David P. Bleicher, MS., MSPH
*Certified Industrial Hygienist*
*8136 Snipe Court*
Juneau, Alaska 99801
(907) 321-4931
David@BleicherCIH.com

8 August 2010

CAPT Tim Radtke, CIH
Department of the Interior
Office of Occupational Health and Safety
755 Parfet Street
Suite 364
Lakewood, CO 80215

CAPT Radtke:

I have enclosed a report of exposure assessments for Greer's Ferry National Fish Hatchery as part of the DOI Exposure Assessment and Medical Surveillance Inclusion project. In the report you will find two attachments and guidance for reading and interpreting assessment results. One attachment presents the processes, tasks, and agents that were evaluated during the 15-16 April 2010 on-site visit with details of the associated exposure profiles that were developed. The other provides a health risk-based prioritized summary list of process-task-agent groups for control and further information gathering.

An Access database containing complete data and supporting documentation is available for download at www.BleicherCIH.com/DoIeA4TR.html (please note that the page address is case sensitive). This database file will be updated periodically as assessments and profiles are completed for additional facilities.

Please do not hesitate to contact me if you have any questions.

Sincerely,

David P. Bleicher, CIH

Enclosure: Greer's Ferry Occupational Exposure Assessment

Greer's Ferry National Fish Hatchery
Occupational Exposure Assessment and Medical Surveillance Inclusion
For
Department of Interior, Safety Council/Office of Health and Safety
On-site: 15-16 April 2010

Exposure assessments have been conducted as a part of the Department of Interior's Exposure Assessment and Medical Surveillance Inclusion Determination initiative. The objective of this effort is to document work processes at DOI facilities, describe the individual tasks associated with those processes, identify hazardous agents that are used or generated during the task, and characterize employee exposure to those agents. The ultimate goal is to identify similarly exposed groups (SEGs) within and between bureaus in order to facilitate exposure management requirements including exposure control, validation of medical surveillance, and prioritized use of limited occupational health resources.

*Methods*.

Exposure assessments were conducted following the strategy set forth by the American Industrial Hygiene Association's Exposure Assessment Strategies Committee for assessing and managing occupational exposures[1].

An on-site visit to the Greer's Ferry National Fish Hatchery was conducted on 15-16 April 2010 by David P. Bleicher, CIH to characterized selected processes and collect information needed to develop task-agent exposure profiles. A number of methods were available and used to gather this information. Characterization of processes, tasks, conditions and controls, and agent identification was obtained through observation of work sites and facilities, documentation of procedures, material safety data sheets, and importantly, worker interview. Data useful for estimating exposure was obtained through screening and short term measurement, historical sampling data, mathematical modeling, and the scientific literature.

Two reports are provided for this facility (Attachments A and B). One presents the processes, tasks, and agents that were evaluated during the site visit along with details of the associated exposure profile. The other is a health risk-based prioritized summary list of process-task-agent groups for control and further information gathering.

*Task-Agent Exposure Profile Detail Report.*

Task-agent exposure profiles are based on observation and employee description of processes. Due to the nature of many DOI missions, processes and tasks can be highly variable—task duration, frequency, and operating conditions can differ from one iteration to another. Therefore, process and task characterizations were frequently, and necessarily, reported as "typical" with a range of conditions described. Judgments about worker exposure are based on the tasks as presented in this report. When actual processes or the conditions under which they are carried out differ from those recorded, the exposure profile and classification should not be generalized without appropriate consideration of variables.

*Reading the Report.*

[1] Bullock, Wm.H. and J.S.Ignacio, Eds. 2006. A Strategy for Assessing and Managing Occupational Exposures, 3rd. AIHA Press, Fairfax.

The Task-Agent Exposure Profile Detail Report is arranged in hierarchical fashion by Division or Project, Process, Task, and Agent. Process entries include a brief description of the process and when appropriate, unique operating conditions. Task entries include a brief characterization of the task, a description of any controls in place, the duration and frequency of occurrence, and appropriate recommendations. It should be noted that many task characterizations and agent exposure profiles will immediately suggest rather obvious recommendations. Some of these have been included in the report. However, in many cases it would not be appropriate to make definitive control recommendations without more careful consideration of control strategies and factors that would affect their efficacy (e.g. design, economic, and cultural factors) which is beyond the scope of the exposure assessment project.

