

STORMWATER POLLUTION PREVENTION PLAN

WAHL EXTRACTION AREA AND WAHL CONVEYOR

LOCATED IN PORTIONS OF
SEC. 6, TWP. 27 N., RGE. 1 E.,
SEC. 1, TWP. 27 N., RGE. 1 W., W.M.
JEFFERSON COUNTY, WASHINGTON

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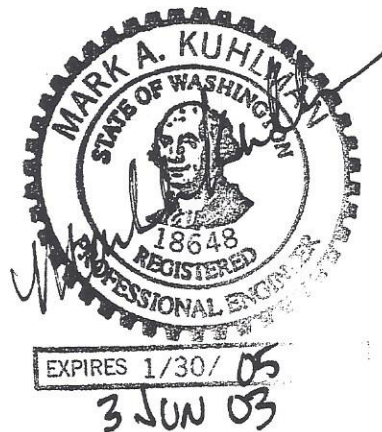


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1.0 INTRODUCTION

At current rates of extraction, the existing mining areas located at the Shine Pit (Sec. 31/32, Township 28 North, Range 1 East and Sec. 5, Township 27 North, Range 1 East, W.M.) will be depleted by 2004.

Sand and gravel currently processed at the Shine Pit is trucked from the site as products for the construction industry and is used as aggregate for the portable asphalt batch plant owned and operated on site by Ace Paving.

The proposed Wahl Extraction Area (WEA) and associated Wahl Conveyor will provide a continuing source of supply for the local construction industry and is one component of the Thorndyke Resource Operations Complex (T-ROC). T-ROC also consists of the existing Shine Pit, the future prospective Meridian Extraction Area, and the proposed Central Conveyor and Pier.

The Wahl Extraction Area is a proposed permit area located south and west of the Shine Pit area. It has been under review at the Department of Natural Resources since March 2001 as a permit "expansion." A revised application for a "new" permit with the Department of Natural Resources was prepared at their request and also includes studies and reports to meet the conditions placed by Jefferson County through the Mineral Resource Land (MRL) overlay district approval process.

The Wahl Extraction Area will be used as a source to allow Fred Hill Materials to continue to meet current levels of demand for sand and gravel products when the Shine Pit is depleted. Sand and gravel will be extracted from the mining site and be transported via a 1.25-mile conveyor (Wahl Conveyor) to existing processing facilities located at the Shine Pit Operations Hub. The access road and conveyor, located in a 60-foot wide easement, will add an additional 9 acres to the permit area. Total area of the permit will be 165 acres. While the mining permit area will be 156 acres, the actual disturbed mining area will be approximately 137 acres. The anticipated depth of mining in this area is a maximum of 90 feet below existing grade.

This report is prepared for both the Department of Ecology (Ecology), Sand and Gravel General Permit (WAG No. 50-1120), and Jefferson County, Stormwater Permit. Ecology requires an updated SWPPP for the site. The existing NPDES permit for the Shine Pit will be revised to include the WEA and Wahl Conveyor. This document covers the WEA and Wahl Conveyor alone. The existing Shine Pit has a SWPPP in place. The two sites have different SWPPPs because the sites have different equipment and different BMP implementation requirements. In addition, this report covers all stormwater related conditions placed on the site by the Mineral Resource Lands overlay approval (MLA#02-235, Ordinance No. 14-1213-02, Jefferson County).

This report addresses stormwater issues through all phases of the project. Operations and maintenance of stormwater management generated during mining activities are covered under the Stormwater Pollution Prevention Plan BMPs, in accordance with the National

Pollutant Discharge Elimination System (NPDES) permit requirements as defined in the general permit issued by the Department of Ecology, the Sand and Gravel General Permit. Full citations of Department of Ecology Best Management Practices (BMPs) selected for the site are included in Appendix I. All BMPs and other technical requirements are designed in accordance with the Department of Ecology's *Stormwater Management Manual for Western Washington* (2001). Construction of the conveyor is covered under the Construction Stormwater Pollution Prevention Plan, Appendix II. An Erosion and Sediment Control Plan is included as Appendix III. A Spill Control Plan is included as Appendix IV. Monitoring requirements and reporting requirements are discussed in Appendix V. Employee training worksheets and recordkeeping forms for inspections are included in Appendix VI.

1.1 Project Location

The proposed Wahl Extraction Area is located south of Highway 104 in the eastern portion of Jefferson County, Washington, between Port Ludlow and Dabob Bay (See Figure 1 – Vicinity Map). The site lies in portions of the following quarter quarter sections:

All of the NW $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West;
NW $\frac{1}{4}$ and SW $\frac{1}{4}$, NE $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West;
NW $\frac{1}{4}$ and NE $\frac{1}{4}$, SW $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West;
NW $\frac{1}{4}$ and SW $\frac{1}{4}$, SE $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West, W.M.

The Wahl Conveyor lies within the following quarter quarter sections:

NW $\frac{1}{4}$ and NE $\frac{1}{4}$, SE $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West;
SE $\frac{1}{4}$, NE $\frac{1}{4}$, Section 1, Township 27 North, Range 1 West;
All of the NW $\frac{1}{4}$, Section 6, Township 27 North, Range 1 East;
NW $\frac{1}{4}$ and NE $\frac{1}{4}$, NE $\frac{1}{4}$, Section 6, Township 27 North, Range 1 East, W.M.

The Wahl Conveyor connects the existing Shine Pit to the proposed Wahl Extraction Area. The proposed Project site is approximately 4 $\frac{1}{2}$ miles southwest of Port Ludlow and approximately 4 miles west of the community of Shine.

1.2 Property Description and Land Use Designations

The land on which the Wahl Extraction Area and Wahl Conveyor will be constructed is part of an area known as the Thorndyke Resource Management Area or "Thorndyke Block," which is approximately 21,000 acres of long-term forest production owned by Pope Resources and managed by Olympic Resource Management. Jefferson County's land use designation for this area is *Commercial Forest (CF-80)*.

