FISHHAWK LAKE RECREATIONAL CLUB

IS AUTHORIZED IN ACCORDANCE WITH ORS 196.800 TO 196.990 TO PERFORM THE OPERATIONS DESCRIBED IN THE ATTACHED COPY OF THE APPLICATION, SUBJECT TO THE SPECIAL CONDITIONS LISTED ON ATTACHMENT A AND TO THE FOLLOWING GENERAL CONDITIONS:

1. This permit does not authorize trespass on the lands of others. The permit holder shall obtain all necessary access permits or rights-of-way before entering lands owned by another. For new linear facility projects, the removal-fill activity cannot occur until the permit holder obtains either the landowner’s consent, a right, title or interest with respect to the property that is sufficient to undertake the removal or fill activity, or a court order or judgment authorizing the use of the property.

2. This permit does not authorize any work that is not in compliance with local zoning or other local, state, or federal regulation pertaining to the operations authorized by this permit. The permit holder is responsible for obtaining the necessary approvals and permits before proceeding under this permit.

3. All work done under this permit must comply with Oregon Administrative Rules, Chapter 340; Standards of Quality for Public Waters of Oregon. Specific water quality provisions for this project are set forth on Attachment A.

4. Violations of the terms and conditions of this permit are subject to administrative and/or legal action, which may result in revocation of the permit or damages. The permit holder is responsible for the activities of all contractors or other operators involved in work done at the site or under this permit.

5. Employees of the Department of State Lands and all duly authorized representatives of the Director shall be permitted access to the project area at all reasonable times for the purpose of inspecting work performed under this permit.

6. Any permit holder who objects to the conditions of this permit may request a hearing from the Director, in writing, within twenty-one (21) calendar days of the date this permit was issued.

7. In issuing this permit, the Department of State Lands makes no representation regarding the quality or adequacy of the permitted project design, materials, construction, or maintenance, except to approve the project’s design and materials, as set forth in the permit application, as satisfying the resource protection, scenic, safety, recreation, and public access requirements of ORS Chapters 196, 390, and related administrative rules.

8. Permitee shall defend and hold harmless the State of Oregon, and its officers, agents, and employees from any claim, suit, or action for property damage or personal injury or death arising out of the design, material, construction, or maintenance of the permitted improvements.

9. Authorization from the U.S. Army Corps of Engineers may also be required.

NOTICE: If removal is from state-owned submerged and submersible land, the applicant must comply with leasing and royalty provisions of ORS 274.530. If the project involves creation of new lands by filling on state-owned submerged or submersible lands, you must comply with ORS 274.905 to 274.940. This permit does not relieve the permittee of an obligation to secure appropriate leases from the Department of State Lands, to conduct activities on state-owned submerged or submersible lands. Failure to comply with these requirements may result in civil or criminal liability. For more information about these requirements, please contact the Department of State Lands, 503-986-5200.

Lori Warner-Dickason, Northern Region Manager
Wetlands & Waterways Conservation Div.
Oregon Department of State Lands

[Signature]

May 31, 2012
Date Issued
ATTACHMENT A

Permittee: Fishhawk Lake Recreational Club

Project: Maintenance Dredging

Special Conditions for Removal/Fill Permit No. 49705-RP

READ AND BECOME FAMILIAR WITH CONDITIONS OF YOUR PERMIT.

The project site may be inspected by the Department of State Lands (DSL) as part of our monitoring program. DSL has the right to stop or modify the project at any time if you are not in compliance with these conditions. A copy of this permit shall be available at the work site whenever authorized operations are being conducted.

1. **Responsible Party:** By proceeding under this permit, Fishhawk Lake Recreational Club agrees to comply with and fulfill all terms and conditions of this permit, unless the permit is officially transferred to another party as approved by DSL.

2. **Authorization to Conduct Removal and/or Fill:** This permit authorizes the removal of up to 10,000 cubic yards of material annually in Fishhawk Lake. This permit does not authorize dredging in the tributaries to Fishhawk Lake. The project is located in T6N, R5W, Section 6 & 7, Columbia and Clatsop Counties. The project is described in the attached permit application, map and drawings, received March 2, 2012. In the event information in the application conflicts with these permit conditions, the permit conditions prevail.

3. **Work Period in Jurisdictional Areas:** Fill or removal activities below the ordinary high water line of Fishhawk Lake shall be conducted in 2 distinct time periods, subject to modification by ODFW and ODSL based on fisheries needs. The preferred period for dredging is between July 1 and August 31. Additionally, conditional dredging may occur between September 1 and February 15; during this period dredging shall not occur 2 days in a row; dredging is only allowed every other day. Modifications to these time periods will be reviewed periodically by ODFW (Oregon Department of Fish and Wildlife) and DSL. Modifications to these time periods may only be approved by DSL in concert with ODFW.