*Exposure Profile*. Information used to develop the exposure profile is found for each Agent under a Task. It is important to understand that the exposure profile accounts for engineered and administrative controls and reflects potential worker exposure in the absence of personal protective equipment such as respirators.

- Exposure Category: Exposures have been categorized as Acceptable, Unacceptable, or Uncertain.
- OEL: The Occupational Exposure Limit or OEL is the threshold value used as a standard for comparison with the exposure estimate. OELs may describe full shift or short-term acceptable or unacceptable exposure limits.
- Exposure Rating & Exposure Estimate: When possible the Exposure Rating is based on quantitative data which yields an Exposure Estimate. In practice, very little quantitative information is available to support a judgment. In the absence of strong quantitative data, it is often practical and reasonable to categorized an exposure as acceptable, unacceptable, or uncertain based on qualitative or semi-quantitative information. However, in these cases it is difficult to assign intermediate exposure ratings as a fraction of the OEL, therefore an exposure rating of 4 is assigned to clearly unacceptable exposures and a rating of 1 for those that are clearly acceptable.
- Health Effects Rating: The Health Effects Rating reflects both the severity and permanence of the health impacts of an unacceptable exposure.
- Uncertainty Rating: The Uncertainty Rating provides an indicator of the level of certainty associated with the exposure profile. For example; exposure estimates based on definitive monitoring studies would be highly certain while profiles based on screening measurement, mathematical modeling, data from similar activities, or qualitative judgment may add degrees of uncertainty. Other factors that may affect the industrial hygienist's assignment of an uncertainty rating are inadequate understanding of health impacts by scientific community and excessive generalization of the task activity or conditions during the characterization process.
- Basis & Discussion: The Basis for the estimated exposure, its assignment to an exposure category, and the factors affecting certainty is given. A brief Discussion of available information and factors leading to judgments about the exposure profile is also provided.
- Risk/Control Priority: A Risk/Control Priority is calculated as the product of the Health Effects Rating and the Exposure Rating. Ratings range from 0 for the lowest risk exposures to a high of 16.
- FIG Priority: When uncertainty exists in the exposure profile, further information gathering may be required to resolve it. FIG Priority is calculated as the product of the Risk/Control Priority and the Uncertainty Rating. Both the Risk/Control Priority and the FIG Priority values may be used to more efficiently direct resources to control exposures and resolve exposure questions. FIG priority ratings range from a low of 0 to a high of 32.

*Medical Surveillance*. The exposure profile provides validation of, or indicates justification for, medical surveillance programs. In the report, medical surveillance is Justifiable when the exposure category is unacceptable or uncertain. Note that justifiable means simply that an unacceptable (or uncertain) exposure is identified. It does not suggest that medical surveillance is required, needed or even useful. On the other hand, some exposures are designated as Triggered or Critical Exposures. For unacceptable or uncertain exposure to some agents, medical surveillance may be triggered or required by regulation. A critical exposure refers to unacceptable or uncertain exposure to an agent which may pose very severe and irreversible health effects if not controlled. Examples include potent human carcinogens.

David P. Bleicher, CIH
8 August 2010

Attachment A: Task-Agent Exposure Profile Detail Report
Attachment B: Health Risk and Further Information Gathering Priorities Report

# Task-Agent Exposure Profile Detail Report

## Greer's Ferry National Fish Hatchery

### Fish Culture

**Process:** *Feeding*

Pelletized feed is delivered to outdoor raceways via dedicated truck or Cushman vehicle.

Operating Conditions:

**Task:** Feeding, Raceways

Frequency: Daily

Duration: 1/2 - 1 hour

Feed truck is used to deliver feed to raceways. Feeding requires approximately 30 minutes and is conducted 3 times each day.

