЖАНИЕ ГАЗОВОЙ ФАЗЫ<br>THE PERCENTAGE OF GAS PHASE           |                      |                           |                       |           |                          |           |
| ГАЗ, ПАР<br>GAS, STEAM                       | ВЛАЖНОСТЬ ОТНОСИТЕЛЬНАЯ, ДОЛИ ЕД.<br>WET OF GAS, STEAM                     |                      |                           |                       |           |                          |           |
|  | КОЭФФИЦИЕНТ СЖИМАЕМОСТИ<br>COMPRESSION FACTOR                              |                      |                           |                       |           |                          |           |
|  | МОЛЯРНАЯ МАССА, кг/моль<br>MOLAR WEIGHT, kg/mol                            |                      |                           |                       |           |                          |           |
|  | ПЛОТНОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>SPECIFIC GRAVITY AT OPERATING CONDITIONS |                      |                           |                       |           |                          |           |
|  | ВЯЗКОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>VISCOSITY AT OPER. CONDITIONS             |                      |                           |                       |           |                          |           |
| В СООТВЕТСТВИИ С НОРМОЙ<br>ACCORDING TO NORM | NACE MR 01.75  | ДА<br>YES            | НЕТ<br>NO                 | ДА<br>YES             | НЕТ<br>NO | ДА<br>YES                | НЕТ<br>NO |

