



WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**

**COUNTY OR MUNICIPALITY
APPROVAL FOR
SURFACE MINING
(Form SM-6)**

Washington Geological Survey

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NAME OF COMPANY OR INDIVIDUAL APPLICANT(S) <small>Same as name of the exploration permit holder. (Type or print in ink.)</small> Ferndale Ready Mix & Gravel		TOTAL ACREAGE AND DEPTH OF PERMIT AREA <small>(Include all acreage to be disturbed by mining, setbacks, and buffers, and associated activities during the life of the mine.) (See SM-8A.)</small> Total area permitted will be <u>11.55</u> acres Maximum vertical depth below pre-mining topographic grade is <u>40</u> feet Maximum depth of excavated mine floor is <u>60</u> feet relative to mean sea level																																
MAILING ADDRESS 144 River Road Lynden, WA 98264 Telephone 206-678-3131		COUNTY <u>Whatcom</u> No attachments will be accepted. Legal description of permit area: <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">1/4</th> <th style="width: 15%;">1/4</th> <th style="width: 15%;">Section</th> <th style="width: 15%;">Township</th> <th style="width: 15%;">Range</th> </tr> </thead> <tbody> <tr> <td></td> <td style="text-align: center;">NE</td> <td style="text-align: center;">11</td> <td style="text-align: center;">39</td> <td style="text-align: center;">03E</td> </tr> <tr> <td></td> <td style="text-align: center;">NW</td> <td style="text-align: center;">11</td> <td style="text-align: center;">39</td> <td style="text-align: center;">03E</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			1/4	1/4	Section	Township	Range		NE	11	39	03E		NW	11	39	03E															
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Proposed subsequent use of site upon completion of reclamation Open space																																		
Signature of company representative or individual applicant(s) 		Name and title of company representative (please print) Keith Korthuis, General Manager		Date signed March 5, 2019																														
TO BE COMPLETED BY THE APPROPRIATE COUNTY OR MUNICIPALITY																																		
Please answer the following questions 'yes' or 'no'.																																		
1. Has the proposed surface mine been approved under local zoning and land-use regulations?				<table border="1" style="width: 20px; height: 20px;"> <tr><td style="font-size: x-small;">Yes</td><td style="font-size: x-small;">No</td></tr> <tr><td style="text-align: center;">X</td><td> </td></tr> </table>	Yes	No	X																											
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X																																		
2. Is the proposed subsequent use of the land after reclamation consistent with the local land-use plan/designation?				<table border="1" style="width: 20px; height: 20px;"> <tr><td style="font-size: x-small;">Yes</td><td style="font-size: x-small;">No</td></tr> <tr><td style="text-align: center;">X</td><td> </td></tr> </table>	Yes	No	X																											
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X																																		
When complete, return this form to the Department of Natural Resources.																																		
Name of planning director or administrative official (please print) Andy Wiger, L.E.G.		Address Whatcom County Planning & Development 5280 Northwest Drive Bellingham, WA 98226																																
Signature 		Title (please print) Surface Mining Administrator																																
Telephone 360-778-5945	Date 3/26/19	DNR Reclamation Permit No. FOR DEPARTMENT USE ONLY.																																



WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**

**APPLICATION FOR
RECLAMATION PERMIT AND PLAN
(Form SM-8A)**

Check appropriate box(es): new permit revision of existing permit transfer of permit expansion

NOTE: Do not attempt to complete this form until you have carefully read "Instructions for Form SM-8A".

1. NAME OF APPLICANT/PERMIT HOLDER(S) Ferndale Ready Mix & Gravel, Inc.			
2. MAILING ADDRESS 144 River Road Lynden, WA 98264			
3. Telephone (206) 678-3131		Email kurt.siegfried@lehighhanson.com	
4. NAME OF MINE Vellema			
5. Street address and milepost of surface mine 1861 East Pole Road Everson, WA 98247			
6. Distance (miles) 2	7. Direction from SW	8. Nearest community Everson	
9. COUNTY Whatcom No attachments will be accepted. Legal Description of permit area:			
1/4	Section	Township	Range
NE	11	39	03E
NW	11	39	03E
10. Do you or any person, partnership, or corporation associated with you now hold, or have you held, a surface mining operating or reclamation permit? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If you answered yes to the above, please list:			
11. Are all of these mines now in compliance with RCW 78.44, WAC 332-18, and conditions of the permits? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no Have you ever had a surface mine operating or reclamation permit revoked? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no Have you ever had a reclamation security forfeited? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If you answered yes to either of the above, give permit number(s):			