The Thorndyke area was logged in 1930, and wild fires spread through it in 1939. The forest reseeded naturally over the last 60 years, and second-growth timber now predominates. Logging of all areas in the Thorndyke Resource Management Area is expected over time. Many portions of WEA and the Wahl Conveyor site have been

logged within the past 10 years and are either clear of vegetation or covered with forest brush and shrubs.

1.3 Project History

Fred Hill Materials, Inc. (FHM) received an expanded Reclamation Permit from the Washington State Department of Natural Resources (DNR) in 2000 which included additional mining area to the south of the existing operation. Revised stormwater plans were submitted to the Washington State Department of Ecology in January 2001 to update the existing Sand and Gravel General Permit (NPDES), WAG 50-1120. SEPA was also completed as a part of DNR review of the expanded Reclamation Permit.

In order to sustain the current processing activities at the Shine Pit (Operations Hub), the permitting process for the Wahl Extraction Area was begun in 2000. In September 2002, it was determined that the Wahl Extraction Area would require a new permit, rather than an expansion of the existing permit. In addition, Jefferson County and DNR propose to co-lead SEPA review of the proposal.

In December 2002 the Jefferson County Board of County Commissioners approved a Mineral Resource Lands Overlay designation for an area of 690 acres, which included both the Wahl Extraction Area and the Wahl Conveyor easement. The approval conditions are stated in Ordinance No. 14-1213-02. The conditions require a Drainage and Erosion Control Plan, Grading Plan, Habitat Management Plan, Aquifer Recharge Area Report, Extraction Report, Stormwater Permit (Type I), DNR Reclamation Permit, and SEPA review, among others.

1.4 Project Details

1.4.1 Wahl Extraction Area

The Wahl Extraction Area is a total of 156 acres. Within those 156 acres, 19 acres is located within environmental setbacks of 200 or 300 feet from sensitive areas. These 19 acres will not be mined, graded, or disturbed in any way. The remaining 137 acres will be mined and reclaimed in a progressive, segmental fashion. Segments of approximately 12 to 15 acres will be logged, stripped of vegetation, topsoil removed and stockpiled, mined, and subsequently reclaimed. Reclamation includes the placement of topsoil, woody debris (as available), and planting of native tree species. A reclamation bond is required by DNR and an annual report is prepared that discloses acreage mined to date, acreage to be mined, and areas that have been reclaimed. In addition, Jefferson County conditions include third-party monitoring and reporting of the mining and reclamation activities.

1.4.2 Wahl Conveyor

The Wahl Conveyor will consist of a single 48-inch belt supported by metal frames resting on steel pads. The conveyor with support structure will be approximately five feet wide and seven feet high, with a two-foot clearance from the ground. The conveyor belt system will be covered over its entire length. The cover is a dust control measure for materials being transported from the Wahl Extraction Area to the

Shine Pit. The Wahl Conveyor will originate at the southeast corner of the Wahl Extraction Area and traverse northeast to the southwest corner of the Shine Pit. The alignment of the Wahl Conveyor was established to avoid impacts to environmentally sensitive areas.

According to the technical studies prepared to date, the conveyor and extraction activities will not impact any existing wetlands, streams, steep slopes, or other sensitive areas.

In addition to the Wahl Conveyor, the corridor will include underground electrical power and a 12-foot-wide, gravel forestry service road. The new forestry service road will provide access both to the conveyor for maintenance and to forestry activities in the Thorndyke Block.

Approximately 79,200 sq. ft. (1.8 acres) of new road will be constructed. A Forest Practices Application (#2604058) for clearing and construction of the road was approved in July 2001. Forest service roads are exempt from Jefferson County's Stormwater Management Permit requirements.

In areas where the Wahl Conveyor will cross existing forestry service roads, an overhead crossing for the conveyor will be constructed. Where elevated, the conveyor structure will include a 2 ½-foot wide catwalk on either side of the conveyor for maintenance. The total width of the structure over elevated crossings will be 11 feet (See detail Sheet 7). Mammal crossings will also be provided approximately every 300 feet along the conveyor (Resources Northwest Consultants 2003). Where feasible, mammal crossings coincide with the proposed overhead crossings.

1.4.3 Transfer Points

The Wahl Conveyor will include four transfer points, in addition to the transfer points located at either end of the conveyor. The transfer point at the beginning of the conveyor at the boundary of the Wahl Extraction Area is called the tail pulley. The tail pulley is unpowered but includes a hopper where sand and gravel is transferred to the conveyor either from a loader or from a temporary, mobile conveyor located within the Wahl Extraction Area. The transfer point will be fixed but will connect to the current segment of mining by this temporary conveyor, similar to current operations in Shine Pit. The intermediate transfer points consist of both a head pulley and tail pulley. The head pulley motor powers the belt and pulls it in a continuous loop from the tail pulley. The transfer point at the end of the conveyor at the Shine Pit is also called a head pulley.

Transfer points are located where two straight belt sections of the conveyors meet. At this intersection, the direction of the conveyor may shift. In this way, the conveyor route can be designed to avoid environmentally sensitive areas. Properly selected transfer points also allow for a relatively even power requirement for each segment of the conveyor.

Each transfer point will consist of a hopper, an electric motor and pulleys, a 12-foot by 16-foot utility shed, a return belt sweeper (to clean dust from the upper section of the conveyor), and stormwater controls.

1.4.4 Satellite Facility

During the early stages of mining at the Wahl Conveyor, the only equipment located at WEA will be a loader and portable screening plant. The loader excavates sand and gravel and deposits mined material into the hopper which feeds the Wahl Conveyor. The portable screening plant removes oversize materials that would not fit through the conveyor system. During the early stages of mining at Wahl, the loader will be stored overnight in a parking stall with an impervious liner underneath. A temporary Sani-Can will be provided for workers at the site. As the first segments are mined and the final mine floor begins to take shape, a permanent facility will be constructed. This facility will provide a permanent restroom, break room, emergency medical station, and enclosed parking for the loader. Associated appurtenances will include an exempt well and a septic system. A line buried along the length of the conveyor will supply electric power to WEA and the Transfer Points.