4. **Changes to the Project or Inconsistent Requirements from Other Permits:** It is the permittee's responsibility to ensure that all state, federal and local permits are consistent and compatible with the final approved project plans and the project as executed. Any changes made in project design, implementation and/or operating conditions to comply with conditions imposed by other permits must be approved by DSL prior to implementation.

5. **DSL May Halt or Modify:** DSL retains the authority to temporarily halt or modify the project in case of unforeseen damage to natural resources.

6. **DSL May Modify Conditions Upon Permit Renewal:** DSL retains the authority to modify conditions upon renewal, as appropriate, pursuant to the applicable rules in effect at the time of the request for renewal or to protect waters of this state.
Pre-Construction

7. **Local Government Approval Required Before Beginning Work:** Issuance of this permit is contingent upon approval of the activity by Clatsop and Columbia Counties.

**General Construction Conditions**

8. **Erosion Control Methods:** The following erosion control measures (and others as appropriate) shall be installed prior to construction and maintained during and after construction as appropriate, to prevent erosion and minimize movement of soil into waters of this state.

   a. All exposed soils shall be stabilized during and after construction in order to prevent erosion and sedimentation.

   b. Filter bags, sediment fences, sediment traps or catch basins, leave strips or berms, or other measures shall be used to prevent movement of soil into waterways and wetlands.

   c. To prevent erosion, use of compost berms, impervious materials or other equally effective methods, shall be used to protect soil stockpiled during rain events or when the stockpile site is not moved or reshaped for more than 48 hours.

   d. Unless part of the authorized permanent fill, all construction access points through, and staging areas in, riparian and wetland areas shall use removable pads or mats to prevent soil compaction. However, in some wetland areas under dry summer conditions, this requirement may be waived upon approval by DSL. At project completion, disturbed areas with soil exposed by construction activities shall be stabilized by mulching and native vegetative plantings/seedling. Sterile grass may be used instead of native vegetation for temporary sediment control. If soils are to remain exposed more than seven days after completion of the permitted work, they shall be covered with erosion control pads, mats or similar erosion control devices until vegetative stabilization is installed.

   e. Where vegetation is used for erosion control on slopes steeper than 2:1, a tackified seed mulch shall be used so the seed does not wash away before germination and rooting.

   f. Dredged or other excavated material shall be placed on upland areas having stable slopes and shall be prevented from eroding back into waterways and wetlands.

   g. Erosion control measures shall be inspected and maintained as necessary to ensure their continued effectiveness until soils become stabilized.

   h. All erosion control structures shall be removed when the project is complete and soils are stabilized and vegetated.

9. **Hazardous, Toxic, and Waste Material Handling:** Petroleum products, chemicals, fresh cement, sandblasted material and chipped paint, wood treated with leachable preservatives or other deleterious waste materials shall not be allowed to enter waters of this state. Machinery refueling is to occur at least 150 feet from waters of this state and confined in a designated area to prevent spillage into waters of this state. Barges shall have containment system to effectively prevent petroleum products or other deleterious material from entering waters of this state. Project-related spills into waters of this state or onto land with a potential to enter waters
10. Federally Listed Endangered or Threatened Species: When listed species are present, the authorization holder must comply with the Federal Endangered Species Act. If previously unknown listed species are encountered during construction, all construction activity shall immediately cease and the permit holder must contact DSL.

11. Archaeological Resources: If any archaeological resources and/or artifacts are encountered during construction, all construction activity shall immediately cease. The State Historic Preservation Office shall be contacted (phone: 503-986-0674).

12. Hazards to Recreation, Navigation or Fishing: The activity shall be timed so as not to interfere with or create a hazard to recreational or commercial navigation or fishing.

13. Stream Diversion Prohibited: The stream shall not be diverted from the natural bed.

14. Riparian Vegetation: Woody riparian vegetation shall be avoided during operations. Riparian vegetation should be encouraged to reestablish in areas that it previously existed.

**Maintenance Dredging**

15. Dredging near the Confluence of Tributaries with Fishhawk Lake. Dredging shall not occur beyond the ordinary high water line of Fishhawk Lake. Dredging is prohibited in the immediate confluence of the tributaries with Fishhawk Lake. **There shall be a minimum of a 25 foot no-dredging zone from the immediate confluence of Fishhawk Creek and Fishhawk Lake.** Dredging within 50 feet of the no-dredging zone shall be monitored for fish use and spawning habitat before operations begin; efforts to encourage the fish to temporarily leave the immediate dredging area in order to avoid being entrained or impinged area shall be utilized to the greatest extent practicable.