12. TOTAL ACREAGE OF PERMIT AREA APPLIED FOR: (Include all acreage to be permitted. See Form SM-6.) <u>11.55</u> acres	
13. Total disturbed acreage (Include all acreage to be disturbed by mining and reclamation during the life of the mine.) Total area to be disturbed: <u>11</u> acres. Area to be disturbed in next 36 months: <u>11</u> acres. This includes approximately 7.5 acres of open water to be backfilled.	
14. Maximum vertical depth (thickness) mined below pre-mining topographic grade will be <u>40</u> feet.	
15. Lowest elevation of excavated mine will be <u>60</u> feet relative to mean sea level. Highest elevation of excavated mine will be <u>96</u> feet relative to mean sea level.	
16. Type of proposed or existing mine: <input checked="" type="checkbox"/> pit <input type="checkbox"/> quarry	
17. Material(s) to be mined: <input checked="" type="checkbox"/> sand and gravel <input type="checkbox"/> rock or stone <input type="checkbox"/> clay <input type="checkbox"/> metal <input type="checkbox"/> limestone <input type="checkbox"/> silica <input type="checkbox"/> other _____	
18. Deposit type: <input checked="" type="checkbox"/> glacial <input type="checkbox"/> river floodplain (alluvial) <input type="checkbox"/> river channel deposits <input type="checkbox"/> talus <input type="checkbox"/> bedrock <input type="checkbox"/> lode <input type="checkbox"/> other _____	
19. Expected start date of mining: Mining complete	20. Estimated number of years: N/A
21. Total quantity to be mined over life of mine (estimated): 500,000 <input checked="" type="checkbox"/> tons or <input type="checkbox"/> cu yds	22. Estimated annual production: N/A <input type="checkbox"/> tons or <input type="checkbox"/> cu yds
23. Subsequent land use: <input type="checkbox"/> industrial <input type="checkbox"/> commercial <input type="checkbox"/> residential <input type="checkbox"/> agricultural <input type="checkbox"/> forestry <input type="checkbox"/> wetlands and lakes <input checked="" type="checkbox"/> other Open Space County or Municipality Approval for Surface Mining (Form SM-6) attached? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
24. Reclaimed elevation of floor of mine: <u>110'</u> feet relative to mean sea level Reclaimed elevation is shown on cross sections? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
25. SEPA Checklist required? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
26. Application fee for a new reclamation permit is herewith attached? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

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APPLICATION FOR RECLAMATION PERMIT AND PLAN

22. SEGMENTAL RECLAMATION	
Permit area has been divided into segments for mining and a mining schedule has been developed? If no, explain: Historical operations mined permit area as one segment. Mining complete.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Permit area has been divided into segments for reclamation and a reclamation schedule has been developed? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
23. SITE PREPARATION	
23A. Saving Topsoil, Subsoil, and Overburden for Reclamation	
Thickness of topsoil is <u>N/A</u> feet Thickness of subsoil is <u>N/A</u> feet Depth to bedrock is <u>N/A</u> feet Total volume of topsoil is <u>N/A</u> cubic yards Total volume of subsoil is <u>N/A</u> cubic yards Volume of stored topsoil/subsoil is <u>N/A</u> cubic yards and will require <u>N/A</u> acres for storage.	
Storage areas are shown on maps and will be marked on the ground with permanent boundary markers? Topsoil will be salvaged?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no, explain: Topsoil has not historically been salvaged, minor quantities of top and subsoil exist as berm features and will be used to supplement final reclamation.	
Topsoil and overburden will be moved to reclaim an adjacent depleted segment? If no, explain: Topsoil and subsoil previously used as berms will be moved into adjacent areas.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Before materials are moved, vegetation will be cleared and drainage planned for soil storage areas? If no, explain: Soil storage areas will not be needed. Imported reclamation material will be placed directly into areas needing fill.	
Soil storage areas will be stabilized with vegetation to prevent erosion if materials will be stored for more than one season? If no, explain: N/A. Soil storage areas are not anticipated for this site, imported soils will be placed directly into final locations.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
23B. Permit and Disturbed Area Boundaries	
Boundary of the permit area will be marked on the ground with permanent boundary markers? Explain boundary markers: Metal posts and stakes are being used to mark boundaries.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
23C. Setbacks Screens and Buffers	
Are Screens required and are shown on maps? The reclamation setback for this site will be <u>varies</u> feet wide. 50' to no setback with adjacent mines.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Is a permanent, undisturbed buffer planned for this site? If no, explain: There are no buffers planned for this site.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Setbacks and buffers are shown on maps and have been marked on the ground with permanent boundary markers? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
23D. Buffers to Protect Streams and Flood Plains	
Will the site include a stream or flood plain? If yes, see "Additional Requirements for Mines in Flood Plains" in "Instructions for SM-8A". If no, skip to 23E.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
A stream buffer of at least 200 feet has been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes <input type="checkbox"/> no
A buffer of at least 200 feet from the 100-year flood plain has been marked on the ground with permanent boundary markers? If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
Copy of Shoreline Permit from local government or the Department of Ecology is attached?	<input type="checkbox"/> yes <input type="checkbox"/> no
Hydraulic Project Approval from the Department of Fish and Wildlife is attached?	<input type="checkbox"/> yes <input type="checkbox"/> no