A portable conveyor will be located within the WEA. This portable conveyor connects the active mining area with the Wahl Conveyor. The conveyor can be extended as necessary to reach the active mining site by adding supports and installing a longer conveyor belt.

2.0 SOIL TYPES

2.1 Wahl Extraction Area

The soils on site within the Wahl Extraction Area are listed in the *Soil Survey of Jefferson County Area, Washington* (1975) prepared by the United States Department of Agriculture, Soil Conservation Service, as:

- Alderwood gravelly sandy loam, 0 to 15 percent slopes (A1C)
- Dabob very gravelly sandy loam, 0 to 15 percent slopes (DaC)
- Everett gravelly loamy sand, 0 to 15 percent slopes (EvC)
- Everett gravelly loamy sand, 15 to 30 percent slopes (EvD)
- Sinclair gravelly sandy loam, 0 to 15 percent slopes (SnC)

(See Figure 3 – Soils Map).

2.2 Wahl Conveyor

The soils along the Wahl Conveyor are listed as:

- Alderwood gravelly sandy loam, 0 to 15 percent slopes (A1C),

Dabob very gravelly sandy loam, 0 to 15 percent slopes (DaC)
Dabob very gravelly sandy loam, 15 to 30 percent slopes (DaC)
Everett gravelly loamy sand, 0 to 15 percent slopes (EvC)
Everett gravelly loamy sand, 15 to 30 percent slopes (EvD)
Hoypus gravelly loamy sand, 0 to 15% slopes (HuC)
Sinclair gravelly sandy loam, 0 to 15 percent slopes (SnC)

(See Figure 3 – Soils Map).

2.3 Hydrologic Groups and Soil Properties

Each soil group is classified within one of four hydrologic groups. Each hydrologic group contains similar soils based on soil type (ie. Sand or loam), permeability, runoff, and hazard of erosion.

The Alderwood series Soil Group is listed as *Hydrologic Group C*.

The Dabob series Soil Group is listed as *Hydrologic Group C*.

The Everett series Soil Group is listed as *Hydrologic Group A*.

The Hoypus series is listed as *Hydrologic Group A*.

The Sinclair series Soil Group is listed as *Hydrologic Group C*.

(See Exhibit 1 – Hydrologic Soil Series).

According to the *Soil Survey of Jefferson County Area, Washington* (1975), the Alderwood soil series is classified as well drained. Permeability is moderately rapid. There is a cemented layer at 20 to 40 inches, which limits infiltration below this layer and may hold a seasonal groundwater above it during winter months. Runoff from this soil type is slow to medium. Water erosion hazard is slight to moderate.

According to the *Soil Survey of Jefferson County Area, Washington* (1975), the Dabob soil series is classified as moderately well drained. Permeability is moderately rapid. There is a cemented layer at 20 to 36 inches, which limits infiltration below this layer and may hold a seasonal groundwater above it during winter months. Runoff from this soil type is slow to medium. Water erosion hazard is slight to moderate.

According to the *Soil Survey of Jefferson County Area, Washington* (1975), the Everett soil series is classified as somewhat excessively drained. Permeability is rapid. Runoff from this soil type is slow to medium. Water erosion hazard is slight to moderate.

According to the *Soil Survey of Jefferson County Area, Washington* (1975), the Hoypus soil series is classified as somewhat excessively drained. Permeability is rapid. Runoff from this soil type is slow to medium. Water erosion hazard is slight to moderate.

According to the *Soil Survey of Jefferson County Area, Washington* (1975), the Sinclair soil series is classified as moderately well drained. Permeability is moderately rapid. Runoff from this soil type is slow to medium. Water erosion hazard is slight to moderate.

There are no soils on the project site that are expected to pose a significant erosion hazard. All soil types have infiltrative capacities, as evidenced by the lack of standing water throughout the majority of the area. Exceptions are localized wetlands that are perched on cemented or till layers indicative of several of the soil types. In general, there is not expected to be a high erosion potential. Construction activities will conform to the Construction SWPPP (See Appendix I) to prevent erosion during construction. Mining activities will conform to the Erosion and Sediment Control Plan elements discussed in this report (See Appendix III).

3.0 PRE-DEVELOPMENT SITE CONDITIONS

The project area is located entirely within Pope Resource's forestlands. Pope Resources land is currently used as a tree plantation. The tree plantation is worked on an approximately 50 year rotation. Most areas have been logged and replanted within the last 10 years. Heavy native underbrush and established second growth forest cover the property.

Only one segment of the Wahl Conveyor passes through a "mature forest." This occurs between approximately stations 22+00 – 48+00 (See Fig 2 - Site Map). The subject property is zoned *Commercial Forest Lands (CF-80)*. Pope Resources continues to harvest and replant predominantly Douglas fir within the Thorndyke Block. Numerous forestry service roads access the area.

4.0 UPSTREAM ANALYSIS

General declivity of the area is from north to south. Ground elevation is high near State Route 104 and drains south to Hood Canal. There are numerous localized hills and valleys. The Wahl Extraction Area is located within one such valley. Stormwater from the north of the project area runs south towards Thorndyke Creek. A portion of the site is tributary to Wahl Lake, to the east. The Wahl Conveyor crosses localized ridgelines and valleys, with stormwater draining to Wahl Lake, Twin Lakes, and to the existing Shine Pit along the last portion.

In accordance with Best Management Practices (BMPs) in the Washington State Department of Ecology's current *Stormwater Management Manual for Western Washington* (Ecology 2001), BMP T5.30 *Full Dispersion*, offsite runoff will be allowed to sheet flow across the project area and into native vegetation. Because the on-site soils are classified as moderately to rapidly draining, it is expected that infiltration will occur rapidly. In addition, the coarse material being mined, sand and gravel, is a further indicator of rapid infiltration. Where sheet flow is impractical along the conveyor, upstream runoff will be collected in ditches and piped under the project area in culverts. When it is necessary to concentrate runoff from upstream areas, stormwater in excess of existing concentrated flows will be incrementally discharged through rock pads and/or dispersion trenches.

