Checklist of information needed to perform energy audits for grain dryers

An electronic copy of the information listed below is preferred and will expedite energy audits.

☐ Letter describing farming operation:
  o operator name(s) __________________________________________________________
  o mailing address __________________________________________________________
  o phone/cell ______________________________________________________________
  o fax number ______________________________________________________________
  o e-mail address ____________________________________________________________
  o years farming _____________________________________________________________
  o drying experience _______ years
  o address of existing dryer __________________________________________________
  o year dryer installed _______
  o existing dryer performance ________________________________________________
  o experience with different dryers ____________________________________________
  o aerial image of grain storage system
  o other pertinent details _____________________________________________________

☐ Inventory of storage bins and corresponding fans (see table on following page)

☐ Number of bushels dried annually for two typical years (from yield monitor or notes from scales)
  o year ________ bushels dried ________
  o year ________ bushels dried ________

☐ Record of grain moisture during harvest (from yield monitor or notes from scales)

☐ Grain moistures:
  o when harvest begins ______%
  o when drying ends ______%
  o exiting dryer ______%

☐ Operating conditions of existing dryer
  o drying capacity ________bu/h
  o air temperature ________F
  o airflow rate ________cfm/bu

☐ LP or natural gas bills during drying season for same two years
  o gallons or cubic feet _________
  o total cost _________

---

1 Compiled by Sam G. McNeill, PE, agricultural engineer with the University of Kentucky Cooperative Extension Service. Phone: 270-365-7541 x 213. Email: smcneill@uky.edu
Electric bills each year for same two years
  o kilowatt hours __________
  o total cost $__________

Letter describing equipment installer(s):
  o business name ____________________________________________
  o mailing address __________________________________________
  o phone/cell _______________________________________________
  o fax number ______________________________________________
  o e-mail address ____________________________________________
  o number of years in operation _____________________________
  o experience with particular type of equipment __________________
  o line of all equipment sold/serviced __________________________
  o bonded/licensed/insured? _________________________________
  o number of systems installed ________________________________
  o other relevant details ______________________________________

Equipment cost—provide written quote(s)
  o new dryer $_______________
  o installation $_______________
  o all approved/associated handling equipment for dryer $__________

Please also provide the following information for all new dryers—may be supplied by manufacturer:

Dryer description
  o model no. ____________________________
  o holding capacity ____________ bu
    ▪ heat section ____________ bu
    ▪ cool section ____________ bu
  o burner capacity ____________ Btu/h
  o fan size ________________ hp
  o fan capacity ____________ cfm

Predicted capacity and energy consumption for two drying conditions under average ambient temperature and relative humidity conditions in Kentucky
  o moisture removed ______ 5 points
    ▪ 70/65 for Sep ____________ bu/h ____________ Btu/lb water
    ▪ 60/60 for Oct ____________ bu/h ____________ Btu/lb water
    ▪ 50/65 for Nov ____________ bu/h ____________ Btu/lb water
  o moisture removed ______ 10 points
    ▪ 70/65 for Sep ____________ bu/h ____________ Btu/lb water
    ▪ 60/60 for Oct ____________ bu/h ____________ Btu/lb water
    ▪ 50/65 for Nov ____________ bu/h ____________ Btu/lb water

Predicted drying cost with existing price for electricity and LP or natural gas
  o gas ____________________________ cents/bu
  o electricity __________________________ cents/bu
Grain bin inventory for _____________________________ farm.  Date: ________________
Recorded by _____________________________.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Example</td>
<td>30</td>
<td>9</td>
<td>32”</td>
<td>18”</td>
<td>24</td>
<td>YY-10-271</td>
<td>ZZ-2616</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</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>
</tr>
<tr>
<td>7</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>
</tr>
<tr>
<td>9</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>
</tr>
<tr>
<td>11</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>
</tr>
<tr>
<td>13</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>
</tr>
<tr>
<td>15</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>
</tr>
<tr>
<td>17</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>
</tr>
<tr>
<td>19</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>
</tr>
</tbody>
</table>

Add more pages as needed.