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23E. Conservation Buffers	
Are there any conservation buffers?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If no, skip to 23F	
Conservation buffers will be established for the following purpose(s): <i>(Check all that apply)</i> <input type="checkbox"/> unstable slopes <input type="checkbox"/> wildlife habitat <input type="checkbox"/> water quality <input type="checkbox"/> other Describe the nature and configuration of the conservation buffer(s):	
Conservation buffers are shown on maps and have been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes <input type="checkbox"/> no
23F. Ground Water	
High water table depth is <u>95</u> feet <input checked="" type="checkbox"/> relative to mean sea level, <input type="checkbox"/> below original surface, or <input type="checkbox"/> unknown. Low water table depth is <u>85</u> feet <input checked="" type="checkbox"/> relative to mean sea level, <input type="checkbox"/> below original surface, or <input type="checkbox"/> unknown. Annual fluctuation of water table is from <u>95</u> feet in <u>Spring</u> to <u>85</u> feet in <u>Fall</u> .	
Are well logs attached?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
The shallowest aquifer is <input type="checkbox"/> confined <input checked="" type="checkbox"/> unconfined	
The site will be mined: <input checked="" type="checkbox"/> wet <input type="checkbox"/> dry <input type="checkbox"/> both	
Describe mining method: Site historically mined using excavators.	
The site is in a: <input type="checkbox"/> critical aquifer recharge area <input type="checkbox"/> sole source aquifer <input type="checkbox"/> public water supply watershed <input type="checkbox"/> wellhead protection area <input type="checkbox"/> special protection area <input type="checkbox"/> designated aquifer protection area <i>If checked above, see "Additional Requirements for Mines in Hydrologically Sensitive Areas" in "Instructions for SM-8A".</i>	
Ground water study attached?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<i>If no, explain: Wet mining allowed under current permit conditions, ground water studies not required.</i>	
23G. Archeology	
Are archeological/cultural resource sites present?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If yes, describe how you will protect these resources:	
24. MINING PRACTICES TO FACILITATE RECLAMATION	
24A. Soil Replacement	
Topsoil and (or) subsoil will be restored?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If "no", explain:	
Subsoil will be replaced to an approximate depth of <u>29.0</u> feet on the pit floor and a depth of <u>5.0</u> feet on slopes. Topsoil will be replaced to an approximate depth of <u>1.0</u> feet on the pit floor and a depth of <u>1.0</u> feet on slopes.	
If topsoil is in short supply, it will be strategically placed in depressions and low areas in adequate thickness to conserve moisture and promote revegetation?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no, explain:	
Topsoil will be moved when conditions are not overly wet or dry?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no, explain:	
Topsoil will be restored to promote effective revegetation and to stabilize slopes and mine floor?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If "no", explain:	
Topsoil will be replaced with equipment that will minimize compaction, or it will be plowed, disked, or ripped following placement?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no, explain:	
Topsoil will be immediately stabilized with grasses and legumes to prevent loss by erosion, slumping, or crusting?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If no, explain:	