5.0 DOWNSTREAM ANALYSIS

Most of the stormwater from the Wahl Extraction Area discharges to the south, to an unnamed stream that is tributary to Thorndyke Creek. A portion of the WEA, along its eastern boundary, discharges east to Wahl Lake and to wetlands to the south of Wahl Lake (See Figure 2 - Site Map and Figure 4 - Downstream Map). The first 3,300 feet of the Wahl Conveyor is tributary to Wahl Lake. The next 2,200 feet of the conveyor is tributary to Twin Lakes. And the final 1,100 feet of the conveyor discharges to the existing Shine Pit.

All flow paths to adjacent sensitive areas are a minimum distance of 150 feet, usually greater. Native vegetation of varying ages is present and will act to filter stormwater that is tributary to sensitive areas. In addition, in areas of young vegetation, the ground is roughened from logging activities and will slow the velocity of stormwater runoff to minimize erosion potential and promote infiltration.

6.0 OVERVIEW OF PROPOSED STORMWATER MANAGEMENT STRATEGIES

Fred Hill Material's Shine Pit is currently working under Department of Ecology's Sand and Gravel Permit No. WAG 50-1120. This permit has been kept up to date with a revised *Stormwater Pollution Prevention Plan and Erosion and Sediment Control Plan* (October 1999) and a revised *Storm Drainage Report* in January 2001. The permit update was prepared in conjunction with an expansion to Fred Hill Materials Department of Natural Resources (DNR) Reclamation Permit. The Reclamation Permit, No. 70-011936, was revised in July 2000 and approved by DNR in October 2000.

The stormwater analysis for the Wahl Extraction Area will be submitted to Ecology as a revision to the existing Sand and Gravel Permit (NPDES permit). All Stormwater designs proposed in this report are designed to meet the requirements of the *Stormwater Management Manual for Western Washington* (2001). Sites that can fully infiltrate or fully disperse are not required to provide other types of runoff treatment or flow control facilities (Sec. 5.3.4 *Stormwater Management Manual for Western Washington*).

This report is also prepared to meet the requirements of Jefferson County's Stormwater Permit, a Type I Master Land Use Application.

The stormwater management strategies selected for this project include infiltration and full dispersion. Project elements and the stormwater management strategy applied to the project are as follows:

- All mining activities within the Wahl Extraction Area will sheet flow to low depressions in the mine floor and fully infiltrate. BMPs for vehicle maintenance

and other activities associated with mineral extraction are addressed in Source Control BMPs.

- Stormwater generated within the Wahl Conveyor corridor on new impervious surfaces (i.e., forestry service road and conveyor) will be discharged in accordance with BMP T5.30 - Full Dispersion. The project meets the requirements of being located within an area that is more than 65% forested (or native vegetation cover) and less than 10% impervious (total). The roadway section will minimize the concentration of stormwater and allow sheet flow across the road whenever feasible. When stormwater is concentrated, either from the roadway or upstream areas, concentrated flows must be incrementally discharged at less than 0.5 cubic feet per second (cfs). Existing peak flows that enter the project site as a concentrated flow may be discharged in addition to the allowable release of 0.5 cfs. Discharge points up to 0.2 cfs (100-year peak flow) will use rock pads or dispersion trenches to disperse flows. Discharge points between 0.2 and 0.5 cfs (100-year peak flow) shall use only dispersion trenches. Dispersion trench details are provided in full detail in BMP T5.30 of the *Stormwater Management Manual*. Flows from the project must traverse a minimum 100 feet of undisturbed native vegetation to meet the minimum requirements of this BMP. Flowpaths must not exceed 15% slopes. Ditch discharge points must be located at least 100 feet from steep slopes (defined as slopes 40% or steeper), wetlands, and streams.
- Each transfer point will have a utility shed for the periodic maintenance of the conveyor components. Rooftop stormwater generated within the four transfer points along the conveyor route will be discharged to a downspout dispersion system in accordance with BMP T5.10 – Downspout Dispersion. Splashblocks will be used to spread roof runoff to pervious, vegetated areas. See the BMP (Appendix VI) for all design requirements for splashblocks.
- Upstream off-site areas will be allowed to sheet flow across the developed project area in accordance with BMP T5.30 – Full Dispersion. Where maintaining sheet flow is impractical, contributing stormwater will be collected in ditches, conveyed under the road in culverts, and dispersed in accordance with BMP T5.30.

7.0 TECHNICAL REQUIREMENTS AND BEST MANAGEMENT PRACTICES

The Stormwater Pollution Prevention Plan is made up of several components. Each component relates to a specific business practice or task. Each component may not apply to the site during its entire life. SWPPP Elements include an Inventory of Materials, Operational BMPs, Source Control BMPs, Treatment BMPs, and Innovative BMPs. Additional reports that are required as components of the Ecology Sand and Gravel General Permit and/or the Jefferson County Stormwater Management Permit are: 1) Construction Stormwater Pollution Prevention Plan (CSWPPP), 2) an Erosion and Sediment Control Plan (ESCP), 3) a Spill Prevention and Emergency Cleanup Plan, and 4) a Monitoring Plan.

7.1 SWPPP Elements

The SWPPP is required as a component of the NPDES permit. The SWPPP is designed to meet the requirements of Special Condition S9 of the Sand and Gravel General Permit. Stormwater pollution prevention measures for Type 3 stormwater are defined and implemented as outlined in the SWPPP. Type 3 stormwater is defined in the Sand and Gravel General Permit as "stormwater discharges from 1) industrial plant yards; 2) immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; 3) material handling sites; 4) sites used for the storage and maintenance of material handling equipment; 5) sites used for residual treatment, storage, or disposal; 6) shipping and receiving areas; 7) storage areas for raw materials or intermediate and finished products at active sites; and 8) areas where industrial activity has taken place in the past and *significant materials* remain and are exposed to stormwater." Type 3 stormwater is managed by the implementation of BMPs, drainage control, and inspection of the practices and structures associated with stormwater that are implemented at the site.

