



Board of County Commissioners

September 29, 2023, @ 7:00 PM

By: Kevin Cricchio, AICP, ISA, Senior Planner

Planning & Development Services Department

PL16-0556:

SUBJECT PROPOSAL:

The applicant filed an application for a mining special use permit (PL16-0556) to expand an existing gravel mining operation from 17.78 acres to 53.5 acres. The gravel mining operation will remove approximately 60,000 tons of gravel per year for approximately 60 years, for a total of approximately 3,600,000 tons (2,250,000 cubic yards) and extend to a depth of approximately 50 feet below existing grade. Gravel will be removed from the site by truck and trailer, generating an average of 13 loads per day or 26 truck trips per day. The mining operation will process material onsite with a screen and rock crusher. The site is accessed from Rosario Road on an existing private gravel driveway. No offices or structures are proposed to be built onsite. The subject site is located within the Rural Resource-Natural Resource Land (RRc-NRL) and mineral resource overlay (MRO) zoning/comprehensive plan designated area.

PL16-0556:

PROJECT LOCATION:

Intersection of Rosario Road and Marine Drive, Fidalgo Island; Located in a portion of Section 11, Township 34 North, Range 01 East, Willamette Meridian

SUBJECT PARCELS:

Existing mine: P19108, P19162, & P19165; Expansion to mine: P19158, P90028, P19164, P19155, P19161; Contiguous parcels (same ownership): P19168, & P19163

PL16-0556:

APPLICANT:

Lake Erie Pit 1 LLC
Attn: Bill Wooding
13540 Rosario Road
Anacortes, WA 98221

LANDOWNER:

Pit I LLC
C/O Lake Erie Trucking
13540 Rosario Rd
Anacortes, WA 98221

PL16-0556:

ZONING DISTRICT:

The subject site is located within the Rural Resource-Natural Resource Lands (RRc-NRL) Zoning/Comprehensive Plan Designated Area and designated within the Mineral Resource Overlay.

PL16-0556:

PROJECT CHRONOLOGY:

- On December 2, 2016, the applicant Bill Wooding/Lake Erie Pit LLC submitted to Skagit County's Planning and Development Services Department.
- Planning Department staff deemed the application complete on January 5, 2017. A Notice of Development Application (NODA) was published on February 2, 2017, mailed to neighboring landowners located within 300-feet of the subject parcel(s), and posted onsite.
- After the public comment period ended, the Department requested additional information. After this material was submitted, a SEPA Mitigated Determination of Non-Significance (MDNS) was issued on December 3, 2018.
- The Hearing Examiner conducted an open-record public hearing on August 26, 2020, and October 14, 2020. The Hearing Examiner approved the subject Special Use Permit subject to conditions on November 30, 2020.

PL16-0556:

PROJECT CHRONOLOGY (CONTINUED):

- On appeal, the Board of County Commissioners remanded the matter (Resolution: R20210038, dated 2/23/2021) to the Hearing Examiner to determine if a Geologically Hazardous Site Assessment was needed.
- On March 9, 2021, the Hearing Examiner ordered PDS to direct Wooding to provide such an assessment. After review by PDS another hearing would be held on whether additional conditions would be necessary.
- PDS asked Wooding to prepare a Geologically Hazardous Area Site Assessment and Geologically Hazardous Mitigation Area Plan consistent with Skagit County Code 14.24.420 and 14.24.430 on March 23, 2021.
- On May 27, 2021, PDS reiterated to Wooding that additional information had been requested, that the deadline to provide this information was July 21, 2021, And that failure to provide the information would result in the denial of his application. The requested information was not timely received and the application was denied as a result on July 21, 2021.

PL16-0556:

PROJECT CHRONOLOGY (CONTINUED):

- The applicant appealed this decision. The Hearing Examiner granted the applicant's appeal and ordered that the site assessment be submitted by the end of September 2022.
- On August 12, 2022, the applicant submitted a Geologic Hazard Site Assessment to PDS.
- This Geologic Hazard Site Assessment (and letter from Evergreen Islands responding to the assessment), was forwarded to the Watershed Company (the county's Third-Party Review consultant) for review.
- On January 19, 2023, the Watershed Company provided PDS with their Third-Party Review findings and response to Evergreen Island's letter.