16. Spawning Habitat Restrictions: There shall not be any dredging in spawning habitat.

17. Fish Impingement or Entrainment: The authorization holder shall immediately report any fish observed that are impinged or entrained by operations to the Oregon Department of Fish and Wildlife at (503) 657-2000. The permittee shall provide access for ODFW to enter the project site for making fish entrainment observations.

18. Extent of Dredging: Maintenance dredging activity shall be limited to the areas (Zone 1, 2, 3) defined in the application, Attachment B. Only Zone 1 can be dredged annually. Zone 2 and Zone 3 can only be dredged based on visual triggers: water depth <6" for Zone 2; water depth <18" for Zone 3. Zones 2 and 3 shall not be dredged in the same year.

19. Dredging Zones: The (3) dredging zones shall be appropriately marked in the water (by buoys, etc.) during the dredging season,
20. **County Bridge:** It is understood that the county bridge may be replaced in 2013 or 2014. After the bridge is replaced there should be a review of the aquatic habitat changes in the immediate area to ensure that dredging does not create adverse impacts to natural resources or aquatic species populations.

21. **Removal Depth:** Material shall not be removed to a depth greater than the original bathymetry of the lake.

22. **Dredged Material Placement:** Waste materials and spoils shall not be placed in any wetland, Federal Emergency Management Administration designated floodway, or in an area historically subject to landslides.

23. **Designated Dredged Material Disposal (DMD) Site:** Dredged materials shall be disposed of in appropriately permitted, upland disposal site(s), shown on Attachment B of the application. The selected disposal facility, and any changes thereafter, shall be submitted to DSL for approval prior to use.

24. **Management of the Dredged Material Disposal (DMD) Site:** Wastewaters from the DMD site shall have adequate settling time before being discharged into a water of this state. Water discharged from the DMD site shall meet water quality requirements of the Department of Environmental Quality.

25. **Pipeline Hydraulic Dredge Operation:** For material removed by hydraulic pipeline dredge, the working end of the dredge ladder shall be kept buried below the bottom of the river. The intake may be raised no more than 3 feet above the bed for minimum time necessary for purging or flushing.

**Issued:** May 31, 2012
**Joint Permit Application Form**

**US Army Corps of Engineers (Portland District)**

**AGENCIES WILL ASSIGN NUMBERS**

**Oregon Department of State Lands No 49705**

**SEND ONE SIGNED COPY OF YOUR APPLICATION TO EACH AGENCY**

<table>
<thead>
<tr>
<th>US Army Corps of Engineers</th>
<th>DSL - West of the Cascades</th>
<th>DSL - East of the Cascades</th>
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</thead>
<tbody>
<tr>
<td>District Engineer</td>
<td>State of Oregon</td>
<td>State of Oregon</td>
</tr>
<tr>
<td>ATTN: CENWP-GD-GPPO</td>
<td>Department of State Lands</td>
<td>Department of State Lands</td>
</tr>
<tr>
<td>Box 2546</td>
<td>775 Summer Street, Suite 100</td>
<td>1645 NE Forbes Road, Suite 112</td>
</tr>
<tr>
<td>Portland, OR 97208-2546</td>
<td>Salem, OR 97301-1279</td>
<td>Bend, Oregon 97701</td>
</tr>
<tr>
<td>503-808-4373</td>
<td>503-986-5200</td>
<td>541-388-6112</td>
</tr>
</tbody>
</table>

**1) APPLICANT INFORMATION**

<table>
<thead>
<tr>
<th>Applicant</th>
<th>Jim Dahlquist</th>
<th>Business Phone # (503) 755-2132</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name and Address</td>
<td>Fishhawk Lake Recreational</td>
<td>Home Phone # (503) 755-9800</td>
</tr>
<tr>
<td></td>
<td>Club</td>
<td>(Home) 360-609-0994 (Cell)</td>
</tr>
<tr>
<td></td>
<td>9997 Beach Drive</td>
<td>Fax # (503) 755-2545</td>
</tr>
<tr>
<td></td>
<td>Birkenfeld, Oregon, 97016</td>
<td>Email <a href="mailto:office@fishhawklake.org">office@fishhawklake.org</a></td>
</tr>
</tbody>
</table>

