### Laboratory Information

<table>
<thead>
<tr>
<th>Name of disease (or topic) for which you are a designated WOAH Reference Laboratory:</th>
<th>AHPND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address of laboratory:</td>
<td>1117 E. Lowell St. Bldg 90, Room 114, Tucson AZ, 85721</td>
</tr>
<tr>
<td>Tel.:</td>
<td>+1-520 621 8727</td>
</tr>
<tr>
<td>E-mail address:</td>
<td><a href="mailto:adhar@arizona.edu">adhar@arizona.edu</a></td>
</tr>
<tr>
<td>Website:</td>
<td><a href="https://aquapath.cales.arizona.edu/">https://aquapath.cales.arizona.edu/</a></td>
</tr>
<tr>
<td>Name (including Title) of Head of Laboratory (Responsible Official):</td>
<td>Dr. Arun Dhar</td>
</tr>
<tr>
<td>Name (including Title and Position) of WOAH Reference Expert:</td>
<td>Arun K. Dhar, Professor &amp; Director, Aquaculture Pathology Laboratory</td>
</tr>
<tr>
<td>Which of the following defines your laboratory? Check all that apply:</td>
<td>Academic institution</td>
</tr>
</tbody>
</table>

### TOR1: DIAGNOSTIC METHODS

1. Did your laboratory perform diagnostic tests for the specified disease/topic for purposes such as disease diagnosis, screening of animals for export, surveillance, etc.? (Not for quality control, proficiency testing or staff training)

   Yes

<table>
<thead>
<tr>
<th>Diagnostic Test</th>
<th>Indicated in WOAH Manual (Yes/No)</th>
<th>Total number of test performed last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indirect diagnostic tests</td>
<td></td>
<td>Nationally</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Direct diagnostic tests</td>
<td></td>
<td>Nationally</td>
</tr>
<tr>
<td>PCR / Real-time PCR</td>
<td>Yes</td>
<td>1377</td>
</tr>
<tr>
<td>Histology</td>
<td>Yes</td>
<td>80</td>
</tr>
</tbody>
</table>

### TOR2: REFERENCE MATERIAL

2. Did your laboratory produce or supply imported standard reference reagents officially recognised by WOAH?

   No

3. Did your laboratory supply standard reference reagents (non-WOAH-approved) and/or other diagnostic reagents to WOAH Members?

   Yes

<table>
<thead>
<tr>
<th>TYPE OF REAGENT AVAILABLE</th>
<th>RELATED DIAGNOSTIC TEST</th>
<th>PRODUCED/ PROVIDE</th>
<th>AMOUNT SUPPLIED NATIONALLY (ML, MG)</th>
<th>AMOUNT SUPPLIED INTERNATIONALLY (ML, MG)</th>
<th>NO. OF RECIPIENT WOAH MEMBER COUNTRIES</th>
<th>COUNTRY OF RECIPIENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Control</td>
<td>PCR</td>
<td>Produced</td>
<td>200 mg</td>
<td>500 mg</td>
<td>8</td>
<td>CHILE, ECUADOR, INDIA, KOREA (REP. OF), MEXICO, SINGAPORE, UNITED STATES OF AMERICA,</td>
</tr>
</tbody>
</table>
4. Did your laboratory produce vaccines?
No
5. Did your laboratory supply vaccines to WOAH Members?
No

**TOR3: NEW PROCEDURES**

6. Did your laboratory develop new diagnostic methods for the designated pathogen or disease?
No
7. Did your laboratory validate diagnostic methods according to WOAH Standards for the designated pathogen or disease?
No
8. Did your laboratory develop new vaccines for the designated pathogen or disease?
No
9. Did your laboratory validate vaccines according to WOAH Standards for the designated pathogen or disease?
No