PL16-0556:

PROJECT CHRONOLOGY (CONTINUED):

- On March 31, 2023, Skagit County Planning and Development Services received a revised Third-Party Review and response to Evergreen Island letter. It was revised per Skagit County's request for formatting and clarity reasons. Accordingly, it was a non-substantive revision.
- On June 28, 2023, the Hearing Examiner conducted an open-record public hearing to review the remanded item.
- On July 13, 2023, the Hearing Examiner issued his decision approving the application with an additional five conditions of approval.

PL16-0556:

APPEALS RECEIVED:

APPELLANT 1:

Evergreen Islands (PL23-0363)
PO Box 223
Anacortes, WA 98221

APPELLANT 2:

Sunset Lane Association (PL23-0380)
13136 Sunset Lane
Anacortes, WA 98221

ATTORNEY 1:

Evergreen Islands (PL23-0363)
PO Box 223
Anacortes, WA 98221

ATTORNEY 2:

Sunset Lane Association Board
13136 Sunset Lane
Anacortes, WA 98221

PL16-0556:

APPELLANT - SUNSET LANE ASSOCIATION BOARD:

- The Sunset Lane Association Board take issue with several aspects of this project over the years, including the Hearing Examiner decision to reverse the County's denial for failure to provide additional information. However, that decision was not appealed further and thus is a final decision and not subject to reconsideration as part of this appeal.

PL16-0556:

APPELLANT - EVERGREEN ISLANDS & SUNSET LANE ASSOCIATION BOARD:

- Both Evergreen Islands and the Sunset Lane Association take exception with a number of the conclusions and findings (waterflow, impacts to bluffs, impact to groundwater table, perceived omissions, etc.) of the applicant's Geologic Hazard Site Assessment report. In particular, they assert that the mine will impact water flows and heighten risks of landslides to west and south-west of the mine site. They also do not believe it meets the requirements of the Board of County Commissioners remand order, the former Hearing Examiner's order to PDS following remand, and the letter written by the former Assistant Planning Director to the applicant requesting additional information.

PL16-0556:

BOARD OF COUNTY COMMISSIONERS REMAND:

RESOLUTION # _____

A Resolution Pertaining to the Closed Record Appeal Before the Skagit County Board of Commissioners Of Special Use Permit PL16-0556

WHEREAS, Evergreen Islands (“**Appellant**”) timely filed this closed record appeal to the Board of Skagit County Commissioners (hereinafter, the “**Board**”), pursuant to Skagit County Code (“**SCC**”) 14.06, challenging the Skagit County Hearing Examiner’s Decision approving Special Use Permit PL16-0556 (the “**Permit**”); and

WHEREAS, the Permit authorizes the expansion of an existing 17.78 acre gravel mine located on the west side of Fidalgo Island to an ultimate size of 53.5 acres (hereinafter, the “**Mine**”); and

WHEREAS, County Planning staff did not require a Geologically Hazardous Site Assessment associated with the steep coastal area located to the west/northwest of the Mine, based principally on an inference derived from reports furnished by a professional hydrogeologist on the Applicant’s behalf to the effect that groundwater at the Mine flows to the northeast, toward Lake Erie; and

WHEREAS, the Appellant timely raised concerns before the Hearing Examiner regarding potential landslide risk arising from the potential for increased groundwater migration to the west/northwest, due to the Mine’s expansion and attendant removal of soil and vegetation, which, the Appellant contends, will alter groundwater behavior in the vicinity of the Mine; and

WHEREAS, the Appellant furnished evidence to the Hearing Examiner regarding the presence of springs on the coastal bluff to the northwest of the Mine at an elevation downgradient of the inferred groundwater level, and the testimony of a geologist who opined that the expanded Mine will create an increased landslide risk; and

WHEREAS, the Appellant contends that the coastal bluff area to the west/northwest of the Mine is a geologically hazardous area pursuant to SCC 14.24.410; and

WHEREAS, in light of the foregoing, the Appellant contends on this appeal that the Hearing Examiner erred, in part, by failing to require a Geologically Hazardous Site Assessment pursuant to SCC 14.24.420; and

WHEREAS, pursuant to SCC 14.06.170(10), the Board may take one of the following actions:

- (1) Deny the appeal and affirm the decision of the Hearing Examiner;
- (2) Find the Hearing Examiner’s decision clearly erroneous, adopting its own findings, conclusions and decision based on the record before it; or
- (3) Remand the matter for further consideration by the Hearing Examiner.