**Authorized Agent**

<table>
<thead>
<tr>
<th>Name and Address</th>
<th>E. George Robison</th>
<th>Business Phone # (208) 342-4214</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check one</td>
<td>McMillen-LLC</td>
<td>Home Phone # 208-954-1715 (Cell)</td>
</tr>
<tr>
<td>Consultant</td>
<td>1401 Shoreline Dr., Suite 100, Boise, ID 83702</td>
<td>Fax # (208) 342-4216</td>
</tr>
<tr>
<td>Contractor</td>
<td>Boise, ID 83702</td>
<td>Email <a href="mailto:george.robison@mcmillen-llc.com">george.robison@mcmillen-llc.com</a></td>
</tr>
</tbody>
</table>

**Property Owner**

| Name and Address   | Fishhawk Lake Recreational   | Business Phone # Same as Above |
|--------------------| Club                         | Home Phone # Same as Above     |
| If different from above | Same as Above                | Fax # Same as Above            |
|                    | Same as Above                | Email Same as Above            |

**2) PROJECT LOCATION**

<table>
<thead>
<tr>
<th>Street, Road or Other Descriptive Location</th>
<th>Legal Description (attach tax for map*)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Township</td>
</tr>
<tr>
<td>In or near (City or Town)</td>
<td>County</td>
</tr>
<tr>
<td>Birkenfeld</td>
<td>Columbria/Clastop</td>
</tr>
<tr>
<td>Wetland/Waterway (pick one)</td>
<td>Latitude (in DD.DDDDD format)</td>
</tr>
<tr>
<td>Waterway</td>
<td>Longitude (in DD.DDDDD format)</td>
</tr>
<tr>
<td>Directions to the site</td>
<td>From Birkenfeld, OR, take HWY 202 West approximately 0.7 miles and turn North on Fishhawk Road. Continue North on Fishhawk Road approximately 4 miles to Fishhawk Lake.</td>
</tr>
</tbody>
</table>

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1 If applicant is not the property owner, permission to conduct the work must be attached.
2 Attach a copy of all tax maps with the project area highlighted.

* Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.
**Purpose and Need:**

Provide a description of the public, social, economic, or environmental benefits of the project along with any supporting formal actions of a public body (e.g. city or county government), as appropriate.*

The purpose of the Fishhawk Lake dredging project is to increase flood protection, navigability and aquatic habitat in the upper end of the lake near the Fishhawk Creek inlet. Sediments accumulate each year near the inlet of Fishhawk Lake which can decrease the storage capacity of the lake and additionally the ability of Fishhawk Lake to attenuate large storm events. The sediment deposits also decrease the water depth near the inlet to the extent that navigability by boat is not available. Excess sediment can also redirect streamflow towards near shore homes and increase risk of damage from floods. Fishhawk Lake HOA was granted a dredging permit in 2005 and would like to renew the permit as well as propose an alternative dredging method designed to decrease the impacts on aquatic habitat from the dredging operation. Fishhawk Lake sees an annual migration of Coho Salmon, Sea run Cutthroat Trout and Steelhead. Upstream migration of these species occurs in the fall/winter months from October through March when the dredging is not as active. Downstream migration of juveniles and smolts occurs in the spring when dredging is completely curtailed from February 15 - June 15.

The Fishhawk Lake HOA has a strong interest in keeping Fishhawk Lake as a productive fishing location and vacation venue for its residents and continually seeks better ways at minimizing the HOA impacts on the surrounding area. The improved dredging method presented in this permit application is one method that the HOA feels it can lessen these impacts.

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*Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*

v. 07-07-09
**Project Drawings**

State the number of project drawing sheets included with this application: 3

A complete application must include a location map, site plan, cross-section drawings and recent aerial photo as follows and as applicable to the project:

- **Location map** (must be legible with street names) (Attachments A and B)
  - Site plan including;
  - Entire project site and activity areas
  - Existing and proposed contours
  - Location of ordinary high water, wetland boundaries or other jurisdictional boundaries
  - Identification of temporary and permanent impact areas within waterways or wetlands
  - Map scale or dimensions and north arrow
  - Location of staging areas
  - Location of construction access
  - Location of cross section(s), as applicable
  - Location of mitigation area, if applicable

- **Cross section drawing(s)** including: (Attachment C)
  - Existing and proposed elevations
  - Identification of temporary and permanent impact areas within waterways or wetlands
  - Ordinary high water and/or wetland boundary or other jurisdictional boundaries
  - Map scale or dimensions

- **Recent Aerial photo** (1:200, or if not available for your site, the highest resolution available) (Attachment A and B)

Will any construction debris, runoff, etc., enter a wetland or waterway?  Yes ☐  No ☒

If yes, describe the type of discharge and show the discharge location on the site plan.