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Segmental topsoil removal and replacement is shown on maps? If no, explain:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Topsoil will be imported? If yes, describe source. Topsoil and subsoil will be imported from construction sites throughout Whatcom County. Estimated volume is <u>350,000 to 400,000</u> cubic yards.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Synthetic topsoil made from compost, biosolids, or other amendments will be used and (or) made on site to supplement existing topsoil?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Materials such as till, loess, and (or) silt are available on site that could be used to supplement topsoil for reclamation. If yes, explain:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Silt from settling ponds or a filter press will be used for reclamation?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Settling pond clay slurries will be pumped or hauled to other segments for reclamation? If yes, explain:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
24B. Removal of Vegetation	
Vegetation will be removed sequentially from areas to be mined to prevent unnecessary erosion? If no, explain: N/A. Vegetation historically removed as mining advanced.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Small trees and other transplantable vegetation will be salvaged for use in revegetating other segments? If yes, give details. If no, explain: Vegetation historically removed and not salvaged.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Wood and other organic debris will be: <input type="checkbox"/> recycled <input checked="" type="checkbox"/> removed from site <input checked="" type="checkbox"/> chipped <input type="checkbox"/> burned <input type="checkbox"/> buried <input type="checkbox"/> used to synthesize topsoil or mulch <input type="checkbox"/> other (<i>explain</i>)	
Solid waste disposal, burning, and land use permits are attached?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Some coarse wood (logs, stumps) and other large debris will be salvaged for fish and wildlife habitats? If yes, give details. If no, explain: Site is largely void of coarse wood.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
24C. Stormwater and Erosion control for Reclamation	
Pit floor will slope at gentle angles toward highwall, sediment retention pond, or proper drainage? If yes, give details. If no, explain: The newly constructed and elevated pit floor will direct drainage to the north. See reclamation figures.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Revegetation, sheeting, and (or) matting will be used to protect areas susceptible to erosion? If yes, give details. If no, explain: All reclaimed surfaces will be revegetated with an approved erosion control mixture.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Water control systems used during segmental reclamation will:	
Divert clean water around pit?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Trap sediment-laden runoff before it enters a stream?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Be established to prevent erosion of setbacks and neighboring properties?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Be removed or reclaimed?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If any answers are no, explain:	
Stormwater system design will be capable of carrying the peak flow of the 25-year, 24-hour precipitation event? (<i>Data are available at the National Oceanic And Atmospheric Administration (NOAA)</i>)	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes, are calculations attached? If yes, give details. If no, explain: See attached 2019 Memo, Wilson Engineering.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Natural and other drainage channels will be kept free of equipment, wastes, stockpiles, and overburden? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

APPLICATION FOR RECLAMATION PERMIT AND PLAN

25. RECLAMATION TOPOGRAPHY

25A. Final Slopes

Final slopes will be created using the cut-and-fill method? yes no

Explain procedure to be used: **Slopes greater than 2H:1V will be backfilled using on-site and imported materials. Underwater slopes will be eliminated through backfill activities.**

Slopes will be created by mining to the final slope using the cut method? yes no

Explain procedure to be used: **Slopes historically created using the cut and fill method.**

Slopes will vary in steepness? yes no

If no, explain:

Slopes will have a sinuous appearance in both profile and plan view? yes no

If no, explain:

Large rectilinear (that is, right angle, or straight, planar) areas will be eliminated? yes no

If no, explain: **Subsequent use is benefited by large rectilinear areas.**

Where reasonable, tracks of the final equipment pass will be preserved and oriented to trap moisture, soil, and seeds, and to inhibit erosion? yes no

If no, explain:

25B. Slope Requirements for Pits and Overburden/Waste Rock Dumps (non-saleable products)

If the mine is a quarry or in hard rock, skip to Quarry section (25C).

Slopes will vary between 2 and 3 feet horizontal to 1 foot vertical or flatter, except in limited areas where steeper slopes are necessary to create sinuous topography and control drainage? yes no

If no, explain:

For pits, slopes will not exceed 2 feet horizontal to 1 foot vertical except as necessary to blend with adjacent natural slopes? yes no

Give details: **Slope are not anticipated to exceed 2H:1V.**

Review "Additional Requirements for Mines with Steep or Potentially Unstable Slopes" in "Instructions for SM-8A".

Slope stability analysis required? yes no

If yes, attach analysis.

25C. Slope Requirements for Quarries and Hardrock Metal Mines

If mine is a pit in unconsolidated materials covered by Section 25B, go to Section 25D

Check the appropriate box(es)

- Slopes will not exceed 2 feet horizontal to 1 foot vertical.
- Slopes steeper than 1 foot horizontal to 1 foot vertical are an acceptable subsequent land use as confirmed on Form SM-6.
- Hazardous slopes or cliffs are indigenous to the immediate area and already present a potential threat to human life. Photo and maps attached to document presence of cliffs.
- Geologic or topographic characteristics of the site preclude slopes being reclaimed at a flatter angle and are an acceptable subsequent land use as confirmed on Form SM-6.

Review "Additional Requirements for Mines with Steep or Potentially Unstable Slopes" in "Instructions for SM-8A".

Slope stability analysis required? yes no

If yes, attach analysis.