|                                   |                                       |                                       |                      |                            |                            |   |   |                            |                      |                            |                            |  |  |  |  |                                     |                      |                            |                            |                            |                 |                     |                     |                     |
|-----------------------------------|---------------------------------------|---------------------------------------|----------------------|----------------------------|----------------------------|---|---|----------------------------|----------------------|----------------------------|----------------------------|--|--|--|--|-------------------------------------|----------------------|----------------------------|----------------------------|----------------------------|-----------------|---------------------|---------------------|---------------------|
| ПРЕОБРАЗОВАТЕЛЬ<br>CONVERTER      | ИНДИКАТОР<br>INDICATOR                | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW       | ПЛОТНОСТЬ<br>DENSITY       | ТЕМПЕРАТУРА<br>TEMPERATURE | ПИТАНИЕ<br>SUPPLY                       | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | МАСШТАБ<br>MEASURING RANGE | РАСХОД<br>FLOW       | ПЛОТНОСТЬ<br>DENSITY       | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL                   | КОРПУС ЭЛЕКТРОНИКИ<br>ELECTRONICS BODY     | ИЗМЕРИТЕЛЬНЫЙ ЭЛЕМЕНТ<br>MEASURING ELEMENT         | КОРПУС ПРИБОРА И ФЛАНЕЦ<br>HOUSING BODY AND FLANGE | ОТВЕТНЫЙ ФЛАНЕЦ<br>COMPANION FLANGE | ЗАЩИТА<br>PROTECTION | ПЛОТНОСТЬ<br>DENSITY       | ТЕМПЕРАТУРА<br>TEMPERATURE | ПРИСОЕДИНЕНИЕ<br>CONNECTOR | РАЗМЕР<br>SIZE  | СЕРИЯ<br>RATING     | ПОВЕРХНОСТЬ<br>FACE | ПОВЕРХНОСТЬ<br>FACE |
| ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW                        | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПИТАНИЕ<br>SUPPLY          | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | МАСШТАБ<br>MEASURING RANGE              | РАСХОД<br>FLOW             | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL       | КОРПУС ЭЛЕКТРОНИКИ<br>ELECTRONICS BODY | ИЗМЕРИТЕЛЬНЫЙ ЭЛЕМЕНТ<br>MEASURING ELEMENT | КОРПУС ПРИБОРА И ФЛАНЕЦ<br>HOUSING BODY AND FLANGE | ОТВЕТНЫЙ ФЛАНЕЦ<br>COMPANION FLANGE                | ЗАЩИТА<br>PROTECTION                | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПРИСОЕДИНЕНИЕ<br>CONNECTOR | РАЗМЕР<br>SIZE             | СЕРИЯ<br>RATING | ПОВЕРХНОСТЬ<br>FACE | ПОВЕРХНОСТЬ<br>FACE |                     |
| ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW                        | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПИТАНИЕ<br>SUPPLY          | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | МАСШТАБ<br>MEASURING RANGE              | РАСХОД<br>FLOW             | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL       | КОРПУС ЭЛЕКТРОНИКИ<br>ELECTRONICS BODY | ИЗМЕРИТЕЛЬНЫЙ ЭЛЕМЕНТ<br>MEASURING ELEMENT | КОРПУС ПРИБОРА И ФЛАНЕЦ<br>HOUSING BODY AND FLANGE | ОТВЕТНЫЙ ФЛАНЕЦ<br>COMPANION FLANGE                | ЗАЩИТА<br>PROTECTION                | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПРИСОЕДИНЕНИЕ<br>CONNECTOR | РАЗМЕР<br>SIZE             | СЕРИЯ<br>RATING | ПОВЕРХНОСТЬ<br>FACE | ПОВЕРХНОСТЬ<br>FACE |                     |
| ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW                        | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПИТАНИЕ<br>SUPPLY          | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | МАСШТАБ<br>MEASURING RANGE              | РАСХОД<br>FLOW             | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL       | КОРПУС ЭЛЕКТРОНИКИ<br>ELECTRONICS BODY | ИЗМЕРИТЕЛЬНЫЙ ЭЛЕМЕНТ<br>MEASURING ELEMENT | КОРПУС ПРИБОРА И ФЛАНЕЦ<br>HOUSING BODY AND FLANGE | ОТВЕТНЫЙ ФЛАНЕЦ<br>COMPANION FLANGE                | ЗАЩИТА<br>PROTECTION                | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПРИСОЕДИНЕНИЕ<br>CONNECTOR | РАЗМЕР<br>SIZE             | СЕРИЯ<br>RATING | ПОВЕРХНОСТЬ<br>FACE | ПОВЕРХНОСТЬ<br>FACE |                     |
| ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER | РАСХОД<br>FLOW                        | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПИТАНИЕ<br>SUPPLY          | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM | МАСШТАБ<br>MEASURING RANGE              | РАСХОД<br>FLOW             | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | МАТЕРИАЛ<br>MATERIAL       | КОРПУС ЭЛЕКТРОНИКИ<br>ELECTRONICS BODY | ИЗМЕРИТЕЛЬНЫЙ ЭЛЕМЕНТ<br>MEASURING ELEMENT | КОРПУС ПРИБОРА И ФЛАНЕЦ<br>HOUSING BODY AND FLANGE | ОТВЕТНЫЙ ФЛАНЕЦ<br>COMPANION FLANGE                | ЗАЩИТА<br>PROTECTION                | ПЛОТНОСТЬ<br>DENSITY | ТЕМПЕРАТУРА<br>TEMPERATURE | ПРИСОЕДИНЕНИЕ<br>CONNECTOR | РАЗМЕР<br>SIZE             | СЕРИЯ<br>RATING | ПОВЕРХНОСТЬ<br>FACE | ПОВЕРХНОСТЬ<br>FACE |                     |

ПРИМЕЧАНИЯ:  
NOTES: (1) Уточняется поставщиком  
PRECISED BY VENDOR (2) ПРИ ПРОПАРКЕ 200 °C  
IN STEAMING 200 °C  
(3) КАБЕЛЬНЫЕ ВВОДЫ ИЗ НИКЕЛИРОВАННОЙ ЛАТУНИ ДОЛЖНЫ ИМЕТЬ ПЕРЕХОД НА МЕТАЛЛОУКАВ.  
CABLE GLAND PLATED BRASS SHALL HAVE A DEVICE FOR SWITCHING TO METAL HOSE. FOR FEED CABLE AND SIGNAL CABLE -  
OD 6... 12 mm DN 20 и D out/d ins.=25,7/18,7)