Spoils will be pumped from the dredge to the settling ponds located upstream of the Fishhawk Creek inlet. In addition to the settling ponds, spoils are also pumped to an upland disposal site where 50 ft radius sprinklers are used to spread out the spoils for infiltration into the ground. If at any point the dredging process overwhelms the capacity of the settling ponds and upland disposal site, dredging will be stopped until the capacity of the system can be restored. An overall locator map is given in Attachment A. Attachment B is a more detailed map showing access and areas dredged. Attachment C is for a cross-section. Drawings and descriptions of the settling ponds are given in Attachment D. Attachment D developed in 2005 describes the current dredging operation to spoils ponds and the land application of excess water while the new alternative dredging operation which builds on this foundation of handling spoils is described within the application.

Since 2005, dredging occurs from mid June to mid February with quiet periods during active adult migration September to February (where there is a one day on one day off schedule) or when the capacity of the settling ponds have been exceeded. The HOA has also developed an Operation and Maintenance Plan that will incorporate the measures of this application and permit that is available upon request.

| Estimated project start date: | June 15       | Estimated project completion date: | February 15 |

*Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*
Measures to Minimize Impacts

Describe what measures you will use (before and after construction) to minimize impacts to the waterway or wetland. These may include but are not limited to the following:

- For projects with ground disturbance include an erosion control plan or description of other best management practices (BMP's) as appropriate. (For more information on erosion control practices see DEQ's Oregon Sediment and Erosion Control Manual)
- For work in waterways where fish or flowing water are likely to be present, discuss how the work area will be isolated from the flowing water.
- If native migratory fish are present (or were historically present) and you are installing, replacing or abandoning a culvert or other potential obstruction to fish passage, complete and attach a statement of how the Fish Passage Requirements, set by the Oregon Department of Fish and Wildlife will be met.

Measures that will be completed to minimize impacts to Fishhawk Lake include timing the dredging activities based on guidelines for time of work provided by the Oregon Department of Fish and Wildlife. Dredging will be accomplished during a time to avoid potential impacts to downstream migrating salmonid species. Annual in water dredge removal will not exceed 10,000 cubic yards and will be removed using a suction dredge to reduce turbidity caused by the dredging. All dredging areas will be confined to the areas specified in on the site map. Zone 2 and 3 areas will only be dredged once visual triggers are met. Drag head will be maintained in the sediments when dredge pumps are running. Monitoring of the turbidity will be accomplished by identifying monitoring points (upstream of Fishhawk Creek inlet) that will be used to compare to turbidity downstream of Fishhawk Dam. Hazardous substances, chemical, and petroleum products will not be stored on Fishhawk Lake or Fishhawk Creek. The spoils disposal site will be leveled and seeded after dredging operation had been completed to reduce possible erosion at this location which is upslope. Spoils will be monitored for any fish that may have been captured and Oregon Department of Fish and Wildlife will be notified if this occurs. Spoils disposal sites will be closely monitored during the dredging procedure to ensure that the settling basins are maintained below capacity and no overflow of spoils occurs.

Description of resources in project area

- Ocean
- Estuary
- River
- Lake
- Stream
- Freshwater Wetland

Describe the existing physical and biological characteristics of the wetland/waterway site by area and type of resource (Use separate sheets and photos, if necessary).

For wetlands, include, as applicable:
- Cowardin and Hydrogeomorphic (HGM) wetland class(s)*
- Dominant plant species by layer (herb, shrub, tree)*
- Whether the wetland is freshwater or tidal
- Assessment of the functional attributes of the wetland to be impacted*
- Identify any vernal pools, bogs, fens, mature forested wetland, seasonal mudflats, or native wet prairies in or near the project area.

For waterways, include a description of, as applicable:
- Channel and bank conditions*
- Type and condition of riparian vegetation*
- Channel morphology (i.e., structure and shape)*
- Stream substrate*
- Fish and wildlife (type, abundance, period of use, significance of site)
- General hydrological conditions (e.g. stream flow, seasonal fluctuations)*

* Italics areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.
Mitigation

Describe the reasonably expected adverse effects of the development of this project and how the effects will be mitigated.*

- For permanent impact to wetlands, complete and attach a Compensatory Wetland Mitigation (CWM) Plan. (See OAR 141-085-0705 for plan requirements)*
- For permanent impact to waters other than wetlands, complete and attach a Compensatory Non-Wetland Mitigation (CNWM) plan (See OAR 141-085-0765 for plan requirements)*
- For permanent impact to estuarine wetlands, you must submit a CWM plan.*

It is not anticipated that wetland mitigation will be needed for this project because impacts only include temporary increases in turbidity and minimal lake bottom disturbance. Dredging will reestablish the original lake bathymetry before sedimentation occurred. Zone 2 and 3 areas will provide shallow water habitat with cover and only be disturbed on a less frequent basis.