Measures will be taken to limit access to the top and bottom of hazardous slopes? yes no

Describe measures, or if no, explain:

Selective blasting will be used to remove benches and walls and to create chutes, buttresses, spurs, scree slopes, and rough cliff faces that appear natural? yes no

Blasting plan attached? yes no

If no, explain:

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Reclamation blasting will be used to reduce the entire highwall to a scree or rubble slope less than 2 feet horizontal to 1 foot vertical?	<input type="checkbox"/> yes	<input type="checkbox"/> no
Blasting plan is attached?	<input type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Access to benches will be maintained for reclamation blasting?	<input type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Small portions of benches will be left to provide habitat for raptors and other cliff-dwelling birds?	<input type="checkbox"/> yes	<input type="checkbox"/> no
25D. Backfilling		
The site will require backfilling?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, skip to 25E. Maximum depth of backfilling is 30 feet.		
Backfill will be <input type="checkbox"/> onsite materials <input type="checkbox"/> imported materials <input checked="" type="checkbox"/> both	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Provide a written screening method that ensures importation of acceptable soil for reclamation.		
Backfilling plan is attached?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain: See Geotechnical Engineering Evaluation, Geotest Services, Inc.		
Backfill stockpiles are shown on maps and will be marked on the ground with markers?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
All grading/backfilling will be done with non-noxious, non-combustible, and relatively incompactible solids?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Backfill will require compaction?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain: Backfilling of perimeter slopes will require compaction through track-walking of equipment. Backfilled materials to be placed within the water table will receive some compactive effort through placement of final upper lifts. See Geotechnical Engineering Evaluation, Geotest Services, Inc.		
Will you be backfilling to create slopes?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Is slope stability analysis attached?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain. Stability analysis included for containment berm.		
25E. Mine Floors		
Flat areas will be formed into gently rolling mounds?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes, give details. If no, explain: Subsequent use does not benefit from rolling mounds.		
Mine floor will be gently graded into sinuous drainage channels to preclude sheetwash erosion during intense precipitation?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If yes, give details. If no, explain: Drainage swales will be strategically located to prevent sheetwash.		
Mine floor and other compacted areas will be bulldozed, plowed, ripped, or blasted to foster revegetation?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If yes, give details. If no, explain: The mine floor will be ripped to foster revegetation.		
25F. Lakes, Ponds, and Wetlands		
Is water currently present in the area or will the mining penetrate the water table?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, go to Section 25G.		
Reclaimed areas below the permanent low water table in soil, sand, gravel, and other unconsolidated material will have a slope no steeper than 1.5 feet horizontal to 1 foot vertical?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If yes, give details. If no, explain: Most underwater slopes will be eliminated through backfilling.		
If not already present, soils, silts, and clay-bearing material will be placed below water level to enhance revegetation?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes, give details. If no, explain: N/A		
Some parts of pond and lake banks will be shaped so that a person can escape from the water?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
N/A		

APPLICATION FOR RECLAMATION PERMIT AND PLAN

Armored spillways or other measures to prevent undesirable overflow or seepage will be provided to stabilize bodies of water and adjacent slopes?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If yes, give details. If no, explain: See attached geotechnical plan for berm construction along southern property boundary.	
Wildlife habitat will be developed, incorporating such measures as:	
Sinuous and irregular shorelines?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Varied water depths?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Shallow areas less than 18 inches deep?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Islands and peninsulas?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Give details: <i>N/A</i>	
Ponds or basins will:	
Be located in stable areas?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Have sufficient volume for expected runoff?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Have an emergency overflow spillway?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Spillways and outfalls will be protected (for example, rock armor) to prevent failure and erosion?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
If any answers are no, explain: <i>N/A</i>	
Proper measures will be taken to prevent seepage from water impoundments that could cause flooding outside the permitted area or adversely affect the stability of impoundment dams or adjacent slopes?	
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
If yes, give details. If no, explain: <i>N/A</i>	
Written approval from other agencies with jurisdiction to regulate impoundment of water is attached?	
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
If no, explain: <i>N/A</i>	
25G. Final Drainage Configuration	
Drainages will be constructed on each reclaimed segment to control surface water, erosion, and siltation?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Result in essentially natural conditions of volume, velocity, and turbidity?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Clean runoff is directed to a safe outlet?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
If yes, give details. If no, explain:	
Are these shown on maps?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
26. SITE CLEANUP AND PREPARATION FOR REVEGETATION	
26A. Dealing with Hazardous Materials	
Hazardous materials are present at the mine site?	
<input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
<i>If no, go to Section 26B</i>	
The final ground surface drains away from any hazardous natural materials?	
<input type="checkbox"/> yes <input type="checkbox"/> no	
If yes, give details. If no, explain:	
Plan for handling hazardous mineral wastes indigenous to the site is attached?	
<input type="checkbox"/> yes <input type="checkbox"/> no	
If no, written approval from all appropriate solid waste regulatory agencies attached?	
<input type="checkbox"/> yes <input type="checkbox"/> no	
26B. Removal of Debris	
All debris (garbage, 'bone piles', treated wood, old mining equipment, etc.) will be removed from the mine site?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
All sheds, scale houses, and other structures will be removed from the site?	
<input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
If either answer is yes, give details. If no, explain: Most of the site has been cleared of equipment, any remaining structures will be removed upon final reclamation.	
27. REVEGETATION	
The mine site is in:	<input type="checkbox"/> eastern Washington Revegetation area is: <input type="checkbox"/> wet <input checked="" type="checkbox"/> dry <input type="checkbox"/> both
<input checked="" type="checkbox"/> western Washington	
The average precipitation is 50" +/- per year.	