|  |              |                   |                        |                      |                               |              |                   |                        |                      |
|--|--------------|-------------------|------------------------|----------------------|-------------------------------|--------------|-------------------|------------------------|----------------------|
| ТЕХНОЛОГИЧЕСКИЙ ОТДЕЛ<br>PROCESS DEPARTMENT    |              |                   |                        |                      | МОНТАЖНЫЙ ОТДЕЛ<br>DEPARTMENT |              |                   |                        |                      |
| Изм.<br>Rev.                                   | Дата<br>Date | Должность<br>Posi | Фамилия<br>Family name | Подпись<br>Signature | Изм.<br>Rev.                  | Дата<br>Date | Должность<br>Posi | Фамилия<br>Family name | Подпись<br>Signature |
|  |              |                   |                        |                      |                               |              |                   |                        |                      |
| ИЗГОТОВИТЕЛЬ<br>MANUFACTURER                   |              |                   |                        |                      | 18771-46/2-ATX-ОЛ-04          |              |                   |                        |                      |
| МАССОВЫЙ РАСХОДОМЕР<br>CORIOLIS MASS FLOWMETER |              |                   |                        |                      | 18771-46/2-ATX-SP-04          |              |                   |                        |                      |
|  |              |                   |                        |                      | ЛИСТ ИЗМ.<br>PAGE REV.        |              |                   |                        |                      |
|  |              |                   |                        |                      | 7 1                           |              |                   |                        |                      |

ООО "ПРОМХИМПРОЕКТ"  
ООО "ПРОМХИМПРОЕКТ"

# ОПРОСНЫЙ ЛИСТ SPECIFICATION

ОЛ-04  
SP-04

|                                    |                            |            |            |            |            |
|------------------------------------|----------------------------|------------|------------|------------|------------|
| НОМЕР СХЕМЫ<br>P&ID REFERENCE      | НОМЕР ЛИНИИ<br>LINE NUMBER | 2078к      | ИЗМ<br>REV | 2078к      | ИЗМ<br>REV |
| ПОЗИЦИЯ<br>TAG NUMBER              | ПОРЯДОК НОМЕР<br>ORDER NO  | FFQRC 3014 | 5          | FFQRC 3015 | 6          |
| КЛАСС ТРУБОПРОВОДА<br>PIPING CLASS | Ø (D нар. + S) (mm)        | BB1        | 25(32x3,5) | BB1        | 25(32x3,5) |

| РАБОЧИЕ УСЛОВИЯ<br>OPERATING CONDITIONS |                                       | ИЗЫТОЧНОЕ<br>GAGE |                                | АБСОЛЮТНОЕ<br>ABSOLUTE |  |
|---|---------------------------------------|-------------------|--------------------------------|------------------------|--|
| ДАВЛЕНИЕ<br>PRESSURE                    | МПа                                   |                   |                                |                        |  |
| ТЕМПЕРАТУРА<br>TEMPERATURE              | °C                                    |                   |                                |                        |  |
| ВЯЗКОСТЬ<br>VISCOSITY                   | сСт                                   |                   |                                |                        |  |
| РАСХОД<br>FLOW                          | л/ч (т/ч)<br>FOR GAS - KG / H (T / H) | (G)               | л/ч (т/ч)<br>FOR STEAM - T / H | (S)                    | л/ч (т/ч)<br>FOR LIQUID - KG / H (T / H) |
| ПЛОТНОСТЬ<br>SPECIFIC GRAVITY           | кг/м³<br>KG / M³                      |                   |                                |                        |  |

