



WASHINGTON STATE DEPARTMENT OF
Natural Resources

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

NAME OF COMPANY OR INDIVIDUAL APPLICANT(S) <small>Same as name of the exploration permit holder. (Type or print in ink.)</small> Torden Thomsen		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 disturbed will be <u>13</u> acres Maximum vertical depth below pre-mining topographic grade is <u>25</u> feet Maximum depth of excavated mine floor is <u>75</u> feet relative to mean sea level																											
MAILING ADDRESS P. O. Box 8478 Lacey, WA 98509		COUNTY <u>Thurston</u> No attachments will be accepted. Legal description of permit area:																											
Telephone		<table border="1"> <thead> <tr> <th>1/4</th> <th>1/4</th> <th>Section</th> <th>Township</th> <th>Range</th> </tr> </thead> <tbody> <tr> <td>NW</td> <td>NW</td> <td>18</td> <td>18 N</td> <td>01 E</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	NW	NW	18	18 N	01 E															
1/4	1/4	Section	Township	Range																									
NW	NW	18	18 N	01 E																									
Proposed subsequent use of site upon completion of reclamation Commercial Residential (KC of MC Construction Consultants) 5/17/04																													
Signature of company representative or individual applicant(s) 		Name and title of company representative (please print) STEVE YELTER, ADMINISTRATOR		Date signed 5/17/04																									
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? <i>legal nonconforming</i>				<table border="1"> <tr> <th>Yes</th> <th>No</th> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Yes	No		<input checked="" type="checkbox"/>																					
Yes	No																												
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2. Is the proposed subsequent use of the land after reclamation consistent with the local land-use plan/designation?				<table border="1"> <tr> <th>Yes</th> <th>No</th> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td></td> </tr> </table>	Yes	No	<input checked="" type="checkbox"/>																						
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<input checked="" type="checkbox"/>																													
When complete, return this form to the appropriate Department of Natural Resources regional office.																													
Name of planning director or administrative official (please print) Michael E Kain		Address 2000 Lakeridge Dr SW Olympia, WA 98502																											
Signature 																													
Title (please print) Planning Manager																													
Telephone 360-786-5471	Date 5.17.04	FOR DEPARTMENT USE ONLY:		DNR Reclamation Permit No. 70 - 010958																									

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Geology and Earth Resources



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

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AUG 24 2015
Geology and Earth Science

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) Torden Thomsen				
2. MAILING ADDRESS 5219 N Shirley St #100, Tacoma, WA 98407				
3. Telephone 360-456-6307		Email thomsentimber@msn.com		
4. NAME OF MINE Steilacoom Mine				
5. Street address and milepost of surface mine 9520 Steilacoom Rd SE, Olympia WA 98513				
6. Distance (miles) 1.9	7. Direction from West	8. Nearest community Nisqually		
9. COUNTY Thurston No attachments will be accepted. Legal Description of permit area:				
1/4 NW	1/4 NW	Section 18	Township 18	Range 1 East
10. TOTAL ACREAGE OF PERMIT AREA APPLIED FOR: (Include all acreage to be permitted. See Form SM-6.) <u>13</u> acres				
11. 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:				
Permit Number	Active Operation?		Reclamation current/complete?	
	Yes	No	Yes	No
70-01095843	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. 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				
13. 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):				
14. Type of proposed or existing mine: <input checked="" type="checkbox"/> pit <input type="checkbox"/> quarry 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 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"/> unknown <input type="checkbox"/> other				