APPLICATION FOR RECLAMATION PERMIT AND PLAN

Revegetation will start during the first proper growing season (fall for grasses and legumes, fall or late winter for trees and shrubs) following restoration of mine segments? yes no

If yes, give details. If no, explain:

The site will not be revegetated because:

- It is a rural area with a rainfall exceeding 30 inches annually and erosion will not be a problem (requires approval of DNR).
- Revegetation is inappropriate for the approved subsequent use of this surface mine.

Explain:

27A. Recommended Pioneer Species

In the Sections below, check the species that will be planted at your mine site:

** indicates nitrogen-fixing species*

Western Washington Dry Areas

- | | | | |
|--|--|--|---|
| <input type="checkbox"/> alfalfa* | <input type="checkbox"/> lupine* | <input checked="" type="checkbox"/> clover* | <input checked="" type="checkbox"/> orchard grass |
| <input type="checkbox"/> cereal rye | <input type="checkbox"/> perennial rye | <input type="checkbox"/> colonial bent grass | <input type="checkbox"/> ponderosa pine |
| <input type="checkbox"/> creeping red fescue | <input checked="" type="checkbox"/> red alder* | <input type="checkbox"/> Douglas fir | <input type="checkbox"/> shore pine |
| <input checked="" type="checkbox"/> ground cover | <input type="checkbox"/> shrubs | <input type="checkbox"/> other | |

Western Washington Wet Areas

- | | | | |
|--|--|--|---------------------------------|
| <input type="checkbox"/> birdsfoot trefoil | <input type="checkbox"/> sedges | <input type="checkbox"/> cedar | <input type="checkbox"/> tubers |
| <input type="checkbox"/> cottonwood | <input type="checkbox"/> wetland grasses | <input type="checkbox"/> creeping red fescue | <input type="checkbox"/> willow |
| <input type="checkbox"/> red alder* | <input type="checkbox"/> other | | |

Eastern Washington Dry Areas

- | | | | |
|---|---|-----------------------------------|---|
| <input type="checkbox"/> alder* | <input type="checkbox"/> grasses | <input type="checkbox"/> alfalfa* | <input type="checkbox"/> juniper |
| <input type="checkbox"/> black locust | <input type="checkbox"/> lodgepole pine | <input type="checkbox"/> clover | <input type="checkbox"/> lupine* |
| <input type="checkbox"/> deciduous trees | <input type="checkbox"/> ponderosa pine | <input type="checkbox"/> shrubs | <input type="checkbox"/> deep-rooted ground cover |
| <input type="checkbox"/> diverse evergreens | <input type="checkbox"/> other | | |

Eastern Washington Wet Areas

- | | | | |
|---------------------------------------|-------------------------------------|---------------------------------|---------------------------------|
| <input type="checkbox"/> alder* | <input type="checkbox"/> cottonwood | <input type="checkbox"/> poplar | <input type="checkbox"/> sedges |
| <input type="checkbox"/> serviceberry | <input type="checkbox"/> tubers | <input type="checkbox"/> willow | |
| <input type="checkbox"/> other | | | |

Give planting details (stems/acres of trees and shrubs, see [Forest Practices manual](#); lbs/acre of grass, legume, or forb mixture):

Describe weed control plan:

See narrative

27B. Planting Techniques

Revegetation at this site will require:

- | | | |
|--|---|--|
| Ripping and tilling? | <input checked="" type="checkbox"/> yes | <input type="checkbox"/> no |
| Blasting to create permeability? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
| Mulching? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
| Irrigation? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
| Fertilization? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
| Importation of clay- or humus-bearing soils? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
| Other soil conditioners or amendments? | <input type="checkbox"/> yes | <input checked="" type="checkbox"/> no |
- Give details:

Trees and shrubs will be planted in topsoil or in subsoil amended with generous amounts of organic matter? yes no

If yes, give details. If no, explain: **Any trees or shrubs planted will be planted in topsoil and receive generous amounts of organic matter.**