A copy of the entire SWPPP manual, including all appendices presented above, shall be kept on-site or within reasonable access to the site. Consistent with the general permit, this document must be changed concurrent with a change in design, construction, operation, or maintenance that reduces the SWPPP's effectiveness in controlling pollutants.

The SWPPP shall contain the following elements:

- Site Map
- Inventory of Materials
- Operational BMPs
- Source Control BMPs
- Treatment BMPs
- Innovative BMPs

7.1.1 Site Map

A site map is attached as Figure 2. The site map shows topography of the surrounding area, boundary of permit area, potential locations of stormwater discharge to ground, and final grades. The site map is used for the Monitoring Plan as well as the SWPPP. No stormwater drainage structures are proposed for the site. All discharges will be to the ground. The site will host active mining and after final grade is established in the southeast portion of the site it will host a satellite facility for employees. Adjacent surface water bodies are identified and the known underlying aquifers are described.

7.1.2 Inventory of Materials

No storage of mined materials is proposed at the site. No storage of petroleum products is proposed at the site. No processing of materials is proposed at the site. All light maintenance and fueling of equipment will be by mobile facilities that are

stationed at the Shine Pit. Fuel, maintenance equipment, and fluids are stored at the Shine Pit.

7.1.3 Operational BMPs

Operational BMPs are established to reduce the potential of pollutant discharge in significant amounts. To accomplish this goal, the following categories of Operational BMPs are implemented at the site:

Pollution Prevention Team

The Pollution Prevention Team is identified in Appendix V and consists of FHM employees who are responsible for developing, implementing, maintaining, and modifying the SWPPP.

Good Housekeeping

Good housekeeping means keeping the site clean and maintained so that potential pollutants are not exposed to stormwater. The following practices will be implemented at the site as appropriate:

- Use care to properly dispense fuels without overfilling or “topping off.”
- Consistent with the spill prevention plan, immediately clean up any spills.
- Check daily for any fluid leaks and immediately repair equipment.
- Drain fluids from equipment into an adequate drip pan.
- Dispose of oily solid waste into closed and labeled containers in accordance with the Uniform Fire Code.
- Do not pour any liquids onto the ground.
- Perform heavy oil and grease removal from equipment in an enclosed area with a grease trap (Shine Pit maintenance facility).
- Cleanup and remove trash and garbage on a regular basis inside and outside buildings and/or equipment.
- Perform equipment rinse operations using minimal water; no soaps or detergents are allowed.
- Recycle materials such as oils, solvents, coolants, and batteries to the maximum extent feasible.

- Until a permanent satellite facility is built to store the loader, a temporary parking stall will be constructed for overnight parking (See Sheet 7 – Details). Remove and properly dispose of contaminated sand lining once a year. Check liner for tears and replace if necessary.

Preventive Maintenance

No stormwater structures, processing activities, or impervious parking lots are proposed at the site. The loader will either park over an approved parking stall with an impervious barrier to catch leaks, or within an enclosed area.

Employee Training

The Employee Training plan discusses important concepts and practices to convey in order to prevent contamination of stormwater. An annual employee awareness program will be conducted to inform personnel of the goals and components of the SWPPP. The required annual training will emphasize spill response, monitoring, good housekeeping, and material management practices. All employees who work at the site will receive this training. The program will be implemented by presentations at safety meetings, signs and notices posted throughout the facility, and specific training for employees on the SWPPP and its components. An Employee Information Training Sheet is enclosed in Appendix VI - SWPPP Forms.

Inspections and Recordkeeping

The general permit requires the following inspection and record keeping procedures. This section is a summary of those procedures that must take place to meet the requirements of Special Condition S11 of the Sand and Gravel General Permit. If a self-inspection reveals that the described pollution prevention measures and controls identified in this SWPPP are inadequate, it must be modified within a reasonable time. Each inspection must be conducted by a member of the pollution prevention team (see Appendix VI). Records of the inspection should be maintained. They should describe the methods used, locations observed, and any actions taken.

Erosion Control Inspection. Structural and stabilization devices must be inspected, maintained, and repaired as needed to ensure they perform their intended functions. All on-site erosion and sediment control devices (if used) must be inspected at least once every 7 days, and within 24 hours after any storm that produces more than 0.5 inches of rain in a 24-hour period. A log of these inspections must be kept.

Groundwater Observations. All observation wells within the Wahl/Meridian MRL overlay (690 acres) will be observed on a monthly basis and records kept with the SWPPP. Groundwater observations are used to establish the high water table. Mining in the Wahl Extraction Area must remain ten feet above the seasonal high water table.

Wet Season Inspection. The annual wet season inspection and sampling of storm

water discharge (October 1 through April 30) should be done during rainfall events adequate in intensity and duration to verify the following:

- The description of potential pollutant sources in the SWPPP is accurate and current.
- The site map has been updated or otherwise modified to reflect current conditions.
- The BMPs used to reduce pollutants in storm water discharges are adequate.

Dry Season Inspection. The annual dry season inspection (May 1 through September 30) must also be conducted by a member of the pollution prevention team. The inspection will determine the presence of non-storm-water discharges. The inspection will occur after at least seven consecutive dry days (no precipitation). If a non-stormwater discharge is discovered, FHM must eliminate the discharge within 10 days. If the discharge cannot be eliminated in 10 days, it will be considered process water and will be subject to all process water conditions of the general permit (e.g., sampling requirements). Records of the inspection should be maintained. They should describe the methods used, locations observed, and any actions taken.