15. Total disturbed acreage and maximum depth of permit area: (Include all acreage to be disturbed by mining and reclamation during the life of the mine.) Total area to be disturbed: <u>9.78</u> acres. Area to be disturbed in next 36 months: <u>7.48</u> acres. Maximum vertical depth (thickness) mined below pre-mining topographic grade will be <u>25</u> feet. Lowest elevation of excavated mine will be <u>215</u> in the northern portion feet relative to mean sea level. Highest elevation of excavated mine will be <u>245'</u> in the southern portion feet relative to mean sea level.	
16. Expected start date of mining: Initially permitted in 1975. Reclamation to begin upon approval of this revised permit application.	17. Estimated number of years: 5 years from 2016
18. Total quantity to be mined over life of mine (estimated): 100,000 (historically) <input type="checkbox"/> tons or <input checked="" type="checkbox"/> cu yds	19. Estimated annual production: 2,500 (historically) <input type="checkbox"/> tons or <input type="checkbox"/> cu yds
20. Subsequent land use: <input type="checkbox"/> industrial <input type="checkbox"/> commercial <input checked="" type="checkbox"/> residential <input type="checkbox"/> agricultural <input type="checkbox"/> forestry <input type="checkbox"/> wetlands and lakes <input type="checkbox"/> other Reclaimed elevation of floor of mine: <u>245 feet at the southern boundary, 225 feet at the northern boundary, flat grade to match east west boundary elevations</u> feet relative to mean sea level Reclaimed elevation is shown on cross sections? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Subsequent land use is compatible with County or Municipal comprehensive plan? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no County or Municipality Approval for Surface Mining (Form SM-6) attached? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no SEPA Checklist required? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If any answers are no, explain:	
21. Application fee for a new reclamation permit is herewith attached? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	

APPLICATION FOR RECLAMATION PERMIT

22. SEGMENTAL RECLAMATION		
Permit area has been divided into segments for mining and a mining schedule has been developed?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Permit area has been divided into segments for reclamation and a reclamation schedule has been developed?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
23. SITE PREPARATION		
23A. Permit and Disturbed Area Boundaries		
Boundary of the permit area has been marked on the ground with permanent boundary markers?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Explain boundary markers:		
23B. Saving Topsoil, Subsoil, and Overburden for Reclamation		
Thickness of topsoil is <u>~2</u> feet	Thickness of subsoil is <u>~1</u> foot	Depth to bedrock is <u>>mining depth of 25</u> feet
Total volume of topsoil is <u>~600,000</u> cubic yards	Total volume of subsoil is <u>~300,000</u> cubic yards	
Volume of stored topsoil/subsoil is <u>900,000</u> cubic yards and will require <u>3</u> acres for storage.		
Storage areas are shown on maps and have been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
Topsoil will be salvaged?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain: Currently in berms surrounding the pit		
Topsoil and overburden will be moved to reclaim an adjacent depleted segment?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Before materials are moved, vegetation will be cleared and drainage planned for soil storage areas?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
Soil storage areas will be stabilized with vegetation to prevent erosion if materials will be stored for more than one season?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain:		
23C. Setbacks and Screens		
The setback for this site will be <u>(setbacks are) approximately 10 feet wide on the east and west, and 50 feet wide on the north and south.</u>		
Is a permanent, undisturbed buffer planned for this site?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If no, explain: Buffers are existing on all sides. East and West buffers were reduced due to adjacent development. The proposed action will reclaim the entire site.		
Setbacks are shown on maps and have been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If no, explain: All clearing is complete and topsoil berms are existing and visible in topographical map.		
Does this site have a backfilling plan that addresses the protection of adjacent property and how the final, stable slopes are to be achieved?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
If no, explain: See Reclamation Plan Engineered Backfill Design		
23D. Buffers to Protect Streams and Flood Plains		
A stream buffer of at least 200 feet has been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If yes, see "Additional Requirements for Mines in Flood Plains" in "Instructions for SM-8A" .		
A buffer of at least 200 feet from the 100-year flood plain has been marked on the ground with permanent boundary markers?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
If no, explain: Sit is not within 200 feet of the 100-year flood plain.		
Copy of Shoreline Permit from local government or the Department of Ecology is attached?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
Hydraulic Project Approval from the Department of Fish and Wildlife is attached?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no

