

HACCP Step 1 – Activity Description

Activity Description	
Facility: Four State Fish Hatcheries (Page Springs, Bubbling Ponds, Tonto Creek, & Canyon Creek)	Site:
Project Coordinator: Marc Dahlberg	Activity/Management Objective: Conduct sampling for hatchery discharge permits
Site Manager: Kevin Bright	
Address: 2221 West Greenway Road Phoenix, Az 85023	
Phone: 602-789-3260	

Project Description i.e. Who; What; Where; When; How; Why
<p>Who: Department Water Quality staff</p> <p>What: Collect a series of water samples from 4 Department Hatcheries for chemical parameters tests required for Hatchery Discharge Permits.</p> <p>Where: Sampling activities include collections from the inflow and outflow locations, as well as, collections from above and below the facilities. Samples are sequenced so that collectors move from top of system to bottom for each phase. There are 2 phases with the interior samples (inflow & outflow) collected first and external samples (above & below) collected last.</p> <p>When: Samples are collected monthly from interior sites for pH, temp, conductivity, DO, turbidity using field meters and waters samples are collected for nitrates, phosphates, TSS, TDS, BOD, and chromium for laboratory analysis. The external sites are collected on a quarterly basis and collections occur concurrently with monthly collection schedule.</p> <p>How: Spatially the hatchery facilities are located such that 2 sites are visited on the same run. Individual sample containers are prepared in the laboratory to isolate and secure samples from each site. Temporal collections start at the top end of the facilities with collections working in a downstream (flow) pattern.</p> <p>Why: Sampling activities are mandated by EPA and state ADEQ.</p>

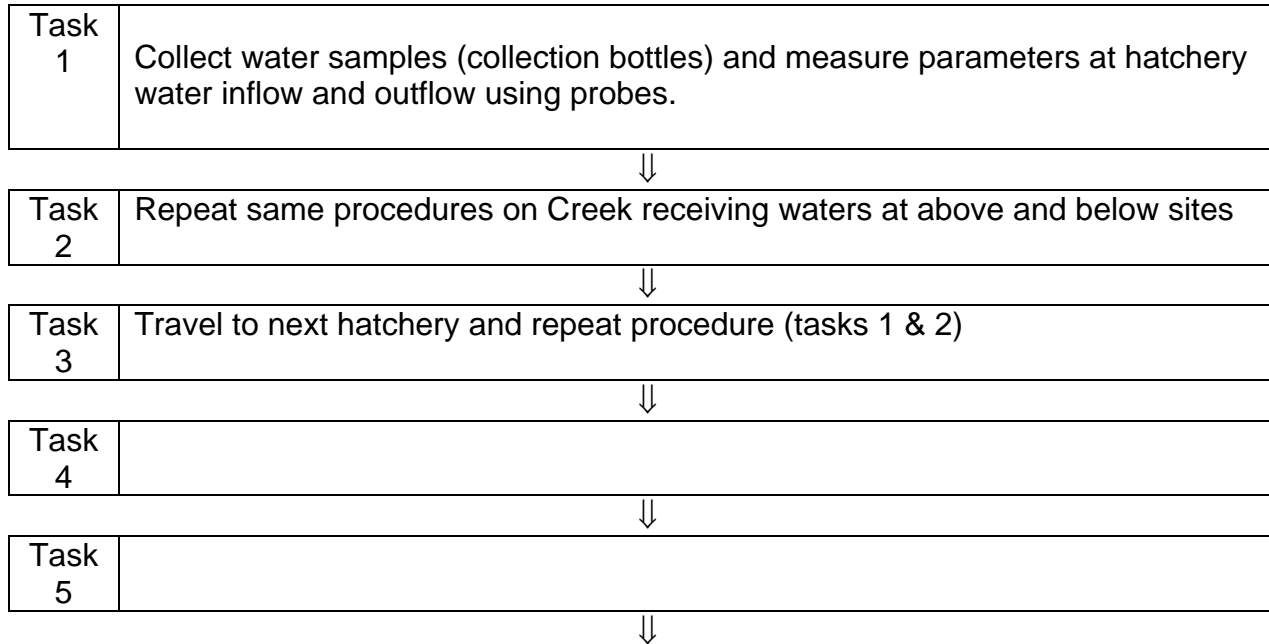
HACCP Step 2 – Identify Potential Hazards

(to be transferred to column 2 of HACCP Step 4 – Hazard Analysis Worksheet)