Mitigation Location Information (Fill out only when mitigation is proposed or required)

Proposed mitigation☐ Onsite Mitigation ☐ Offsite Mitigation ☐ Mitigation Bank ☐ Payment to Provide

Type of mitigation:
☐ Wetland Mitigation ☐ Mitigation for impacts to other waters ☐ Mitigation for impacts to navigation, fishing, or recreation

Street, Road or Other Descriptive Location

Legal Description (attach tax lot map*)

Quarter/Quarter Section Township Range

In or near (City or Town) County Tax Map # Tax Lot #*

Wetland/Waterway (pick one) River Mile (if known) Latitude (in DD DDDD format) Longitude (in DD DDDD format)

Name of waterway/watershed/HUC Name of mitigation bank (if applicable)

---

* Attach a copy of all tax maps with the project area highlighted.
  * Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.

v 07-07-09
(8) COASTAL ZONE CERTIFICATION *

If the proposed activity described in your permit application is within the Oregon coastal area, the following certification is required before your application can be processed. A public notice will be issued with the certification statement, which will be forwarded to the Oregon Department of Land Conservation and Development for its concurrence or objection. For additional information on the Oregon Coastal Zone Management Program, contact the department at 635 Capitol Street NE, Suite 150, Salem, Oregon 97301 or call 503-373-0850.

CERTIFICATION STATEMENT

I certify that, to the best of my knowledge and belief, the proposed activity described in this application complies with the approved Oregon Coastal Zone Management Program and will be completed in a manner consistent with the program.

<table>
<thead>
<tr>
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<tr>
<td>Applicant Signature</td>
<td>Date</td>
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(9) SIGNATURES FOR JOINT APPLICATION

Application is hereby made for the activities described herein. I certify that I am familiar with the information contained in the application, and, to the best of my knowledge and belief, this information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities. By signing this application I consent to allow Corps or Dept. of State Lands staff to enter into the above-described property to inspect the project location and to determine compliance with an authorization, if granted. I hereby authorize the person identified in the authorized agent block below to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

I understand that the granting of other permits by local, county, state or federal agencies does not release me from the requirement of obtaining the permits requested before commencing the project. I understand that payment of the required state processing fee does not guarantee permit issuance. The fee for the state application must accompany the application for completeness.

| Amount enclosed | $362.00 |

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<th>Title</th>
<th>Print/Type Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jim DelBusto</td>
<td>Director of Operations</td>
<td>E. George Robins</td>
<td>Senior Project Manager</td>
</tr>
<tr>
<td>Applicant Signature</td>
<td>Date 3/27/12</td>
<td>Authorized Agent Signature</td>
<td>Date 2-14-12</td>
</tr>
</tbody>
</table>

Landowner signatures: For projects and for mitigation work performed on land not owned by the applicant, including state-owned submerged and submersible lands, please provide signatures below. A signature by the Department of State Lands for activities proposed on state-owned submerged/submersible lands only grants the applicant consent to apply for authorization to conduct removal/fill activities on such lands. This signature for activities on state-owned submerged and submersible lands grants no other authority, express or implied.

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<tr>
<td>Property Owner Signature</td>
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<td>Mitigation Property Owner Signature</td>
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* Indicated areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.
TYPICAL DREDGE SECTION A-A
FISHHAWK LAKE, OR

Attachment C: Fishhawk Lake Cross Section A-A Conceptual Typical Section.

Indicated areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.
Attachment C. Cross-section B-B (actual cross-section used in HEC-RAS model; disclaimer - the lake bottom portion under the OHW is considered accurate at time of measurement in 2009, however areas outside of this on each bank are based on 10 m DEM and do not indicate the bench features along the bank.)
Attachment C. Cross-section D-D (actual cross-section used in HEC-RAS model; disclaimer - the lake bottom portion under the OHW is considered accurate at time of measurement in 2009, however areas outside of this on each bank are based on 10 m DEM and do not indicate the bench features along the bank.)

* Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.
Attachment D. Improved Dredging Operation (originally developed for 2005 application)

(Disclaimer: In several places the proceeding analysis implies overflow spoil leakage into Fish Hawk Creek. This should not be implied that these overflow events were happening, but rather that the risk of them happening was too great, so better measures to manage and control dredge spoils are incorporated to reduce the risk of overflow occurring including better management of the settling ponds and land application of settled out water to extend the effective life of the ponds before they need to be cleaned out.)