Discharge Monitoring Report. Quarterly Discharge Monitoring Reports (DMR) shall be submitted to Ecology. This report provides discharge test results taken in accordance with the permit requirements. If there was no discharge, that result shall be submitted to Ecology. Specific monitoring requirements for this site are located in Appendix V.

Inspections Records. A checklist summarizing the scope of an inspection, the personnel conducting it, the date(s), major observations relating to the implementation of the SWPPP, and actions taken, is found in Appendix VI. Completed checklists are to be kept with the SWPPP.

Incident Reporting. Reports of incidents, such as discharge of spills and other noncompliance notification, must be completed and kept with the records of the SWPPP (See Appendix VI for sample forms).

Reports and Record Keeping. All inspection reports, laboratory results, and incident reports must be kept as part of this SWPPP in order to meet the requirements of Special Condition S6 of the Sand and Gravel General Permit. These documents should be kept in their respective appendices in the SWPPP. Records shall be kept for a minimum of three years. Each measurement or sample taken must include the following: 1) date, place, method, and time of sampling; 2) who performed the task; 3) the date an analysis was performed, if performed; 4) the name of the laboratory or individual who performed the analysis; 5) the techniques or methods used to perform the analysis; and 6) analysis results. If the permittee performs more frequent monitoring or additional monitoring than that required by the permit, those results

shall also be kept with the SWPPP. An example form for inspections is attached in Appendix V.

The SWPPP and attached reports shall be reviewed on an annual basis to verify that the BMPs implemented at the site are reflected in the SWPPP. Every six years the Department of Ecology issues the Sand and Gravel General Permit. At this time, the SWPPP should be reviewed to verify it adequately meets the requirements of the permit.

7.1.4 Source Control BMPs

Source Control BMPs are established to prevent the pollution of stormwater. Volume IV, Chapter 2 of the *Stormwater Management Manual for Western Washington* (2001) was consulted for appropriate BMPs for this type of industrial activity. A full citation of appropriate BMPs is included in Appendix VI. The following BMPs are selected as appropriate for this site:

BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots

Dust will be controlled at the mining site and the forestry service access road adjoining the conveyor with watering, as necessary. The amount of area exposed to active mining operations will be limited to 40 acres. Areas under reclamation and cleared in preparation for imminent mining will be additional areas. Logged areas will retain stumps and other vegetation until mining is ready to begin in that area. See Appendix VI for a full citation of this BMP.

BMPs for Mobile Fueling of Vehicles and Heavy Equipment

To control potential spills of diesel, allow only a properly trained fuel operator to perform mobile fueling. Always use properly functioning fuel transfer equipment. A backup shutoff valve should be installed. Consult with the local fire district and verify that all mobile fueling operations comply with local and state fire codes. The fuel operator shall be present and observant at all times during fueling. The fuel operator shall ensure that fueling occurs over a drip pan or absorbent pad, drip materials are handled properly to prevent a spill of collected fuel, fueling is ceased immediately when the automatic shut-off valve engages, and fuel tanks are never "topped off." The fuel operator shall take part in employee training, shall be made aware of the liability associated with fuel spills, and shall regularly review fueling procedures. A spill kit shall be kept in the fueling vehicle. See Appendix VI for a full citation of this BMP.

BMPs for Maintenance and Repair of Vehicles and Equipment

Control pollutant sources such as parts cleaning, replacement of liquids, and parking. Do a daily inspection of the equipment to check for leaks or needed repairs. Always use drip pans during repair and maintenance operations. Locate the pan under the area being worked on and ensure that any potential spills or leaks will be intercepted. Dispose of wastes properly. Do not pour any waste onto the ground. Park the loader in the overnight parking stall created for this purpose. Perform heavy maintenance

under a covered area with a solid floor. See Appendix VI for a full citation of this BMP.

Disposal of waste from maintenance activities shall be conducted in accordance with the minimum Functional Standards for Solid Waste Handling, Chapter 173-304 WAC, guidelines for disposal of waste materials from stormwater maintenance activities, and where appropriate, the Dangerous Waste Regulations, Chapter 173-303 WAC. In addition, the DOE "Technical Manual" addresses disposal procedures. The Kitsap County Hazardous Waste Guide provides local contacts for the disposal of all types of dangerous wastes

BMPs for Spills of Oil and Hazardous Substances

A Spill Plan is required as a component of the Sand and Gravel General Permit. A Spill Plan is enclosed in Appendix III. See Appendix VI for a full citation of this BMP.

BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products

The only material storage anticipated at the site is oversized rock. A portable screening plant will remove oversized rock from the conveyor system. Oversized rock will be stockpiled and either hauled to Shine Pit for processing or distributed as part of the reclamation process. Oversized rock stockpiles are clean because they have little fines on the surface. No stormwater treatment or other BMP is required.

7.1.5 Treatment BMPs

There are no proposed Treatment BMPs for the Wahl Extraction Area. Stormwater generated within the project area is not generally exposed to pollutants that could contaminate groundwater. All stormwater will be infiltrated and will be filtered as it percolates into the ground. There will be no storage of chemicals or other potential pollutants within the project area. Fueling and maintenance will provide drip pans and other measures to contain all liquids and other wastes.

Stormwater generated within the Wahl Conveyor corridor will be fully dispersed to surrounding native vegetation. This BMP provides treatment of stormwater. The ability of vegetation to trap and support infiltration of stormwater also allows this BMP to prevent runoff. See Appendix VI for a full citation of this BMP.

7.1.6 Innovative BMPs

There are no proposed Innovative BMPs for this project. The BMPs selected for the project from the *Stormwater Management Manual for Western Washington* (2001) are considered appropriate and adequate for the site.

7.2 Construction Stormwater Pollution Prevention Plan (CSWPPP)

The Construction Stormwater Pollution Prevention Plan (CSWPPP) addresses the construction phase of the Wahl Conveyor. The CSWPPP is a component of the

stormwater permit for Jefferson County and is required because new impervious area thresholds are met.