APPLICATION FOR RECLAMATION PERMIT AND PLAN

Mulch will be piled around the base of trees and shrubs?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
High quality stock will be used?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Trees and shrubs will be planted while they are dormant?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Stock will be properly handled, kept cool and moist, and planted as soon as possible?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Seeds will be covered with topsoil or mulch no deeper than one-half inch?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
If any answers are no, explain:				

28. FINAL CHECKLIST				
All required maps are attached? (<i>See "Instructions for SM-8A" for detailed requirements.</i>)	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
All required cross sections are attached? (<i>See "Instructions for SM-8A" for detailed requirements.</i>)	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Geologic map attached (if required)? (<i>See "Instructions for SM-8A" for detailed requirements.</i>)	<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
All documents submitted have the date, the name and address of the permit holder, and the application number?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Have you completed the SM-6 and has it been signed by the local jurisdiction?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Have you provided the SEPA checklist?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
Have you provided a copy of the SEPA determination (DNS, MDNS, or DS)?	<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
Have you attached photographs (as needed)?	<input type="checkbox"/>	yes	<input checked="" type="checkbox"/>	no
Are additional supplemental studies included?	<input checked="" type="checkbox"/>	yes	<input type="checkbox"/>	no
If yes, check the appropriate box(es) below:				
<input type="checkbox"/> Archeological	<input type="checkbox"/> Geohydrologic	<input type="checkbox"/> Backfill	<input type="checkbox"/> Slope stability	
<input type="checkbox"/> Topsoil	<input type="checkbox"/> Flood plain	<input type="checkbox"/> Conservational	<input type="checkbox"/> Vegetation	
<input checked="" type="checkbox"/> Other Geotechnical Engineering Evaluation for berm and pond backfilling (Geotest Services. Inc.)				
Other permits required? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no				
If yes, check the appropriate box(es) below:				
<input type="checkbox"/> Shoreline Permit	<input type="checkbox"/> Water Discharge Permit	<input type="checkbox"/> Solid Waste Permit		
<input type="checkbox"/> Air Quality Permit	<input checked="" type="checkbox"/> NPDS or General Discharge Permit	<input type="checkbox"/> Hydraulic Project Approval		
<input type="checkbox"/> Special or Conditional Use Permit	<input type="checkbox"/> Other			

APPLICATION FOR RECLAMATION PERMIT AND PLAN

IDENTIFICATION OF LANDOWNER(S)

Identify names and addresses of all landowners. Provide written evidence of landowner approval of the extraction of minerals by surface mining methods and of the reclamation plan and/or provide the signature of all landowners below. If landownership has been severed between surface and mineral rights ownership, identify all affected mineral rights owner(s) and provide their approval. *(Attach signed copies of this page if more than one.)*

Print Name(s):

Ferndale Ready Mix & Gravel

Address(es):

144 River Road
Lynden, WA 98264

APPLICANT ACKNOWLEDGMENT

By signing this application, the applicant acknowledges the following:

- **Application's Information True.** The applicant verifies that all information on this application and reclamation plan is true.
- **Reclamation Plan Contents.** The applicant's reclamation plan consists of this document (SM-8A), SM-6, associated maps, cross sections, reclamation narrative, and other attachments. The department's approval of this application would reflect approval of the applicant's reclamation plan.
- **Applicant/Permit Holder Must Comply.** If the department approves this application, the applicant shall be the permit holder and shall be responsible for compliance with Chapter 78.44 RCW, Chapter 332-18 WAC, the terms and conditions of the permit, and the approved reclamation plan and attachments. *The permit holder shall comply with the permit and may not significantly deviate from the reclamation plan without prior written approval by the department for the proposed change.* Revised permits or modified plans might be necessary following significant deviations.
- **Applicant/Permit Holder Consents to Inspection.** All permitted surface mines are subject to regular inspection. See RCW 78.44.161 and WAC 332-18-050. The applicant verifies that it has authority to consent to department inspections on behalf of itself and the landowner(s). *Applicant authorizes the department to enter and inspect any property covered by this application during any day or time determined necessary by the department to ensure compliance with the Surface Mining Act, Surface Mining Rules, the Reclamation Permit, and the Reclamation Plan.*

APPLICANT Signature of surface mine permit applicant or applicant's company representative 	Name and Title of Company Representative (Please print) Keith Korthuis Area General Manager	Date signed <i>March 5 2019</i>
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LANDOWNER(S)

As landowner, I Keith Korthuis (name) authorize the applicant to extract minerals from my land using surface mining methods and I approve this reclamation plan.