Fishhawk Lake: Improved Dredging Operations
Background Information and Attachments
for 401 Permit Joint Application Form

Applicant Information:
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Prepared by:
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Portland, OR 97213

Ron Bush, P.E., Civil Engineer
16151 SE Bluff Road
Sandy, OR 97055

April 20, 2005

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Attachment 1 – Project Description

Fishhawk Lake is a reservoir located on Fishhawk Creek, in the Nehalem River Subbasin – HUC 17100202 in Northwestern Oregon, approximately halfway between Portland (41 miles west/northwest) and Astoria (32 miles east/southeast). The reservoir is dredged for 6-9 weeks every year to remove fine sediment (sand/silt/organics) that are deposited largely in high flow events. Dredging operations suspend only a small amount of sediments, increasing turbidity slightly near the dredge intake. Spoils (sediment and water) are pumped to a settling area. However, increased turbidity can result when the settling area is filled to capacity and dredge spoils overflow back to the lake via Fishhawk Lake.

In the past, once settling areas are filled to capacity and dredge operations continue, the overflow is returned to the lake via Fishhawk Creek. The spoils (largely water and suspended organics) that are returned to the lake have extremely high suspended sediment loads, and significantly increase creek and lake turbidity. These introduced suspended sediment particles are very fine, and do not settle. Instead they remain suspended and must be flushed from the lake, significantly increasing Fishhawk Creek turbidity, downstream from the lake to the confluence with the Nehalem River. Sparse data have been collected, none of which overlap a dredging period. Visual observations clearly suggest that the Oregon turbidity standard (OAR 340-41-0036) is violated during dredging operational periods.

The solution to turbidity increases is removing the suspended sediment at the source, which is the overflow and return of spoils to Fishhawk Creek and Lake. Improved dredge operations outlined in this permit document detail methods that stop overflows of dredge spoils to Fishhawk Creek and Lake. Primary measures that prevent increases turbidity increases include operating within the retention capacity, increasing maintenance of retention areas, and increasing water/spoil removal from settling areas with land application.

Target - Oregon’s Turbidity Standard

OAR 340-41-0036: Turbidity (Nephelometric Turbidity Units, NTU): No more than a ten percent cumulative increase in natural stream turbidities shall be allowed, as measured relative to a control point immediately upstream of the turbidity causing activity. However, limited duration activities necessary to address an emergency or to accommodate essential dredging, construction or other legitimate activities and which cause the standard to be exceeded may be authorized provided all practicable turbidity control techniques have been applied and one of the following has been granted:

(a) Emergency Activities: Approval coordinated by DEQ with the Department of Fish and Wildlife under conditions they may prescribe to accommodate response to emergencies or to protect public health and welfare;
(b) Dredging, Construction or other Legitimate Activities: Permit or certification authorized under terms of Section 401 or 404 (Permits and Licenses, Federal Water Pollution Control Act) or OAR 41-085-0100 et seq. (Removal and Fill Permits, Division of State Lands), with limitations and conditions governing the activity set forth in the permit or certificate.

Page 1
Description:
1. Dredge spoils are pumped to settling areas
2. Settling areas fill with water and fine sediments
3. Once filled, unsettled sediments and water overflow and are returned to the creek/lake
4. Pronounced increases in turbidity result when settling areas are filled and overflowing.

Specifications — Current System

<table>
<thead>
<tr>
<th></th>
<th>Settling Area #1</th>
<th>Settling Area #2</th>
<th>Total System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom Elevation</td>
<td>810.0 ft</td>
<td>813.5 ft</td>
<td></td>
</tr>
<tr>
<td>Top of Dike</td>
<td>822.5 ft</td>
<td>822.5 ft</td>
<td></td>
</tr>
<tr>
<td>Volume</td>
<td>251,721 ft³</td>
<td>295,569 ft³</td>
<td>547,290 ft³</td>
</tr>
<tr>
<td>Time to Fill</td>
<td>26 hrs</td>
<td>30 hrs</td>
<td>56 hrs</td>
</tr>
<tr>
<td>Time to Empty</td>
<td>Variable ~ Infiltration and Evaporation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time to Fill Each Settling Area — Current System

*Italicized areas are not required by the Corps for a complete application, but may be necessary prior to final permit decision by the Corps.*
Time to Fill Each Settling Area ~ Enhanced System with Land Application

Total Time (Daily Cycles Apparent)

- Land Application Rate
- No Land Application
- 1/4 inch per day
- 1/2 inch per day
- 3/4 inch per day
- 1 inch per day

Retained Volume of Water and Sediment (ft³)

Hours of Dredging (Ten Hour Daily Cycles)

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Attachment 3 – Monitoring

**Measure Dredging Effect on Lake Turbidity.** Turbidity measurements near the dredge intake (upstream and downstream of the intake) and at the lake outlet will be collected within 24 hours of the commencement of dredging operations. If turbidity has increased above water quality standards (e.g., greater than 10% over natural background), dredging operations will cease until increases in turbidity are compliant with OAR 340-41-0036.