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 79 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 3

Basis: Screening Measurement

FIG Priority: 0

Discussion: Screening sound level measurement demonstrated 99.1 dBA for appoximately 15 seconds when operator first starts feed truck motor on bed of truck and adjusts hydrolic pressure. Worker then returns to the cab of the truck. Values at operators left and right ears ranged 68.4-69.9 dBA with cab windows closed and 74.5-79.1 with cab windows open.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

**Task:** Load and Operate Feed Cushman

Frequency: Daily

Duration: 1/2 - 1 hour

A Cushman brand cart is loaded by manually from 50 lb bags. Vehicle is used to transport feed to raceway. There it is wieghed in bucket, then broadcast into raceways by hand. Loading of 3-5 bags of feed occurs once per day. Feeding requires approximately 15 minutes as is repeated 4 times per day.

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 82 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 3

Basis: Screening Measurement

FIG Priority: 0

Discussion: Screening Measurements made during this task while operating the Cushman cart show sound levels of approximately 69 dBA while idling and between 80 and 82.3 at running speed. These short duration exposures will have little to no impact on total dose.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

**Task:** Load Feed Truck Hopper

Frequency: Daily

Duration: <1/2 hour

Feed truck is loaded from a bulk feed silo. Some dust is generated during the process. Dust is reportedly an indicator of damaged feed. One worker is required to climb to the top of the truck hopper bin to watch the gavity fed filling operation.

Controls:

Recommendation:

AGENT Particulates, NOS

OEL: 5 mg/m3

Exposure Estimate: 0 mg/m3

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 1

Basis: Qualitative Judgement

FIG Priority: 0

Discussion: Little dust generation was observed during task which is reportedly typical. OEL is not expected to be exceeded or approached, even when loading damaged, dusty feed based of duration of task.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: no

Reference:

**Process:** *Juvenile Rearing*

A variety of rearing and maintenance tasks occur within the Juvenile Rearing Building.

Operating Conditions:

Fans and pumps operate continuously.

**Task:** General Operations

Frequency: Daily

Duration: 1 - 4 hours

A variety of rearing and maintenance tasks occur within the Juvenile Rearing Building while pumps and fans are operating.

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 0 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 3

Basis: Screening Measurement

FIG Priority: 0

Discussion: Employees reported high noise and annoyance while working within the Juvenile Rearing Building. Sound level measurements taken at 12 representive locations throughout the Juvenile Rearing Building tank areas ranged from 75.0 to 79.1 dBA. These sound levels are not noise noise hazardous and do not contribute to dose eposure calculation.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

**Process:** *Treat Fish and Eggs for External Parasites*

Thirty seven percent 37% formalin is used for treatment of external parasites in raceways and egg rearing. Product is purchased in 1 gallon containers and 55 gallon drums.

Operating Conditions:

Runways are outdoors and uncovered. Juvenile rearing areas are indoors. Mixing and transfers may occur in garage space, outdoors, and within indoor rearing areas.

**Task:** Treat Eggs for Parasites

Frequency:

Duration: <1/2 hour

Formalin is measured in the hatching area/tank room. Formalin is measured using a graduated cylinder or beaker near the inlet side of the tank, then transferred to a chicken waterer filled with water. A hole has been drilled into the waterer allowing solution to drip into tank a metered rate.

Controls:

Recommendation:

AGENT Formadahyde

OEL: 0.3 ppm

Exposure Estimate: 0.3 ppm

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 4 (>10% OEL; 95th %tile > OEL)

Exposure Category: Unacceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 12

Basis: Available Literature

FIG Priority: 12

Discussion: Formadehyde exposure exceeded REL and TLV in all cases and exceeded PEL-STEL in once case during assessment of hatchery treatement of eggs using similar manual treatment methods.

Medical Surveillance

Justifiable: yes

Triggered or Critical Exposure: yes

Reference: 29 CFR 1910.1048

**Task:** Treat Raceways for Parasites

Frequency: Bi-Annually

Duration: 1 - 4 hours

Thirty seven percent formalin is dispenced from a 55 gallon drum into a 5 gallon open bucket. Transfer is made in the garage bay, storage area where any drips are captured with rags. Formalin in the bucket is then tansferred to raceway in mule (ATV) or Cushman cart. At the raceway, 3 gallons of 37% formalin are poured from the bucket to a large chicken waterer. Mixing requires approximately 30 minutes. One to 1 1/2 hours may be required for each treatment, including observation. 1 or 2 of the raceways may be treated at a time and may require 2 or 3 repeat treatments over the course of several days. Up to 2 drums of formalin may be used in a year.