The project area included in the Construction SWPPP is the 9-acre easement area extending from WEA to the Operations Hub. A 12-foot wide forest service road and 5-foot wide conveyor will be located in this corridor. It is anticipated that approximately 40 feet of clearing and grading will be required to construct the road and conveyor. The forest service road will be constructed under a Department of Natural Resources Forest Practices Application (FPA #2604058). The conveyor may require a building permit from Jefferson County. Total clearing for the combined conveyor and road is expected to be 6.1 acres.

A detailed CSWPPP and BMP list is provided in Appendix I.

7.3 Erosion and Sediment Control Plan

An Erosion and Sediment Control Plan (ESCP) covers mining and associated activities within the Wahl Extraction Area. The ESCP is required for both the Sand and Gravel Permit (NPDES) and to meet Jefferson County requirements. The ESCP is designed to meet the requirements of Special Condition S10 of the Sand and Gravel General Permit. The ESCP covers Type 2 stormwater that is generated on the site where soils are exposed due to mining activities at the Wahl Extraction Area. The ESCP discusses measures to prevent erosion during mining activities.

The Wahl Extraction Area is a 156-acre portion of commercial forestland that will be mined to varying depths, with a maximum depth of 90 feet. At all times, mining will not occur within 10 feet of the top of the high seasonal water table. The area will be mined in segments that are 12 to 15 acres in size. Mining will begin in the southeast portion of the mine and move north as materials are mined out. Because the soils are coarse, infiltration is the proposed method of managing stormwater.

A detailed ESCP is provided in Appendix II.

7.4 Spill Prevention and Emergency Cleanup Plan

A spill plan is required as a component of the NPDES permit. The Spill Plan is designed to meet the requirements of Special Condition S12 of the Sand and Gravel General Permit. A spill plan outlines procedures to follow in the event of a spill. Contact information for reporting is provided. The spill plan also provides preventative measures that will be implemented to avoid a spill.

A detailed Spill Prevention and Emergency Cleanup Plan is provided in Appendix III.

7.5 Monitoring Plan

A Monitoring Plan is required as a component of the NPDES permit. The Monitoring Plan is designed to meet the requirements of Special Conditions S4 and S5 of the Sand and Gravel General Permit. The Monitoring Plan discusses what the monitoring requirements of Ecology area and how to take samples to meet this requirement.

At the WEA, all stormwater will be discharged to the ground via infiltration. No process water will be generated on the site. All processing activities occur at the existing Shine Pit. Monitoring requirements include quarterly pH testing and regular visual inspections for oil sheen.

The conveyor corridor will discharge stormwater to the ground via full dispersion to adjacent native vegetation. Monitoring requirements include quarterly pH testing and regular visual inspections for oil sheen.

A detailed Monitoring Plan is provided in Appendix IV.

8.0 HYDROLOGIC ANALYSIS

8.1 Stormwater Flow Control Design

8.1.1 Wahl Extraction Area

Stormwater generated in the Wahl Extraction Area will be infiltrated to ground. The floor of the mine will create a micro-topography with small hills and depressions. This topographic relief will intercept runoff and allow it to infiltrate in numerous areas across the site. Due to the high permeability of soils and the porous nature of gravelly substratum on site, infiltration is anticipated to be fairly rapid in the vicinity of the pit. The design infiltration rate for clean sandy gravels/gravelly sands is 10 inches/hour (Ecology 2001). Consult the *Geologic and Hydrogeologic (CARA) Report* (2003) for further detail on the soils present at the site.

An analysis of the infiltration area required for a typical segment (12 acres) was performed in *StormShedRel. 6.1.6.8* (Engenious Systems). The history file is included in Appendix VII. The stormwater calculations show that using infiltration for stormwater flow control, an area of 200 feet by 200 feet (0.9 acres) receiving all stormwater from the 12-acre segment will see virtually no ponding of water (0.06 feet). This represents less than 8% of the area of the segment.

Mining will create infiltration areas lower than the surrounding terrain as part of the grading process. There is no need for a central infiltration area because all of the soils on site readily infiltrate stormwater. In addition, the farther stormwater travels, the greater the possibility for erosion. It is advantageous to spread the infiltration across the site, without creating ditches or swales. Both the calculations performed and visual inspections of the site show that runoff is not expected from the site. All stormwater will infiltrate to ground due to the coarse nature of the soils.

8.1.2 Wahl Conveyor

Stormwater generated on new impervious surfaces (i.e., forestry service road and conveyor) within the Wahl Conveyor corridor will be discharged in accordance with BMP T5.30 - Full Dispersion (See Appendix VI for full citation). This BMP provides treatment of stormwater and promotes infiltration and evapotranspiration, alternative and preferable hydrologic discharges compared to a surface discharge.

The roadway section will minimize the concentration of stormwater and allow sheet flow across the road wherever feasible. When stormwater is concentrated, either from the roadway or upstream areas, concentrated flows must be incrementally discharged at less than 0.5 cubic feet per second (cfs). Existing peak flows which enter the project site as a concentrated flow may be discharged in addition to the allowable release of 0.5 cfs. Discharge points up to 0.2 cfs (100-year peak flow) will use rock pads or dispersion trenches to disperse flows. Discharge points between 0.2 and 0.5 cfs (100-year peak flow) shall use only dispersion trenches.

8.1.3 Transfer Points

A utility shed will be constructed at each transfer point and will house electric motors and motor controls. The transfer points are powered by electricity, which will be buried adjacent to the conveyor along its length. Each building is designed at 12 feet by 16 feet, or 192 square feet.

Rooftop stormwater generated within the four transfer points along the conveyor route will be discharged to a downspout dispersion system in accordance with BMP T5.10 – Downspout Dispersion. Splashblocks will be used to spread roof runoff to pervious, vegetated areas

8.2 Stormwater Runoff Treatment

Runoff treatment is provided where full dispersion is used for flow control on the forestry service road. Runoff treatment is not required for roof downspout splashblocks because stormwater generated on roofs is considered “clean” and because roof downspouts will be fully dispersed. Runoff treatment is not required for active mining areas where no potential pollutants are exposed to runoff. There are no additional proposed runoff treatment facilities serving the permit area, other than the inherent treatment abilities of full dispersion and infiltration.