**Record Annual Total Spoil Removal.** The dredging of Fishhawk Lake removes fine sediments from the Nehalem River subbasin. The total amount of sediment removed will be measured during settling area cleaning/maintenance. Pumped volumes of spoils/water delivered to land application will also be recorded. The sum of settled and suspended sediments removed from Fishhawk Lake will be recorded annually and made publicly available. When turbidity increases cease, the dredging operation will become a net benefit to the Nehalem River by decreasing fine sediments. The benefit will be quantified annually.

**Bathymetry Changes.** A bathymetric map will be maintained annually that displays reasonably accurate bathymetric surfaces of Fishhawk Lake. It will be possible to track bathymetric changes pre- and post-dredging, and inter-annual variations.

**Natural Background.** Bi-Weekly turbidity and flow measurements will be recorded in Fishhawk Creek, directly above the lake (at the road crossing) and downstream of the lake (at lake outfall), along with lake elevation. These data will allow for seasonal statistical analysis of natural turbidity and flow variations. The goal is to make the results of dredging operations conform to this natural condition.

**Visual Inspection of Spoils.** The spoils will always be monitored for juvenile salmonids. An observed juvenile salmonid entrained in the dredge system will require the cessation of dredging and reporting to Oregon Department of Fish and Wildlife.

**Reporting.** Data will be recorded in excel spreadsheets and summarized annually in a standard report format.
Attachment 5 – Land Application

Removal of excess water from retaining ponds by land application. A submerged pump will regulate retention pond water elevation to prevent overflow and will extend storage. Land application will occur on adjacent land directly to the west of the Fishhawk Lake community. An estimated 15 acres of adjacent land allows for land application rate between 1/2" and 1" per day, or 13,612 to 45,450 ft³ per day. The dredge system creates roughly 96,120 ft³ of spoils and water per daily cycle, roughly twice that of the optimal land application rate.

Manage land application rates to prevent excess runoff. The goal to match the combined infiltration and evaportranspotation rates, so that no overland flows are returned to the lake or run off of the land application property.

Fishhawk Lake is prepared to invest in these improvements. The estimate below assumes that the system would be constructed by Fishhawk Lake staff, and represents a material cost.

<table>
<thead>
<tr>
<th>Material</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pumping System</td>
<td></td>
</tr>
<tr>
<td>Pump - 15 horse power, 230/480 volt, 3 phase, 60 hz, 6&quot; discharge</td>
<td>$2,500</td>
</tr>
<tr>
<td>submersible well pump</td>
<td></td>
</tr>
<tr>
<td>Control Panel - Operates from float switches mounted in Pump Holding Structure</td>
<td>$2,000</td>
</tr>
<tr>
<td>Power Supply</td>
<td></td>
</tr>
<tr>
<td>Pump Holding Structure - 48&quot; diameter manhole sections with precast manhole base. 12&quot; diameter hole approximately 2 feet from bottom of manhole. Overall manhole height is from bottom of pond to top of dike. Catwalk to get from top of dike to top of manhole</td>
<td>$3,000</td>
</tr>
<tr>
<td>Mainline Water Delivery Piping</td>
<td></td>
</tr>
<tr>
<td>6&quot; HDPE (SDR 21), Burried - 2000 feet @ $15/foot (pipe=$8.50)</td>
<td>$30,000</td>
</tr>
<tr>
<td>4&quot; HDPE (SDR 21), Burried - 2000 feet @ $11/foot(pipe=$4.50)</td>
<td>$22,000</td>
</tr>
<tr>
<td>Sprinkler System</td>
<td></td>
</tr>
<tr>
<td>Model 65 Rainbird Sprinkler Heads - 15 gallons per minute each at 50 psi. 50 foot radius spray pattern. $75 each</td>
<td>$1,500</td>
</tr>
<tr>
<td>Riser Piping at Each Head - 1-1/2&quot; galvanized steel pipe and fittings.</td>
<td>$1,000</td>
</tr>
<tr>
<td>Risers to be 30&quot; tall. $50 each</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$54,500</td>
</tr>
</tbody>
</table>

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Profiles

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