**TOR4: DIAGNOSTIC TESTING FACILITIES**

10. Did your laboratory carry out diagnostic testing for other WOAH Members?
Yes

<table>
<thead>
<tr>
<th>NAME OF WOAH MEMBER COUNTRY SEEKING ASSISTANCE</th>
<th>DATE</th>
<th>WHICH DIAGNOSTIC TEST USED</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF DIAGNOSTIC SUPPORT</th>
<th>NO. SAMPLES RECEIVED FOR PROVISION OF CONFIRMATORY DIAGNOSES</th>
</tr>
</thead>
<tbody>
<tr>
<td>BELGIUM</td>
<td>2023-12-13</td>
<td>AHPND</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>2023-12-12</td>
<td>AHPND</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>CANADA</td>
<td>2023-12-06</td>
<td>AHPND</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>CHILE</td>
<td>2023-12-05</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>COLOMBIA</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>DENMARK</td>
<td>2023-12-07</td>
<td>AHPND</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>ECUADOR</td>
<td>2023-12-21</td>
<td>AHPND</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>FRANCE</td>
<td>2023-12-13</td>
<td>AHPND</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>FRENCH POLYNESIA</td>
<td>2023-12-15</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GERMANY</td>
<td>2023-12-22</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>GUATEMALA</td>
<td>2023-12-06</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>HONDURAS</td>
<td>2023-12-06</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>INDONESIA</td>
<td>2023-12-13</td>
<td>AHPND</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>ISRAEL</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>MADAGASCAR</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>MEXICO</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>20</td>
<td>0</td>
</tr>
<tr>
<td>MOZAMBIQUE</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>THE NETHERLANDS</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>NORWAY</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>OMAN</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>22</td>
<td>0</td>
</tr>
<tr>
<td>PERU</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>SINGAPORE</td>
<td>2023-12-13</td>
<td>AHPND</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SPAIN</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>THAILAND</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>197</td>
<td>0</td>
</tr>
<tr>
<td>UNITED KINGDOM</td>
<td>2023-12-14</td>
<td>AHPND</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
11. Did your laboratory provide expert advice in technical consultancies on the request of an WOAH Member?

Yes

<table>
<thead>
<tr>
<th>NAME OF THE WOAH MEMBER COUNTRY RECEIVING A TECHNICAL CONSULTANCY</th>
<th>PURPOSE</th>
<th>HOW THE ADVICE WAS PROVIDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLOMBIA</td>
<td>OIE Twinning project focused on fish and shrimp viral diseases.</td>
<td>Two visiting scientists from ICA, Bogota, Colombia attended a training in the Aquaculture Pathology Laboratory (APL), University of Arizona.</td>
</tr>
<tr>
<td>INDIA</td>
<td>Sponsored project with the Government of West Bengal, India to build capabilities on shrimp disease diagnosis.</td>
<td>A training on shrimp disease diagnostics was conducted in West Bengal, India.</td>
</tr>
<tr>
<td>VIETNAM</td>
<td>Sponsored project with the Ca Mau Province, Vietnam to build capabilities on shrimp disease diagnosis.</td>
<td>A scientist from the Analysis Testing Center of Camau (ATCC), Vietnam attended a training on molecular diagnostics and histopathology of crustaceans in APL, University of Arizona. In addition, scientists from the APL visited ATCC, Ca Mau, Vietnam to audit disease diagnostic activities of the lab and conducted a proficiency test in the laboratory.</td>
</tr>
</tbody>
</table>

**TOR5: COLLABORATIVE SCIENTIFIC AND TECHNICAL STUDIES**

12. Did your laboratory participate in international scientific studies in collaboration with WOAH Members other than the own?

No

13. In exercising your activities, have you identified any regulatory research needs* relevant for WOAH?

No

**TOR6: EPIZOOLOGICAL DATA**

14. Did your Laboratory collect epidemiological data relevant to international disease control?

No

15. Did your laboratory disseminate epidemiological data that had been processed and analysed?

No

16. What method of dissemination of information is most often used by your laboratory? (Indicate in the appropriate box the number by category and list the details in the box)

a) Articles published in peer-reviewed journals:

0

b) International conferences:

3


TOR7: SCIENTIFIC AND TECHNICAL TRAINING

17. Did your laboratory provide scientific and technical training to laboratory personnel from other WOAH Members?
   Yes
   a) Technical visit: 0
   b) Seminars: 0
   c) Hands-on training courses: 4
   d) Internships (>1 month): 0

<table>
<thead>
<tr>
<th>Type of technical training provided (a, b, c or d)</th>
<th>Country of origin of the expert(s) provided with training</th>
<th>No. participants from the corresponding country</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>UNITED STATES OF AMERICA</td>
<td>5</td>
</tr>
<tr>
<td>C</td>
<td>ECUADOR</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>COLOMBIA</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>VIETNAM</td>
<td>3</td>
</tr>
<tr>
<td>C</td>
<td>INDIA</td>
<td>7</td>
</tr>
<tr>
<td>C</td>
<td>MEXICO</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>VENEZUELA</td>
<td>1</td>
</tr>
</tbody>
</table>