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23E. Conservation Buffers	
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 setbacks are shown on maps and have been marked on the ground with permanent boundary markers? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	
23F. Ground Water	
High water table depth is _____ feet <input type="checkbox"/> relative to mean sea level, <input type="checkbox"/> below original surface, or <input type="checkbox"/> unknown. Low water table depth is _____ feet <input 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 _____ feet on _____ to _____ feet on _____. Direction of ground water flow: _____	
Are well logs attached? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
Is the aquifer perched? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no	
The shallowest aquifer is <input type="checkbox"/> confined <input checked="" type="checkbox"/> unconfined?	
The site will be mined: <input type="checkbox"/> wet <input checked="" type="checkbox"/> dry <input type="checkbox"/> both Describe mining method: Excavation from the surface	
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	
Ground water study attached? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <i>If yes, see "Additional Requirements for Mines in Hydrologically Sensitive Areas" in "Instructions for SM-8A". If no, explain:</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 will be saved? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If no, explain:	
Up to 4 feet of topsoil and (or) subsoil will be restored? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If "yes" give details. If "no", explain:	
Topsoil will be restored and seedbeds prepared as necessary to promote effective revegetation and to stabilize slopes and mine floor? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If "yes" give details. If "no", explain: All final grades that will not be developed or disturbed within one year will be seeded.	
Subsoil will be replaced to an approximate depth of <u>0</u> feet on the pit floor and a depth of <u>0</u> feet on slopes. Topsoil will be replaced to an approximate depth of at least <1 foot on the pit floor and a depth of at least <1 foot on slopes.	
Topsoil will be distributed evenly over the site? <input checked="" type="checkbox"/> yes <input type="checkbox"/> no If no, explain:	
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 type="checkbox"/> yes <input checked="" type="checkbox"/> no If no, explain: No depressions or low areas are anticipated. Final grade will match surrounding elevations with a uniform slope to support subsequent use.	

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Topsoil will be moved when conditions are not overly wet or dry? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Topsoil will be imported? If yes, describe source. If no, explain: Topsoil berms on site will be used.	<input type="checkbox"/> yes <input checked="" 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 type="checkbox"/> yes <input checked="" 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 checked="" type="checkbox"/> yes <input 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
Topsoil will be replaced with equipment that will minimize compaction, or it will be plowed, disked, or ripped following placement? If no, explain: Dozer will be used to grade soil and will track walk perpendicular to the slope to minimize sheet flow erosion and promote grass growth.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Topsoil will be immediately stabilized with grasses and legumes to prevent loss by erosion, slumping, or crusting? If no, explain: In all areas that will not be redeveloped within one year.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Topsoil stockpile areas are shown on maps and will be marked on the ground with permanent boundary markers to protect from loss? If no, explain: All topsoil to be utilized exists in surrounding berms and is shown on the Topographic map.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Segmental topsoil removal and replacement is shown on maps? If no, explain: All topsoil to be utilized exists in surrounding berms and is shown on the Topographic map.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Topsoil salvage and replacement plan included? If no, explain: All topsoil to be utilized exists in surrounding berms and is shown on the Topographic map.	<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:	<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:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Wood and other organic debris will be: <input type="checkbox"/> recycled <input type="checkbox"/> removed from site <input type="checkbox"/> chipped <input type="checkbox"/> burned <input type="checkbox"/> buried <input type="checkbox"/> used to synthesize topsoil or mulch <input checked="" type="checkbox"/> other (explain) No wood observed on site. Grasses and brush will be cut/mowed.	
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: Not observed on site	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
24C. 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:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

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Revegetation, sheeting, and (or) matting will be used to protect areas susceptible to erosion? If yes, give details. If no, explain: During reclamation any erosion will be contained within the pit. Final reclamation grade will be less than or equal to 4%, and revegetated.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Water control systems used for erosion control during segmental reclamation will: Divert clean water around pit? Trap sediment-laden runoff before it enters a stream? Result in essentially natural conditions of volume, velocity, and turbidity? Handle a 25-year, 24-hour peak event? <i>(Have you attached calculation?)</i> Be removed or reclaimed?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
If any answers are no, explain:	
Will any water control systems be removed upon final reclamation? If yes, explain:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Water control measure will be established to prevent erosion of setbacks and neighboring properties? If yes, give details. If no, explain: Existing sidewalls and berms will be used to contain surface water within the pit. Final reclamation stormwater facilities will manage all stormwater.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Storm-water conveyance ditches and channels will be lined with vegetation or riprap? If yes, give details. If no, explain: Seeded.	<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
25. RECLAMATION TOPOGRAPHY	
25A. Final Slopes	
Final slopes will be created using the cut-and-fill method? Explain procedure to be used:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Slopes will be created by mining to the final slope using the cut method? Explain procedure to be used:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Slopes will vary in steepness? If no, explain: Uniform gentle slope for subsequent use as residential development.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Slopes will have a sinuous appearance in both profile and plan view? If no, explain: Uniform gentle slope for subsequent use as residential development.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Large rectilinear (that is, right angle, or straight, planar) areas will be eliminated? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Where reasonable, tracks of the final equipment pass will be preserved and oriented to trap moisture, soil, and seeds, and to inhibit erosion? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
25B. Slope Requirements for Pits and Overburden/Waste Rock Dumps (non-saleable products)	
<i>If the mine is a quarry or in hard rock, skip to Quarry section (25C).</i>	
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? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
For pits, slopes will not exceed 2 feet horizontal to 1 foot vertical except as necessary to blend with adjacent natural slopes? Give details:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