Signature:



Date signed:

March 5, 2019

FOR DEPARTMENTAL USE ONLY

Date accepted	Accepted by:	Title:	Reclamation Permit No.
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Narrative to Support Form SM-8A

Revised Application for Reclamation Permit # 70-011870

RECEIVED

MAR 29 2019

Washington Geological Survey

This narrative has been prepared in support of the Washington State Department of Natural Resources (DNR) Standard Reclamation Plan Form SM-8A. Questions contained within Form SM-8A that cannot be adequately answered on the form, they have been addressed in detail here.

Site Description & Background

Ferndale Ready Mix & Gravel operates a sand and gravel mine under nonconforming use 2.21.640 of the Whatcom County Building and Code Administration. The operation is located approximately 2.0 miles southwest of Everson, WA in Whatcom County. Access to the site is via a gravel entrance along the western boundary south of East Pole Road. The majority of the resource has been depleted and mining activities concluded in 2012. Future activities will be centered on reclaiming the site under DNR Surface Reclamation Permit 70-011870.

The current DNR permit, originally issued to Dick Vellema, covers 11.55 acres. The site has been actively mined since the 1980's and resides within close proximity to other sand & gravel operations within a county designated resource overlay. The 11.55 permit boundary includes a 7.5 acre mined out pit shell (lake) with a pit floor of approximately 80 msl. Remaining acres total 4.0 and reside primarily above the water table and along a western property boundary. The site was historically mined using a combination of front end loaders above water and track mounted excavators within the water table.

This application serves to revise the current DNR reclamation permit to incorporate approximately 400,000 yards clean imported reclamation material. This material will be used to enhance slopes, create new landforms, and bring the site to within close proximity of original grade.

Subsequent use

The sand & gravel mine lies within the Mineral Resource Land Overlay Zone (MRL 1) as outlined by Whatcom County. The original DNR form SM-6 states subsequent use of "Resort Lake" which is acceptable under current zoning (R5A) and land use designation. Final reclamation will support uses consistent with the Rural or Recreation Open Space zoning designations.

Mining and Reclamation

The resource was mined to completion in 2012 and the site has largely been inactive since this time. Approximately 0.5 to 0.6 million tons of sand and gravel were historically extracted throughout the life of the mine. Previous operators did not

salvage topsoil for reclamation, however, minor quantities exist in the form of berms along some property boundaries. This material will be used to augment final reclamation. Topsoil importation may be required, quantities will be assessed near the time reclamation is complete.

There are no mining segments as mining has historically disturbed the entire site. The property is best prepared for its subsequent use in two reclamation phases. Native sands and gravels from a western terrace will be used during the first phase of reclamation to construct the underwater base of a containment berm along the southern permit boundary. The intent of the berm is to confine future backfilled materials to the Ferndale owned 7.5 acre northern lake. Details regarding placement, type of material and construction of the berm can be found in the attached geotechnical document prepared by Geotest Services, Inc. Upon completion of the containment berm clean reclamation materials will be end dumped into the remaining open water lake. End dumping will begin at the southern end of the lake near the containment berm and progress northerly until the site is raised to the planned reclamation grade. Cut slopes along the western boundary will be eliminated during phase 2 backfilling, see attached reclamation figures. The pit floor will be raised to approximately 105' msl and engineered slopes will be created along the north, east, and western permit boundary, the containment berm will comprise the southern boundary. All perimeter slopes will be compacted to the geotechnical engineers requirements and will not be constructed steeper than 2H:1V. See geotechnical report by Geotest Services, Inc.

Once backfilling is completed to final reclamation contours, reclaimed areas will be revegetated with prescribed species during the first fall or winter after completion to stabilize the site. Topsoil was not separated from overburden by previous mine operators and therefore very little was salvaged for future reclamation, any remaining topsoil left in perimeter berms will be used as final dressing. The subsequent use for the site is open space and revegetation for other than erosion control and stabilization of slopes will not be required.

Storm water

Storm water currently either infiltrates to either above water terraces or drains to the open water feature left from previous mining operations. During reclamation filling all storm water will be contained within the existing pond feature.

As reclamation activities near completion the fill terrace will be contoured to allow clean storm water to drain to a proposed infiltration pond along the northwest portion of the site. Drainage patterns, location of proposed infiltration pond and calculations are included with this revision.

Revegetation

All permanent backfilled slopes and terraces will be planted with the erosion control cover. Plantings and seeding will take place in early summer or late fall to avoid heavy rainfall and seeded areas will be covered with a mulch mix to prevent seed redistribution. Invasive species

such as Scotts broom and blackberry will be controlled either mechanically or with the use of herbicide to prohibit their invasion and to allow the planted species to establish.