Hazards: Species or Contaminants Which May Potentially Be Moved/Introduced
Vertebrates: NA
Invertebrates: Misc. zooplankton
Plants: Misc. plant seeds and algae
Other Biologics (e.g. genetics, disease, pathogen, parasite, or non-pathogens): Page Springs: Gyrodactylus, Trichodina, Costia, Fungus, Columnaris, Aeromonas, Pseudomonas Bubbling Ponds: Gyrodactylus, <i>Ichthyophtherius multifiliis</i> , Trichodina, Asian tapeworm (<i>Bothriocephalus opsarichthydis</i>) Tonto Creek: Gyrodactylus, Trichodina, Coldwater disease Canyon Creek: Gyrodactylus, Trichodina, Cold Water Disease
Others (non-biological contaminants e.g. pesticide residue, oil products, etc. or harborage via packing or construction materials, etc.): NA

HACCP Step 3 – Flow Diagram

Flow Diagram Outlining Sequential Tasks to Complete Activity/Project
Described in HACCP Step 1 – Activity Description
(To be transferred to column 1 of the HACCP Step 4 – Hazard Analysis Worksheet)



HACCP Step 4 - Hazard Analysis Worksheet

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant ? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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Task 1 Collect water samples (collection bottles) and measure parameters at hatchery water inflow and outflow using probes.	Vertebrates NA				
	Invertebrates Misc. zooplankton	N	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper stations are used first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N
	Plants Misc. plant seeds and algae	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper stations are used first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N

	<p>Others Biologics</p> <p>Page Springs: Gyrodactylus, Trichodina, Costia, Fungus, Columnaris, Aeromonas, Pseudomonas</p> <p>Bubbling Ponds: Gyrodactylus, <i>Ichthyophtherius</i> <i>multifilis</i>, Trichodina, Asian tapeworm (<i>Bothriocephalus</i> <i>opsarichthydis</i>)</p> <p>Tonto Creek: Gyrodactylus, Trichodina, Coldwater disease</p> <p>Canyon Creek: Gyrodactylus, Trichodina, Cold Water Disease</p>	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper stations are used first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N
	Others n				

Task 2 Repeat same procedures on	Vertebrates NA				
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Creek receiving waters at above and below sites	Invertebrates Misc. zooplankton	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper station is collected first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N
	Plants Misc. plant seeds and algae	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper station is collected first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N

	<p>Others Biologics</p> <p>Page Springs: Gyrodactylus, Trichodina, Costia, Fungus, Columnaris, Aeromonas, Pseudomonas</p> <p>Bubbling Ponds: Gyrodactylus, <i>Ichthyophtherius multifilis</i>, Trichodina, Asian tapeworm (<i>Bothriocephalus opsarichthydis</i>)</p> <p>Tonto Creek: Gyrodactylus, Trichodina, Coldwater disease</p> <p>Canyon Creek: Gyrodactylus, Trichodina, Cold Water Disease</p>	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collection bottles are sterilized in the lab and instrument probes are rinsed with de-ionized water between collection points (after each use). Collection points are located such that the cleanest upper station is collected first. In theory this pattern eliminates possibility of relocating non-targets to head or top end of facility.	N
	Others n				

HACCP Step 4 - Hazard Analysis Worksheet (continued)

1 Tasks (from HACCP Step 3 - Flow Diagram)	2 Potential hazards identified in HACCP Step 2	3 Are any potential hazards significant ? (yes/no)	4 Justify evaluation for column 3	5 What control measures can be applied to prevent undesirable results?	6 Is this task a critical control point? (yes/no)
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Task 3 Travel to next hatchery and repeat procedure (tasks 1 & 2)	Vertebrates NA				
	Invertebrates Misc. zooplankton	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collected samples from different facilities are secured independent of each other in separate coolers. Rinse electrodes with cleaning/antimicrobial agent before sampling new hatchery. Rinse electrodes with deionized water between in/outflow and above/below sites	Y
	Plants Misc. plant seeds and algae	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collected samples from different facilities are secured independent of each other in separate coolers. Rinse electrodes with cleaning/antimicrobial agent before sampling new hatchery. Rinse electrodes with deionized water between in/outflow and above/below sites	Y

	<p>Others Biologics</p> <p>Page Springs: Gyrodactylus, Trichodina, Costia, Fungus, Columnaris, Aeromonas, Pseudomonas</p> <p>Bubbling Ponds: Gyrodactylus, <i>Ichthyophtherius</i> <i>multifilis</i>, Trichodina, Asian tapeworm (<i>Bothriocephalus</i> <i>opsarichthydis</i>)</p> <p>Tonto Creek: Gyrodactylus, Trichodina, Coldwater disease</p> <p>Canyon Creek: Gyrodactylus, Trichodina, Cold Water Disease</p>	Y	Collection bottles are sterilized and samples are collected top to bottom from water source that flows downstream through the facility.	Collected samples from different facilities are secured independent of each other in separate coolers. Rinse electrodes with cleaning/antimicrobial agent before sampling new hatchery. Rinse electrodes with deionized water between in/outflow and above/below sites	Y
	Others n				