9.0 SUMMARY

A Stormwater Pollution Prevention Plan for the Wahl Extraction Area and associated Wahl Conveyor is prepared for the revision of Fred Hill Material's existing Washington State Department of Ecology NPDES permit for mining activities, a Sand and Gravel General Permit (WAG No.50-1120). In addition, Jefferson County requirements for stormwater management require a Construction Stormwater Pollution Prevention Plan and an analysis of stormwater flow control design and treatment design. Other

components of the SWPPP include an Erosion and Sediment Control Plan, Spill Plan, Monitoring Plan, and a review of the BMPs to be implemented at the site.

In general, this site will not see a lot of exposure to potential pollutants. Because there are no processing activities on site and minimal vehicular traffic at the site, there is a reduced risk of a spill or other pollutants being exposed to stormwater. The only equipment that will be operated at the WEA is a loader (two at peak operating times) and a portable screening plant, which removes oversize rock from the conveyor system. Fueling and light maintenance will occur in the field with appropriate BMPs implemented to prevent spills or drips. Heavy maintenance must be performed in a covered area with a solid floor and sump area that will contain spills. This facility is located at the Shine Pit.

Erosion will be controlled by limiting the quantity and distance stormwater will travel within the disturbed mining area. Infiltration areas will be frequent low areas within the mining floor created by grading activities. Erosion during construction of the conveyor will be controlled by standard BMP implementation such as marking clearing limits, stabilizing soils, and installing sediment controls.

This document is intended to guide both regulatory agencies and the mine operator in the practices and recordkeeping to be implemented at the Wahl Extraction Area and Wahl Conveyor. The Shine Pit will continue operating under its existing permit and existing Stormwater Pollution Prevention Plan and Erosion Sediment Control Plan (FHM 1999).

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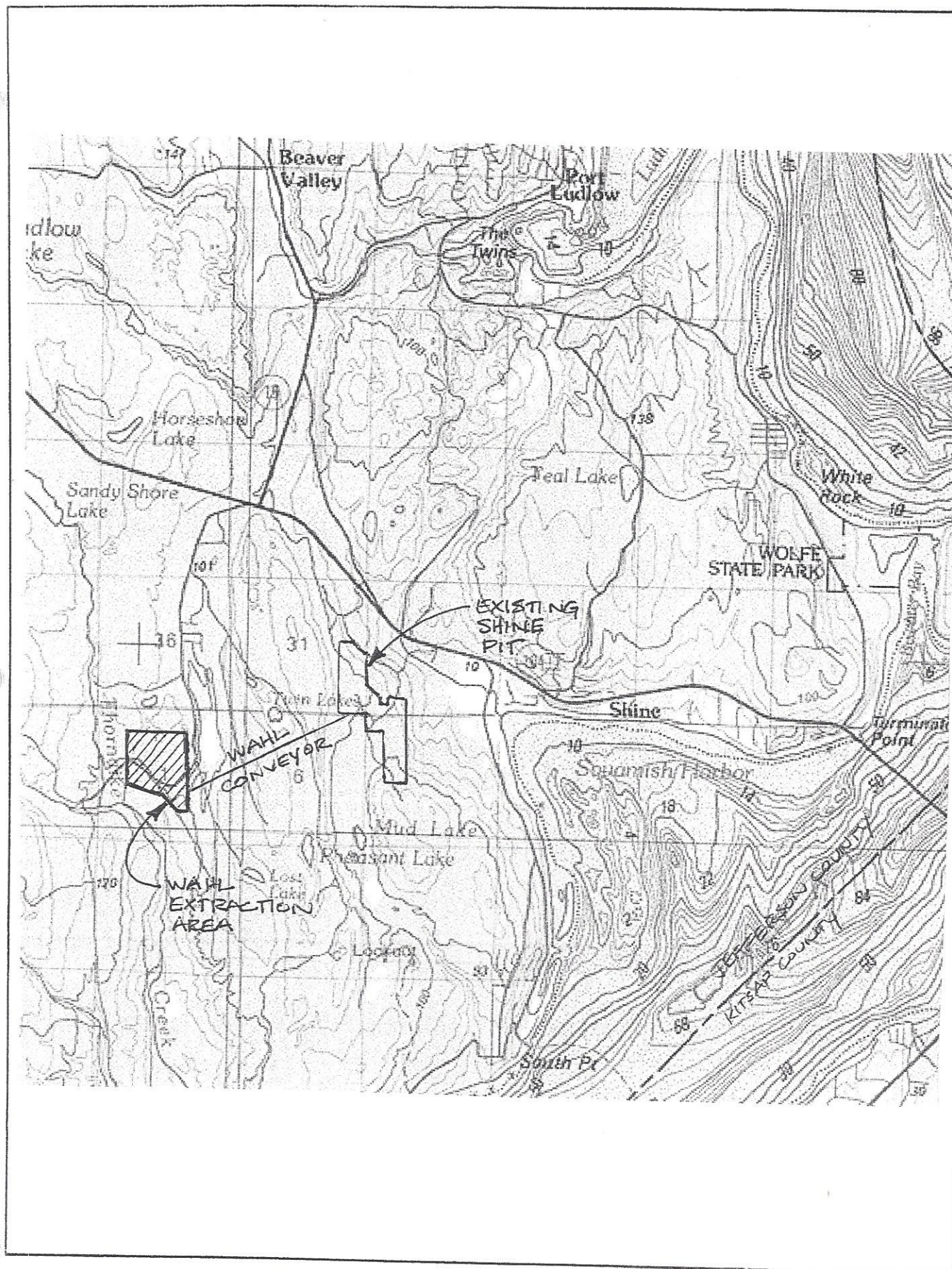


FIGURE 1 - VICINITY MAP