| ПРИРОДА СРЕДЫ<br>NATURE OF FLUID   |   | СОСТОЯНИЕ<br>STATE   |                           | Противоизносная присадка: L |           |      | Противоизносная присадка: L |           |      |
|--|---|----------------------|---------------------------|-----------------------------|-----------|------|-----------------------------|-----------|------|
| ДАВЛЕНИЕ<br>PRESSURE   | РАСЧЕТНОЕ<br>DESIGN                             | МИНИМАЛ<br>OPERATING | МАКС. ПОТЕРИ<br>MAXI LOSS | 1,61                        | 0,1       | 0,05 | 1,61                        | 0,1       | 0,05 |
| ТЕМПЕРАТУРА<br>TEMPERATURE   | РАСЧЕТНОЕ<br>DESIGN                             | РАБОЧЕЕ<br>OPERATING |                           | 90(2)                       | 90        |      | 90(2)                       | 90        |      |
| РАСХОД<br>FLOW   | МИНИМАЛ<br>MINI                                 | НОМИНАЛ<br>NOM       | МАКСИМАЛ<br>MAXI          | 100                         | 1500      | 5000 | 100                         | 1500      | 5000 |
| УПРУГОСТЬ ПАРОВ<br>LIQUID VAPOR PRESSURE                                   | kg.f / cm² (a)                                  |                      |                           |                             |           |      |                             |           |      |
| ВЯЗКОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>VISCOSITY AT OPERATING CONDITIONS         |   |                      |                           | 3,0 - 10,0                  |           |      | 3,0 - 10,0                  |           |      |
| ПЛОТНОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>SPECIFIC GRAVITY AT OPERATING CONDITIONS |   |                      |                           | 830 до 890                  |           |      | 830 до 890                  |           |      |
| ПРОЦЕНТНОЕ СОДЕРЖАНИЕ ГАЗОВОЙ ФАЗЫ<br>THE PERCENTAGE OF GAS PHASE          |   |                      |                           |                             |           |      |                             |           |      |
| ВЛАЖНОСТЬ ОТНОСИТЕЛЬНАЯ, ДОЛИ ЕД.<br>WET OF GAS, STEAM                     |   |                      |                           |                             |           |      |                             |           |      |
| КОЭФФИЦИЕНТ СЖИМАЕМОСТИ<br>COMPRESSIBILITY FACTOR                          | МОЛЯРНАЯ МАССА, кг/моль<br>MOLAR WEIGHT, kg/mol |                      |                           |                             |           |      |                             |           |      |
| ПЛОТНОСТЬ ПРИ РАБОЧИХ УСЛОВИЯХ<br>SPECIFIC GRAVITY AT OPERATING CONDITIONS |   |                      |                           |                             |           |      |                             |           |      |
| ВЯЗКОСТЬ ПРИ РАБ. УСЛОВИЯХ<br>VISCOSITY AT OPER. CONDITIONS                |   |                      |                           |                             |           |      |                             |           |      |
| В СООТВЕТСТВИИ С НОРМОЙ<br>ACCORDING TO NORM                               | NACE MR 01.75                                   |                      |                           | ДА<br>YES                   | НЕТ<br>NO |      | ДА<br>YES                   | НЕТ<br>NO |      |