NOW, THEREFORE, BE IT RESOLVED:


1. Pursuant to SCC 14.60.170(10)(3), this matter is hereby REMANDED to the Skagit County Hearing Examiner for further consideration of the following matters:
 - Whether the steep area to the west/northwest of the Mine requires the preparation of a Geologically Hazardous Area Site Assessment, consistent with SCC 14.24.400-.420.
 - If so required, directing the Applicant to prepare a Geologically Hazardous Area Site Assessment, all consistent with SCC 14.24.400-.420 and the Hearing Examiner's discretion; and
 - Any additional proceedings as may be necessary to take additional evidence related to the Geologically Hazardous Area Site Assessment, to be managed at the Hearing Examiner's discretion; and
 - The imposition of such additional conditions as may be necessary to mitigate risks identified by the supplemental proceedings hereby ordered, to the extent such risks can be reasonably mitigated.

2. All other issues raised by the Appellant on this appeal are hereby DENIED, and the Hearing Examiner in all other respects is AFFIRMED.


**WITNESS OUR HANDS AND THE OFFICIAL SEAL OF OUR OFFICE this
23rd day of February 2021.**

**BOARD OF COUNTY COMMISSIONERS
SKAGIT COUNTY, WASHINGTON**






Lisa Janicki, Chair

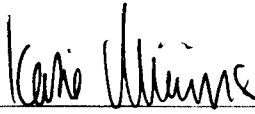


Peter Browning, Commissioner



Ron Wesen, Commissioner

ATTEST:



Clerk of the Board

APPROVED AS TO FORM:



Will Honea, Senior Civil Deputy
Skagit County Prosecutor's Office

PL16-0556:

HEARING EXAMINER ORDER TO PDS:

BEFORE THE SKAGIT COUNTY HEARING EXAMINER

In the Matter of a Special Use Permit)	PL16-0556
To Expand an Existing Gravel Mine)	
)	REFERRAL TO PLANNING
BILL WOODING)	AND DEVELOPMENT SERVICES
LAKE ERIE PIT, LLC)	
Applicant.)	
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On the appeal of Evergreen Islands, the Skagit County Commissioners remanded this matter to the Skagit County Hearing Examiner for further consideration of the following:

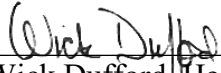
- Whether the steep area to the west northwest of the Mine requires the preparation of a Geologically Hazardous Area Site Assessment, consistent with SCC 14.24.400-.420.
- If so required, directing the Applicant to prepare a Geologically Hazardous Area Site Assessment, all consistent with SCC 14.24.200-.420 and the Hearing Examiner’s discretion; and
- Any additional proceedings as may be necessary to take additional evidence related to the Geologically Hazardous Area Site Assessment, to be managed at the Hearing Examiner’s discretion; and
- The imposition of such additional conditions as may be necessary to mitigate risks identified by the supplemental proceedings hereby ordered, to the extent such risks can be reasonably mitigated.

After consideration of the above directions, the Examiner has determined that the appropriate course now is to refer this matter to Planning and Development Services (PDS) with instructions to direct the Applicant to cause a Geologically Hazardous Site Assessment to be prepared and submitted to PDS.

On receipt of such assessment, PDS shall review it and provide an Amended Staff Report to the Hearing Examiner containing the department’s analysis and recommendations in light of the report.

Thereafter, the Examiner shall schedule and hold a supplementary public hearing in this matter, limited to comment on the Geologically Hazardous Site Assessment. Following this hearing, based on the record made, the Examiner shall issue a decision imposing such additional conditions, if any, as may be necessary to mitigate risks that have been identified.

SO ORDERED, this 9th day of March, 2021.



Wick Dufford, Hearing Examiner

Transmitted to: County Commissioners, Applicant, Planning and Development Services,
Evergreen Islands on March 9, 2021.

PL16-0556:

ASSISTANT PLANNING DIRECTOR LETTER TO
APPLICANT:



SKAGIT COUNTY PLANNING & DEVELOPMENT SERVICES

Bill Wooding
Lake Erie Pit, LLC

March 23, 2021

RE: Hearings Examiner Referral of PL16-0556 to Skagit County Planning & Development Services

Mr. Wooding,

Please find attached a copy of the remand from the Board of County Commissioners as well as a copy of the Order that the Hearings Examiner sent deferring the next steps to Skagit County Planning and Development Services (PDS). Per the direction of the Hearings Examiner the applicant shall prepare a Geologically Hazardous Area Site Assessment associated with the steep coastal area located to the west/northwest of the mine pursuant to Skagit County Code (SCC) 14.24.420 and prepare a Geologically Hazardous Mitigation Area Plan pursuant to Skagit County Code 14.24.430.