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Slope stability analysis required? <i>If yes, see "Additional Requirements for Mines with Steep or Potentially Unstable Slopes" in "Instructions for SM-8A".</i> Slope stability analysis provided by _____	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
25C. Slope Requirements for Quarries and Hardrock Metal Mines <i>If mine is a pit in unconsolidated materials covered by Section 25B, go to Section 25D</i>	
Check the appropriate box(es) <input type="checkbox"/> Slopes will not exceed 2 feet horizontal to 1 foot vertical. <input type="checkbox"/> Slopes steeper than 1 foot horizontal to 1 foot vertical are an acceptable subsequent land use as confirmed on Form SM-6. <input type="checkbox"/> 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. <input type="checkbox"/> 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.	
Slope stability analysis required? <i>If yes, see "Additional Requirements for Mines with Steep or Potentially Unstable Slopes" in "Instructions for SM-8A".</i> Slope stability analysis provided by _____	<input type="checkbox"/> yes <input type="checkbox"/> no
Measures will be taken to limit access to the top and bottom of hazardous slopes? Describe measures, or if no, explain: _____	<input type="checkbox"/> yes <input type="checkbox"/> no
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? Describe procedures, or if no, explain: _____	<input type="checkbox"/> yes <input type="checkbox"/> no
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? Blasting plan is attached? If no, explain: _____	<input type="checkbox"/> yes <input type="checkbox"/> no
Access to benches will be maintained for reclamation blasting? If no, explain: _____	<input type="checkbox"/> yes <input type="checkbox"/> no
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	
Slopes will require backfilling? Depth of backfilling is up to 25 feet. Slope stability compaction analysis required? Compaction analysis provided by Geotechnical engineer as needed for subsequent residential redevelopment	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Backfilling plan and (or) permits are attached? If no, explain: _____	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Backfilling will be done with overburden material after topsoil has been separated? If no, describe composition and source of backfill material: Local construction with clean excavated material capable of achieving compaction requirements. Explain method of placement of fill: Dump truck and dozer with compaction equipment if necessary to meet Engineered Fill Design requirements	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Locations of stockpiles are shown on maps and will be marked on the ground with permanent boundary markers? Shown in topographic map, but were not marked on the ground.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Will backfill be imported? If yes, give volumes needed to meet reclamation plan: ~90,000 CY	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no