| ПРЕОБРАЗОВАТЕЛЬ<br>CONVERTER |                    | ИДИКАТОР<br>INDICATOR    |                    | ТИП ПРЕОБРАЗОВАТЕЛЯ<br>TYPE CONVERTER |                     | ВЫХОДНЫЕ СИГНАЛЫ<br>OUTPUT SIGNAL |                        | ПИТАНИЕ<br>SUPPLY |        | СХЕМА ПОДКЛЮЧЕНИЯ<br>CONNECTION DIAGRAM |                               | ШКАЛА<br>MEASURING RANGE |  | РАСХОД<br>FLOW                                   |             | ПЛОТНОСТЬ<br>DENSITY                             |  | ТЕМПЕРАТУРА<br>TEMPERATURE |  |
|------------------------------|--------------------|--------------------------|--------------------|---------------------------------------|---------------------|-----------------------------------|------------------------|-------------------|--------|---|-------------------------------|--------------------------|--|--|-------------|--|--|----------------------------|--|
| ВСТРОЕННЫЙ<br>BUILT - IN     | ВЫНОСНОЙ<br>REMOTE | ВСТРОЕННЫЙ<br>BUILT - IN | ВЫНОСНОЙ<br>REMOTE | ЭЛЕКТРОННЫЙ<br>ELECTRONIC             | ИНТЕЛЛЕКТ.<br>SMART | 4-20mA (Exi)+HART                 | активный (1)<br>active | 24V DC            | 220 AC | 2-ПРОВОДНАЯ<br>2 WIRES                  | МНОГОПРОВОДНАЯ<br>MULTI WIRES | 0-5000 кг/ч              | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч                | алюминий с покрытием или SS<br>aluminizing or SS |
| ВСТРОЕННЫЙ<br>BUILT - IN     | ВЫНОСНОЙ<br>REMOTE | ВСТРОЕННЫЙ<br>BUILT - IN | ВЫНОСНОЙ<br>REMOTE | ЭЛЕКТРОННЫЙ<br>ELECTRONIC             | ИНТЕЛЛЕКТ.<br>SMART | 4-20mA (Exi)                      | активный (1)<br>active | 24V DC            | 220 AC | 2-ПРОВОДНАЯ<br>2 WIRES                  | МНОГОПРОВОДНАЯ<br>MULTI WIRES | 0-5000 кг/ч              | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч                | алюминий с покрытием или SS<br>aluminizing or SS |
| ВСТРОЕННЫЙ<br>BUILT - IN     | ВЫНОСНОЙ<br>REMOTE | ВСТРОЕННЫЙ<br>BUILT - IN | ВЫНОСНОЙ<br>REMOTE | ЭЛЕКТРОННЫЙ<br>ELECTRONIC             | ИНТЕЛЛЕКТ.<br>SMART | 4-20mA (Exi)                      | активный (1)<br>active | 24V DC            | 220 AC | 2-ПРОВОДНАЯ<br>2 WIRES                  | МНОГОПРОВОДНАЯ<br>MULTI WIRES | 0-5000 кг/ч              | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч                | алюминий с покрытием или SS<br>aluminizing or SS |
| ВСТРОЕННЫЙ<br>BUILT - IN     | ВЫНОСНОЙ<br>REMOTE | ВСТРОЕННЫЙ<br>BUILT - IN | ВЫНОСНОЙ<br>REMOTE | ЭЛЕКТРОННЫЙ<br>ELECTRONIC             | ИНТЕЛЛЕКТ.<br>SMART | 4-20mA (Exi)                      | активный (1)<br>active | 24V DC            | 220 AC | 2-ПРОВОДНАЯ<br>2 WIRES                  | МНОГОПРОВОДНАЯ<br>MULTI WIRES | 0-5000 кг/ч              | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч | алюминий с покрытием или SS<br>aluminizing or SS | алюминий с покрытием или SS<br>aluminizing or SS | 0-5000 кг/ч                | алюминий с покрытием или SS<br>aluminizing or SS |

ПРИМЕЧАНИЯ:  
NOTES: (1) УТОЧНЯЕТСЯ ПОСТАВЩИКОМ  
PRECISED BY VENDOR (2) ПРИ ПРОПАРКЕ 200 °C  
IN STEAMING 200 °C  
(3) КАБЕЛЬНЫЕ ВВОДЫ ИЗ НИКЕЛИРОВАННОЙ ЛАТУНИ ДОЛЖНЫ ИМЕТЬ ПЕРЕХОД НА МЕТАЛЛОУКАВ.  
CABLE GLAND PLATED BRASS SHALL HAVE A DEVICE FOR SWITCHING TO METAL HOSE. FOR FEED CABLE AND SIGNAL CABLE -  
OD 6... 12 mm DN 20 и D out./d ins.=25,7/18,7)

| ТЕХНОЛОГИЧЕСКИЙ ОТДЕЛ<br>PROCESS DEPARTMENT |              |                   |                        |                      | МОНТАЖНЫЙ ОТДЕЛ<br>DEPARTMENT |              |                   |                        |                      |
|---|--------------|-------------------|------------------------|----------------------|-------------------------------|--------------|-------------------|------------------------|----------------------|
| Изм.<br>Rev.                                | Дата<br>Date | Должность<br>Post | Фамилия<br>Family name | Подпись<br>Signature | Изм.<br>Rev.                  | Дата<br>Date | Должность<br>Post | Фамилия<br>Family name | Подпись<br>Signature |

|                              |  |  |                   |                   |
|------------------------------|--|--|-------------------|-------------------|
| ИЗГОТОВИТЕЛЬ<br>MANUFACTURER | МАССОВЫЙ РАСХОДОМЕР<br>CORIOLIS MASS FLOWMETER | 18771-46/2-ATX-ОЛ-04<br>18771-46/2-ATX-SP-04 | ЛИСТ<br>PAGE<br>8 | ИЗМ.<br>REV.<br>1 |
|------------------------------|--|--|-------------------|-------------------|