SCC 14.24.420(2)(g) allows the Administrative Official to require additional site assessment elements as may be required. In addition to the elements required by SCC 14.24.420, PDS is requesting the assessment specifically address the concerns raised by the Board of County Commissioners' in their remand. Those specific site assessment elements to be addressed within the assessment are as follows:

- Analyze the landslide risk arising from the potential for increased groundwater migration to the west/northwest of the mine due to the proposed expansion and attendant removal of soil and vegetation which could alter groundwater behavior in the vicinity of the mine.
- Analyze the presence of springs on the coastal bluff to the northwest of the mine that are at an elevation down gradient of the inferred groundwater level.
- Respond to the testimony of the professional geologist who identified that the proposed mine expansion will create an increased landslide risk.

Please let me know if you have any questions.

Respectfully,

Michael Cerbone
Assistant Director
Skagit County Planning and Development Services

Cc: Parties of record, Skagit County Hearings Examiner, Skagit County Board of County Commissioners

PL16-0556:

APPLICANT'S 8/12/22 SUBMITTED GEOLOGICALLY
HAZARDOUS SITE ASSESSMENT (PREPARED BY:
WOOD ENVIRONMENT & INFRASTRUCTURE
SOLUTIONS, INC.):



Geologic Hazard Site Assessment

Lake Erie Pit 1 Expansion

Southeast corner of Rosario Road & Marine Drive

Project # PS2220529-0

Prepared for:

Lake Erie Trucking, LLC

13540 Rosario Road, Anacortes, WA 98221

August 11, 2022

Geologic Hazard Site Assessment

Lake Erie Pit 1 Expansion
Southeast corner of Rosario Road & Marine Drive
Project # PS2220529-0

Prepared for:

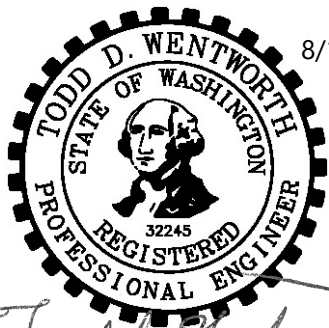
Lake Erie Trucking, LLC
13540 Rosario Road, Anacortes, WA 98221

Prepared by:

Wood Environment & Infrastructure Solutions, Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033
USA
T: 425-368-1000

August 11, 2022

Wood Environment & Infrastructure Solutions, Inc.



8/11/2022

Handwritten signature of Todd D. Wentworth in black ink.

Todd D. Wentworth, P.E., L.G.
Principal Geotechnical Engineer

Handwritten signature of Milan Radic in blue ink.

Milan Radic, P.E.
Senior Geotechnical Engineer

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List of acronyms

FS	factor of safety
msl	mean sea level
Wood	Wood Environment and Infrastructure Solutions, Inc.

1.0 Introduction

Wood Environment and Infrastructure Solutions, Inc. (Wood) understands that Lake Erie Trucking, LLC is seeking a permit to expand operations of the Lake Erie Pit 1 gravel mine towards the south. The expansion area includes tax parcels: P19161, P19164, P19158, P90028, and P19155. The goal is to gain access to more resources in order to continue mine operations further into the future. Various studies have been completed already as part of the permitting process (Skagit County 2020). A Special Use Permit was approved by Skagit County on November 30, 2020 (Skagit County, 2020); however, upon appeal, the Hearing Examiner determined that a geologic hazard site assessment is needed in order to fulfill Section 14.24.400 of the Skagit County Critical Areas Ordinance (Skagit County, 2021). This report is intended to meet the requirement for a geologic hazard site assessment.

2.0 Site and project description

The site is located on Fidalgo Island just south of Lake Erie, near 13500 Rosario Road, Township 34 North, Range 1 East, Section 11, Northwest ¼, as shown on Figure 1. The site contains a local high point in elevation between the coastline of Burrows Bay to the northwest, Lake Erie to the northeast, and Devil's Elbow Lake to the south. The surface elevation ranges from 420 feet down to 290 feet above mean sea level (msl) at the current base of mining operations. The surface slopes moderately over most of the area, except where mining excavations have created near-vertical and very steep slopes. The proposed expansion area has been graded with access roads and small excavations for mining aggregates and for controlling surface water runoff.