. 5-6 raceways, normally one or two; with two to three repeated treatment over seveal days.

Controls:

outdoors.

Recommendation:

AGENT Formadahyde

| | | | |
|---|---|---|---|
| Exposure Estimate: | 2 ppm | OEL: | 0.3 ppm |
| Exposure Rating: | 4 (>10% OEL; 95th %tile > OEL) | Health Effects Rating: | 3 Irreversible health effects of concern |
| Uncertainty: | 1 Uncertain | Exposure Category: | Unacceptable |
| Basis: | Available Literature | Risk/Control Priority: | 12 |
| | | FIG Priority: | 12 |

Discussion: OELs are TLV-C and PEL-STEL Air sampling for formaldehyde conducted by NIOSH at FWS fisheries in NE US demonstrated exceedance of REL, TLV, and PEL-STEL during similar tasks and conditions. Highest concentrations were found during transfers of formalin from 55 gallon drums and varied with method and worker technique. Large quantities of formalin are used for raceway treatments. Transfers occur in an garage/storage space.

Medical Surveillance

Justifiable: yes

Triggered or Critical Exposure: yes

Reference: 29 CFR 1910.1048

## Maintenance

***Process:*** *Clean and Disinfect Vehicles*

Chassis of vehicles and tanks used to haul fish are disinfected. A quaternary ammonia disinfectant solution is sprayed. Process occurs seasonally and may require 8-10 vehicle washes per day.

Operating Conditions:

**Task:** Spray Disinfectant.

Frequency: Daily

Duration: 1 - 4 hours

Automatically metered and mixed disinfectant solution is spray on the lover chassis of fish hauling vehicles. A contact time of one minutes is allowed before rinsing with water from a pressure sprayer. Task requires 15-20 minutes per vehicle including tanks.

Controls:

Recommendation:

AGENT Quaternary ammonia products

OEL:

Exposure Estimate: 0

Health Effects Rating: 2 Severe, reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 2

Basis: Qualitative Judgement

FIG Priority: 0

Discussion: Concentrated quaternary ammonia disifectant products can be highly corrosive. Direct contact with skin and eyes is the most important route of entry. Highest risk is during mixing. Automatic metering and mixing apparatus limits the potential for direct contact of skin and eyes with concentrate.

Medical Surveillance

Justifiable no

Triggered or Critical Exposure no

Reference:

**Process:** *Construct Racking Screens*

Racking screens used to move and concentrate fish within raceways are constructed of wood and reported as a typical woodworking shop task.

Operating Conditions:

Work conducted in garage bay.

**Task:** Operate Mitre Saw

Frequency: Quarterly

Operate Dewalt double bevel mitre saw, to cut fir or spruce and pine. One to several cuts of less than 5 seconds may be made over a period of 10-15 minutes.

Duration: <1/2 hour

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 80 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 2 (10-50% OEL; 95th %tile 0.1-0.5 OEL)

Exposure Category: Acceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 6

Basis: Screening Measurement

FIG Priority: 6

Discussion: Screening measurements made during operation demonstrated levels of 104.3 and 103.7 dBA. Cross cuts require only seconds and result in very short duration exposure. Dose estimation based of reported frequency and duration for mitre and table saw operation during racking screen construction is 35% (TWA=80 dBA). Additional condinuous and impact unreported noise exposure should be anticipated associated with this process.

Medical Surveillance

Justifiable no

Triggered or Critical Exposure yes

Reference: 29 CFR 1010.95

**Task:** Operate Table Saw.

Frequency: Quarterly

Delta table saw is used to rep 2x4 fir into 2x2s.