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Areas to be backfilled are shown on maps? If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
All grading/backfilling will be done with clean, inert, non-organic solids? If yes, give details. If no, explain: See Clean Fill Acceptance Plan	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Backfilled slopes will be compacted? If yes, give details. If no, explain: See Engineered Fill Design	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Will you be backfilling into water? If yes, is slope stability analysis attached? If yes, describe method:	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> yes <input type="checkbox"/> no
25E. Mine Floors	
Flat areas will be formed into gently rolling mounds? If yes, give details. If no, explain: Uniform gentle slope for subsequent residential redevelopment	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Mine floor will be gently graded into sinuous drainage channels to preclude sheetwash erosion during intense precipitation? If yes, give details. If no, explain: Sheetwash erosion reduced due to gentle slope, trackwalked surface, and vegetation.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Mine floor and other compacted areas will be bulldozed, plowed, ripped, or blasted to foster revegetation? If yes, give details. If no, explain: Mine floor will be filled to existing grade and surface treatment as described above.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
25F. Lakes, Ponds, and Wetlands	
Is water currently present in the area or will the mining penetrate the water table? If no, go to Section 25G.	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
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? If yes, give details. If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
If not already present, soils, silts, and clay-bearing material will be placed below water level to enhance revegetation? If yes, give details. If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
Some parts of pond and lake banks will be shaped so that a person can escape from the water?	<input type="checkbox"/> yes <input type="checkbox"/> no
Armored spillways or other measures to prevent undesirable overflow or seepage will be provided to stabilize bodies of water and adjacent slopes? If yes, give details. If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
Wildlife habitat will be developed, incorporating such measures as:	
Sinuous and irregular shorelines?	<input type="checkbox"/> yes <input type="checkbox"/> no
Varied water depths?	<input type="checkbox"/> yes <input type="checkbox"/> no
Shallow areas less than 18 inches deep?	<input type="checkbox"/> yes <input type="checkbox"/> no
Islands and peninsulas?	<input type="checkbox"/> yes <input type="checkbox"/> no
Give details:	
Ponds or basins will:	
Be located in stable areas?	<input type="checkbox"/> yes <input type="checkbox"/> no
Have sufficient volume for expected runoff?	<input type="checkbox"/> yes <input type="checkbox"/> no
Have an emergency overflow spillway?	<input type="checkbox"/> yes <input type="checkbox"/> no
Spillways and outfalls will be protected (for example, rock armor) to prevent failure and erosion?	<input type="checkbox"/> yes <input type="checkbox"/> no
If any answers are no, explain:	

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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? If yes, give details. If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
Written approval from other agencies with jurisdiction to regulate impoundment of water is attached? If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
25G. FINAL DRAINAGE CONFIGURATION	
Drainage will be capable of carrying the peak flow of the 25-year, 24-hour precipitation event? (Data are available at DNR Region offices) If yes, are calculations attached? If yes, give details. If no, explain: Calculations attached in Revised Reclamation Permit Application	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Drainages will be constructed on each reclaimed segment to control surface water, erosion, and siltation? Clean runoff is directed to a safe outlet? If either yes, give details. If no, explain: Drainage contained within pit during segmental reclamation, and conveyed to infiltration area post reclamation.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> yes <input checked="" type="checkbox"/> no
Are these shown on maps?	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
The grade of ditches and channels will be constructed to limit erosion and siltation? If yes, give details. If no, explain: Low grade conveyance ditches, seeded with native grasses.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Natural-appearing drainage channels will be established upon reclamation? If yes, give details. If no, explain: See above	<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? If no, go to Section 26B	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
The final ground surface drains away from any hazardous natural materials? If yes, give details. If no, explain:	<input type="checkbox"/> yes <input type="checkbox"/> no
Plan for handling hazardous mineral wastes indigenous to the site is attached? If no, written approval from all appropriate solid waste regulatory agencies attached?	<input type="checkbox"/> yes <input type="checkbox"/> no <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? All sheds, scale houses, and other structures will be removed from the site? If either answer is yes, give details. If no, explain:	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input checked="" type="checkbox"/> yes <input type="checkbox"/> no
27. REVEGETATION	
The mine site is in: <input type="checkbox"/> eastern Washington The mine site is: <input type="checkbox"/> wet <input checked="" type="checkbox"/> dry? <input checked="" type="checkbox"/> western Washington	
The average precipitation is <u>51 inches</u> per year.	
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 slopes? If yes, give details. If no, explain: Seeded as soon as appropriate for vegetation establishment after reclamation.	<input checked="" type="checkbox"/> yes <input type="checkbox"/> no
Test plots will be used to determine optimum vegetation plans?	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no