TOR8: QUALITY ASSURANCE

18. Does your laboratory have a Quality Management System?
   Yes

<table>
<thead>
<tr>
<th>Quality management system adopted</th>
<th>Certificate scan (PDF, JPG, PNG format)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 17025</td>
<td>Pdf UAZAPL_17025 Scope 2024.pdf</td>
<td></td>
</tr>
<tr>
<td>ISO 17043</td>
<td>Pdf UAZAPL_17043 Scope 2024.pdf</td>
<td></td>
</tr>
<tr>
<td>USDA Approval</td>
<td>PDF UAZ_567_2_October 2023 approval letter.pdf</td>
<td></td>
</tr>
</tbody>
</table>

19. Is your quality management system accredited?
   Yes

<table>
<thead>
<tr>
<th>Test for which your laboratory is accredited</th>
<th>Accreditation body</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histology for all the OIE-listed pathogens</td>
<td>ANSI-ASQ National Accreditation Board</td>
</tr>
<tr>
<td>PCR for all the OIE-listed pathogens</td>
<td>ANSI-ASQ National Accreditation Board</td>
</tr>
</tbody>
</table>

20. Does your laboratory maintain a “biorisk management system” for the pathogen and the disease concerned?
   No

TOR9: SCIENTIFIC MEETINGS

21. Did your laboratory organise scientific meetings related to the pathogen in question on behalf of WOAH?

22. Did your laboratory participate in scientific meetings related to the pathogen in question on behalf of WOAH?
Yes

<table>
<thead>
<tr>
<th>Title of event</th>
<th>Role (speaker, presenting poster, short communications)</th>
<th>Location</th>
<th>Title of the work presented</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Launch of a Regional Aquatic Animal Health Laboratory Network (RAAHLN) for Africa</td>
<td>Invited speaker</td>
<td>South Africa</td>
<td>Aquaculture Pathology Laboratory, University of Arizona - The World Organization for Animal Health Reference Laboratory of Crustacean Diseases</td>
</tr>
</tbody>
</table>

**TOR10: NETWORK WITH WOAH REFERENCE LABORATORIES**

23. Did your laboratory exchange information with other WOAH Reference Laboratories designated for the same pathogen or disease?
Yes

24. Do you network (collaborate or share information) with other WOAH Reference Laboratories designated for the same pathogen?
Not applicable (Only WOAH Reference Laboratory designated for the disease)

25. Did you organise or participate in inter-laboratory proficiency tests with WOAH Reference Laboratories designated for the same pathogen?
No

26. Did your laboratory collaborate with other WOAH Reference Laboratories for the same disease on scientific research projects for the diagnosis or control of the pathogen of interest?
No

**TOR11: OTHER INTERLABORATORY PROFICIENCY TESTING**

27. Did your laboratory organise or participate in inter-laboratory proficiency tests with laboratories other than WOAH Reference Laboratories for the same pathogen?
Yes

<table>
<thead>
<tr>
<th>Purpose for inter-laboratory test comparisons</th>
<th>Role of your reference laboratory (organizer/participant)</th>
<th>No. participating laboratories</th>
<th>Name of the Test</th>
<th>WOAH Member Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proficiency Test in shrimp pathogens detection by PCR - Ring Test February 2023</td>
<td>Organiser</td>
<td>31</td>
<td>AHPND Ring Test</td>
<td>BRAZIL, ECUADOR, GUATEMALA, INDIA, ITALY, MALAYSIA, MEXICO, NICARAGUA, OMAN, PERU, SAUDI ARABIA, THAILAND, VIETNAM, AUSTRALIA, CANADA, COLOMBIA, ECUADOR, HONDURAS, INDIA, INDONESIA, KOREA (REP. OF), MADAGASCAR, MALAYSIA, MEXICO, OMAN, PANAMA, PERU, SINGAPORE, THAILAND, UNITED STATES OF AMERICA, VIETNAM,</td>
</tr>
<tr>
<td>Proficiency Test in shrimp pathogens detection by PCR - Ring Test August 2023</td>
<td>Organiser</td>
<td>31</td>
<td>AHPND Ring Test</td>
<td></td>
</tr>
</tbody>
</table>

**TOR12: EXPERT CONSULTANTS**

28. Did your laboratory place expert consultants at the disposal of WOAH?
Yes

<table>
<thead>
<tr>
<th>KIND OF CONSULTANCY</th>
<th>Location</th>
<th>SUBJECT (FACULTATIVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Responding to specific technical queries from WOAH</td>
<td>USA (communications via emails)</td>
<td>Responding to the queries of the Aquatic Animal Health Standards Commission</td>
</tr>
</tbody>
</table>

29. Additional comments regarding your report:
No