Duration: <1/2 hour

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 80 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 2 (10-50% OEL; 95th %tile 0.1-0.5 OEL)

Exposure Category: Acceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 6

Basis: Screening Measurement

FIG Priority: 6

Discussion: Screening measurements made during operation demonstrated levels of 104.3 and 103.7 dBA. Cross cuts require only seconds and result in very short duration exposure. Dose estimation based of reported frequency and duration for mitre and table saw operation during racking screen construction is 35% (TWA=80 dBA). Additional condinuous and impact unreported noise exposure should be anticipated associated with this process.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

**Process:** *Grounds Maintenance*

Several pieces of power equipment are used to maintain drives, paved areas, and lawns of housing, park and hatchery grounds.

Operating Conditions:

**Task:** Operate Edger

Frequency: Bi-Annually

Duration: 1 - 4 hours

Operate Stihl model FC90 string trimmer fitted with edger attachment to edge lawns. This task is conducted twice each year and requires approximately 1.5 hours to complete.

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 85.8 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 4 (>10% OEL; 95th %tile > OEL)

Exposure Category: Unacceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 12

Basis: Screening Measurement

FIG Priority: 12

Discussion: Screening measurements demonstrated sound levels of 69.8 and 77.1 dBA at idle rpm, 84.9 and 92.4 dBA at cutting rpm; and 86.8 and 93.0 dBA under load at cutting rpm. The operator's estimated worst case exposure dose after 1.5 hours is 119% (TWA=85.8 dBA).

Medical Surveillance

Justifiable: yes

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

**Task:** Operate John Deer Tractor-mower

Frequency: Weekly

Duration: 4 - 8 hours

Operate John Deer model LT166 lawn tractor-mower to mow grass and, in the fall, mulch leaves. Mowing is conducted seasonally. Tactor is also used several times in winter when leaves accumulate. (Winter use requires less than one hour).

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 84 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 3 (50-100% OEL; 95th %tile 0.5-1.0 OEL

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 9

Basis: Screening Measurement

FIG Priority: 0

Discussion: Screening sound level measurement demonstrated levels of 77.8 and 77.7 dBA with blades engaged and operating at idle speed over pavement and 83.5 and 83.8 dBA at mowing rpm with blade engaged and operating over lawn. Operator's dose while mowing or mulching for 8 hours is estimated at less than 80% (TWA=84 dBA). Threshold is not expected to be exceeded by exposure during this operation alone.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

AGENT Particulates, NOS

OEL: 5 mg/m3

Exposure Estimate: mg/m3

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 2 (10-50% OEL; 95th %tile 0.1-0.5 OEL)

Exposure Category: Acceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 2

Basis: Qualitative Judgement

FIG Priority: 2

Discussion: Dust, including pollen, is generated during this task to the extent that some worker nuisance or discomfort was reported. Threshold for this agent is not expected to be exceeded during this task, however, aerosolization of allergenic particulates such as pollen and other organic material should be expected which may result in such conditions as allergic rhinitis.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: no

Reference:

**Task:** Operate Leaf Blower

Frequency: Bi-Monthly

Duration: 4 - 8 hours

Operate gasoline engine powered leaf blower to remove debris from paved surfaces. Leaf blower may be used in the traditional fashion or while seated in and operating an ATV.

Controls:

Recommendation:

Discontinue use of surgical masks for nuisance dust. Consider use of filtering facepiece respirator according to requirements of OSHA respiratory protection requirements for voluntary use.

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 89.3 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 4 (>10% OEL; 95th %tile > OEL)

Exposure Category: Unacceptable

Uncertainty: 0 Certain

Risk/Control Priority: 12

Basis: Screening Measurement

FIG Priority: 0

Discussion: Based on screening sound level measurements and reported duration of task, dose is expected to be 269% of the allowable (8hr TWA=89.3 dBA). Screening sound level measurments demonstrated from 69.3 dBA at idle speed to 89.5 dBA at operating rpm when operated traditionally, and from 93.8 to 96.7 dBA at operating rpm while seated in the moving ATV.

Medical Surveillance

Justifiable: yes

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

AGENT Particulates, NOS

OEL: 5 mg/m3

Exposure Estimate: mg/m3

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 1

Basis: Qualitative Judgement

FIG Priority: 1

Discussion: Task is capable of generating large amounts of dust. Although wind may move particulate toward the operator, the majority of dust is directed away from the operator. Sugical masks are reportedly worn occassionally while conducting this task, indicating some worker discomfort.

Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: no

Reference:

**Task:** Operate Mower

Frequency: Weekly

Operate Toro model 345 Groundmaster mower to cut lawns.

Duration: 4 - 8 hours

Controls:

Recommendation:

AGENT Noise

OEL: 85 dBA

Exposure Estimate: 87 dBA

Health Effects Rating: 3 Irreversible health effects of concern

Exposure Rating: 4 (>10% OEL; 95th %tile > OEL)

Exposure Category: Unacceptable

Uncertainty: 1 Uncertain

Risk/Control Priority: 12

Basis: Screening Measurement

FIG Priority: 12

Discussion: Screening sound level measurement demonstrated levels of 81.8 and 83.7 dBA at the operator's ears while idling in the parking lot and 86.3 and 86.9 dBA at cutting rpm over grass. Operator's estimated worst case dose after 8 hours of operation is 155% (TWA=87 dBA).

Medical Surveillance

Justifiable: yes

Triggered or Critical Exposure: yes

Reference: 29 CFR 1010.95

AGENT Particulates, NOS

OEL: 5 mg/m3

Exposure Estimate: mg/m3

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 1

Basis: Qualitative Judgement

FIG Priority: 0

Discussion: Dust, including pollen, is generated during this task to the extent that some worker nuisance or discomfort was reported. Threshold for this agent is not expected to be exceeded during this task, however, aerosolization of allergenic particulates such as pollen and other organic material should be expected which may result in such conditions as allergic rhinitis.

Medical Surveillance

Justifiable no

Triggered or Critical Exposure no

Reference:

**Process:** *Herbicide Application*

Glyphosate (Razor Pro) herbicide is used to treat cracks in pavement using a 2 gal hand pump sprayer.

Pour into measuring contain, then pour into 2 gal sprayer., then tripple rince measure and pour rinse water into sprayer. Then finish filling sprayer at vehicle washdown area

Operating Conditions:

mixing/loading indoors.,

**Task:** Apply Herbicide

Frequency: Monthly

Herbicide is applied at the base of fences using a 2 gallon hand pump sprayer.

Duration: 1 - 4 hours

Controls:

Recommendation:

AGENT Glyphosate

OEL:

Exposure Estimate:

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 1

Basis: Qualitative Judgement

FIG Priority: 0

Discussion: Most likely route of exposure is skin and eye contact, resulting in irritant effects. Short term inhalation exposure is not expected to produce significant health effects of concern. PPE use was not recorded. Barrier protections including eye and skin protection are assumed for this task.

Medical Surveillance

Justifiable no

Triggered or Critical Exposure no

Reference:

**Task:** Mixing and Loading

Frequency: Monthly

Duration: <1/2 hour

Herbicide is mixed and loaded into a 2 gallon pressure sprayer tank. Concentrate is poured from 2 gallon containers. Dilutions were not reported. Typically, mixing and loading must be repeated to complete application task.

Controls:

Mixing and loading occurs indoors.

Recommendation:

AGENT Glyphosate

OEL:

Exposure Estimate:

Health Effects Rating: 1 Reversible health effects of concern

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 0 Certain

Risk/Control Priority: 1

Basis: Qualitative Judgement

FIG Priority: 0

Discussion: Most likely route of exposure is skin and eye contact, resulting in irritant effects. Short term inhalation exposure is not expected to produce significant health effects of concern. PPE use was not recorded. Barrier protections including eye and skin protection are assumed for this task.

Medical Surveillance

Justifiable no

Triggered or Critical Exposure no

Reference:

***Process:*** *Rodent Control*

Rodent control at this facility is primarily accomplished by a contract pest control service. Employees supplement contract work by sevicing glue traps.

Operating Conditions:

Process occurs mostly in garage/shop areas.

**Task:** Collect and Dispose of Captured Rodents.

Frequency: Single Event

Duration: <1/2 hour

Glue traps with captured rodents are picked up and disposed of in garbage. Task is conducted infrequently. No barrier PPE was reported, but employee offered that mice were not touched directly.