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The site will not be revegetated because: <input type="checkbox"/> It is a rural area with a rainfall exceeding 30 inches annually and erosion will not be a problem (requires approval of DNR). <input type="checkbox"/> Demonstration plots and areas will be used to show that active revegetation is not necessary. <input type="checkbox"/> Revegetation is inappropriate for the approved subsequent use of this surface mine. Explain: Documentation is attached? <input type="checkbox"/> yes <input type="checkbox"/> no	
27A. Recommended Pioneer Species	
In the Sections below, check the species that will be planted at your mine site: <i>* indicates nitrogen-fixing species</i>	
Western Washington Dry Areas	
<input type="checkbox"/> alfalfa* <input type="checkbox"/> cereal rye <input type="checkbox"/> creeping red fescue <input type="checkbox"/> ground cover	<input type="checkbox"/> lupine* <input type="checkbox"/> perennial rye <input type="checkbox"/> red alder* <input type="checkbox"/> shrubs
<input type="checkbox"/> clover* <input type="checkbox"/> colonial bent grass <input type="checkbox"/> Douglas fir <input type="checkbox"/> other	<input type="checkbox"/> orchard grass <input type="checkbox"/> ponderosa pine <input type="checkbox"/> shore pine
Western Washington Wet Areas	
<input type="checkbox"/> birdsfoot trefoil <input type="checkbox"/> cottonwood <input type="checkbox"/> red alder*	<input type="checkbox"/> sedges <input type="checkbox"/> wetland grasses <input checked="" type="checkbox"/> other Native erosion control grasses to stabilize prior to residential redevelopment.
<input type="checkbox"/> cedar <input type="checkbox"/> creeping red fescue	<input type="checkbox"/> tubers <input type="checkbox"/> willow
Eastern Washington Dry Areas	
<input type="checkbox"/> alder* <input type="checkbox"/> black locust <input type="checkbox"/> deciduous trees <input type="checkbox"/> diverse evergreens	<input type="checkbox"/> grasses <input type="checkbox"/> lodgepole pine <input type="checkbox"/> ponderosa pine <input type="checkbox"/> other
<input type="checkbox"/> alfalfa* <input type="checkbox"/> clover <input type="checkbox"/> shrubs	<input type="checkbox"/> juniper <input type="checkbox"/> lupine* <input type="checkbox"/> deep-rooted ground cover
Eastern Washington Wet Areas	
<input type="checkbox"/> alder* <input type="checkbox"/> serviceberry <input type="checkbox"/> other	<input type="checkbox"/> cottonwood <input type="checkbox"/> tubers
<input type="checkbox"/> poplar <input type="checkbox"/> willow	<input type="checkbox"/> sedges
Give planting details (stems/acres of trees and shrubs, see <u>Forest Practices manual</u> ; lbs/acre of grass, legume, or forb mixture): As recommended by seed manufacture.	
Describe weed control plan: Cover crop	
27B. Planting Techniques	
Revegetation at this site will require:	
Ripping and tilling?	<input type="checkbox"/> yes <input checked="" 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: Topsoil placement and seeding	
Trees and shrubs will be planted in topsoil or in subsoil amended with generous amounts of organic matter? <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, give details. If no, explain: Grasses only due to subsequent use	

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Mulch will be piled around the base of trees and shrubs?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
High quality stock will be used?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
Trees and shrubs will be planted while they are dormant?	<input type="checkbox"/> yes	<input checked="" type="checkbox"/> no
Stock will be properly handled, kept cool and moist, and planted as soon as possible?	<input type="checkbox"/> yes	<input checked="" 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: Grass vegetation only due to subsequent use		
28. FINAL CHECKLIST		
All required maps are attached? (See "Instructions for SM-8A" for detailed requirements.)	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
All required cross sections are attached? (See "Instructions for SM-8A" for detailed requirements.)	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
Geologic map attached (if required)? (See "Instructions for SM-8A" for detailed requirements.)	<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 on every page of the material?	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no
The plan contains predominantly relevant information?	<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?	<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 checked="" type="checkbox"/> Backfill
<input type="checkbox"/> Topsoil	<input type="checkbox"/> Flood plain	<input type="checkbox"/> Slope stability
<input type="checkbox"/> Other	<input type="checkbox"/> Conservational	<input type="checkbox"/> Vegetation
Other permits required? <input type="checkbox"/> yes <input checked="" 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 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

When signed by the applicant and approved by the Department of Natural Resources, this document and the associated maps, cross sections, reclamation narrative, and other attachments will be the approved reclamation plan for this permit that the permit holder must follow. Significant variations from the approved reclamation plan may require that a new plan be submitted to the Department for approval.

The applicant shall be considered as the permit holder for this surface mine and shall be responsible for compliance with Chapter 78.44 RCW, Chapter 332-18 WAC, the approved reclamation plan and attachments, and the conditions of the permit if issued by the Department of Natural Resources.			
I hereby agree to comply with this plan. <i>Signature of applicant or company representative</i>	Name and Title of Company Representative <i>(Please print)</i>	Date signed	
X	KEN THOMPSON, CEO & PRESIDENT	8-23-16	
SURFACE OWNERSHIP Give names, addresses, and signatures of all individuals with possessory interest in land. <i>(Attach signed copies of this page if more than one.)</i>	OWNERSHIP OF RIGHTS TO REMOVE MINERALS BY SURFACE MINING Give names, addresses, and signatures of all individuals with rights. <i>(Attach signed copies of this page if more than one.)</i>		
KEN THOMPSON 5219 NORTH SHIRLEY ST RUSTON, WA 98407	KEN THOMPSON 5219 NORTH SHIRLEY ST. RUSTON, WA 98407		
I verify that the applicant has my permission to mine from my land. <i>Signature of landowner(s)</i>	I verify that the applicant has my permission to mine this land. <i>Signature of rights owner(s)</i>	Date signed	Date signed
X	X	8-23-16	8-23-16
I hereby verify that I have seen and approved this plan. <i>Signature of landowner(s)</i>	I hereby verify that I have seen and approved this plan. <i>Signature of rights owner(s)</i>		
X	X		
X	X		
-----FOR DEPARTMENTAL USE ONLY-----			
Date accepted	Accepted by:	Title:	Reclamation Permit No.
Comments by Department:			

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Geology and Earth Resources

Revised Reclamation Permit Application Narrative

The proposed reclamation activity for the Steilacoom sand and gravel mine includes preparing the mine floor and sidewalls for fill placement, importing, placing, and compacting clean natural rock and soil fill material, constructing and maintaining a temporary stormwater management area, constructing a post-reclamation settling pond and infiltration pond, and final surface preparation to support subsequent use as a residential development. These activities are discussed below and defined in detail in attachments A (DNR SM-8A Form), C (Maps and Cross Sections), D (SEPA Checklist), E (Engineered Fill Design), G (25-year 24-hour Detention Calculations), and H (Clean Fill Acceptance Plant).

Site Preparation

Site preparation earthwork will include removing existing vegetation and deleterious materials such as trash and debris, and stripping sod/topsoil materials.

During site visits, no appreciable amounts of debris or unsuitable soils associated were identified from past site activity. Clearing and stripping will consist of removing the minimal surface and subsurface deleterious materials including sod/topsoil, trees, brush, debris and other unsuitable loose/soft or organic materials. Due to the native subsurface material being primarily rock and gravel, over-excavation of additional unsuitable soil is not expected.

After stripping and before placing structural fill, the small amount of concrete, asphalt, and boulders existing on site shall be buried, and the exposed subgrade will be graded and thoroughly compacted to a firm and unyielding condition. If soft or otherwise unsuitable areas are identified, and cannot be compacted to a stable and uniformly firm condition, the subgrade will be scarified, aerated and recompacted; or the unsuitable soils will be overexcavated and replaced with structural fill.

Fill Placement

All material imported to the site to be used for structural fill will be free of debris and organic material. Imported fill will be placed on an approved subgrade that consists of uniformly firm and unyielding inorganic native soils. Imported fill will be compacted to achieve a minimum of 92 percent of the maximum dry density in the lower portions of the pit, and 95 percent of the maximum dry density within the top 5 feet of final grade. To achieve these densities, imported fill will be placed:

- as close to optimum moisture content as feasible,
- in uniform lift thicknesses based on the material type, not to exceed a loose thickness of about 12 inches,
- to maintain a slope towards the northern boundary line to allow drainage of stormwater,
- and uniformly densified with compaction equipment.

Construction monitoring by a qualified professional will be conducted to determine a replicable compaction process and lift thickness that consistently results in meeting or exceeding the density requirements.

Conclusion

The proposed activities will be initiated as soon as approval from DNR is received and fill materials become available. The owner and their representatives and consultants will maintain records of the proposed activity throughout the reclamation process.