Controls:

Recommendation:

Low exposure risk may be further reduced by using barrier protections, sanitizing potentially contaminated areas and minimizing dust generation.

AGENT Hantavirus

OEL:

Exposure Estimate:

Health Effects Rating:

Exposure Rating: 1 (<10% OEL; 95th %tile <0.1 OEL)

Exposure Category: Acceptable

Uncertainty: 1 Uncertain

Risk/Control Priority:

Basis: Qualitative Judgement

FIG Priority:

Discussion: Any activity that puts you in contact with rodent droppings, urine, saliva, or nesting materials can place you at risk for infection. Hantavirus is spread when virus-containing particles from rodent urine, droppings, or saliva are stirred into the air. It is important to avoid actions that raise dust, such as sweeping or vacuuming. Infection occurs when you breathe in virus particles. However, CDC statitics show that of the over 500 cases of HPS in the US in 2009, no were associated with exposure in Arkansas. Low exposure risk may be further reduced by using barrier protections, sanitizing potentially contaminated areas and minimizing dust generation.

## Medical Surveillance

Justifiable: no

Triggered or Critical Exposure: no

Reference:

# Health Risk and Further Information Gathering Priorities

## Greer's Ferry National Fish Hatchery

| Division, Shop, Project | Process | Task | Agent | Exposure Catagory | Justified Medical Surveillance | Triggered Surveillance | Health Risk Priority | FIG Priority |
|---|---|---|---|---|---|---|---|---|
| Fish Culture | Treat Fish and Eggs for External Parasites | Treat Raceways for Parasites | Formadahyde | Unacceptable | yes | yes | 12 | 12 |
| Maintenance | Grounds Maintenance | Operate Mower | Noise | Unacceptable | yes | yes | 12 | 12 |
| Maintenance | Grounds Maintenance | Operate Edger | Noise | Unacceptable | yes | yes | 12 | 12 |
| Fish Culture | Treat Fish and Eggs for External Parasites | Treat Eggs for Parasites | Formadahyde | Unacceptable | yes | yes | 12 | 12 |
| Maintenance | Grounds Maintenance | Operate Leaf Blower | Noise | Unacceptable | yes | yes | 12 | 0 |
| Maintenance | Grounds Maintenance | Operate John Deer Tractor-mower | Noise | Acceptable | no | yes | 9 | 0 |
| Maintenance | Construct Racking Screens | Operate Mitre Saw | Noise | Acceptable | no | yes | 6 | 6 |
| Maintenance | Construct Racking Screens | Operate Table Saw. | Noise | Acceptable | no | yes | 6 | 6 |
| Fish Culture | Juvenile Rearing | General Operations | Noise | Acceptable | no | yes | 3 | 0 |
| Fish Culture | Feeding | Load and Operate Feed Cushman | Noise | Acceptable | no | yes | 3 | 0 |
| Fish Culture | Feeding | Feeding, Raceways | Noise | Acceptable | no | yes | 3 | 0 |
| Maintenance | Grounds Maintenance | Operate John Deer Tractor-mower | Particulates, NOS | Acceptable | no | no | 2 | 2 |
| Maintenance | Clean and Disinfect Vehicles | Spray Disinfectant. | Quaternary ammonia products | Acceptable | no | no | 2 | 0 |
| Maintenance | Grounds Maintenance | Operate Leaf Blower | Particulates, NOS | Acceptable | no | no | 1 | 1 |
| Maintenance | Herbicide Application | Mixing and Loading | Glyphosate | Acceptable | no | no | 1 | 0 |
| Maintenance | Grounds Maintenance | Operate Mower | Particulates, NOS | Acceptable | no | no | 1 | 0 |
| Fish Culture | Feeding | Load Feed Truck Hopper | Particulates, NOS | Acceptable | no | no | 1 | 0 |
| Maintenance | Herbicide Application | Apply Herbicide | Glyphosate | Acceptable | no | no | 1 | 0 |
| Maintenance | Rodent Control | Collect and Dispose of Captured Rodents. | Hantavirus | Acceptable | no | no | | |