The current mining area is bare or vegetated with pioneering grasses, bushes, and saplings, and the proposed expansion area is fully vegetated with second-growth trees and shrubs.

The proposed use of the expansion area is displayed in Figures 2 through 5. Dry mining will consist of excavating the bank run sand and gravel, loading it into trucks, and transporting to construction sites. Excavation could extend down to elevation 250 feet above msl. The final reclamation plan consists of backfilling the excavated bank to form a prism of fill with 2H:1V (horizontal:vertical) slopes, and backfilling excavations in the northern portion to raise grades and form 2H:1V fill slopes, as shown in Figures 3 through 5.

2.1 Site Reconnaissance

Wood visited the site March 18, 2022. We met with Brandt Wooding of Lake Erie Trucking, LLC, who gave us a tour of the Lake Erie Pit 1 and answered questions. The photographs in Appendix A were taken during the site visit.

There were no ongoing operations occurring at Pit 1 and there was no evidence of recent mining (grass and shrubs were encroaching onto the access roads). First, Wood visited the most recent mining area of Pit 1, accessed from Rosario Road on the north near Marine Drive. The excavated sidewalls of Pit 1 were near-vertical for the upper 30 feet, and sloughed soil formed steep slopes of about 1.3H:1V down to the level base of Pit 1 (see photographs 1 through 3 in Appendix A).

The upper slope exposed on the east side appeared to consist of glacial till because the soil was able to stand vertical and consisted of a well-graded mixture of grain sizes with a large percentage of fines (silt and clay). The south and east sidewalls of Pit 1 appeared to consist of advance outwash because the soil was also able to stand vertical and stratification of sand was clearly visible (the grain sizes were stratified into thin layers).

No groundwater seepage was observed through the excavated slopes and no evidence of significant erosion was observed.

Second-growth vegetation of young conifers and deciduous trees and shrubs surrounded the Pit 1 mining area, both directly at the top of the cut slopes and forming a buffer to the north between the excavation area and Rosario Road.

Wood also visited the proposed expansion area to the south of the existing Pit 1 via an access road from Rosario Road on the west near Edith Point Road. This area was less developed, with some grading for access roads, and ditches and stormwater ponds for drainage and erosion control. Minor excavations for mining gravel may have occurred in the past. Wood observed monitoring well BJT-103, recently installed for the hydrogeologic studies related to the permit application for the expansion (see Photograph 4 in Appendix A). The surface of the expansion area slopes gently to moderately (less than 40 percent) from a high point near the middle of the area to the south, west, and east. Most of the expansion area is well-vegetated with second growth trees and brush. We did not notice any signs of slope instability or significant erosion.

2.2 Site Research

Wood reviewed previous relevant studies of the site. The following documents provided information on the existing conditions, site geology and groundwater, the proposed expansion, and the final reclamation plan:

- Lake Erie Pit Well Reconnaissance (NWGC, 2019);
- Observation Well Installation (Maul Foster, 2017); and
- Hydrogeologic Site Assessment Report (Maul Foster, 2016).

Wood also reviewed the Skagit County LIDAR map created using Lidar2016Hillshade encompassing the site, which is reproduced as Figure 6. The map clearly depicts evidence of landslides along the coastal bluffs west of the site and grading due to the mining on the site. The head scarp of the nearest coastal bluff is approximately 300 feet northwest of the northwest sidewall of the existing Pit 1 and is approximately 800 feet northwest of the proposed expansion. Rosario Road runs between the site and the coastal bluffs, and the cut slope between Rosario Road and the site is clearly visible. The cut slope graded for Rosario Road is not considered a geologic hazard as it is not a natural slope but is an engineered and maintained slope.

3.0 Subsurface Conditions

The subsurface conditions at the site have been described thoroughly in the previous hydrogeologic studies (Maul Foster, 2016 and 2017; and NWGC, 2019). The conditions are summarized in this section and incorporated into our slope stability modeling in Section 4.0.

3.1 Geologic Conditions

Based on available published maps, the geology of the site generally consists of glacial till overlying glacial advance outwash soils. Ophiolite rock outcrops are present nearby to the north and east, and are probably present below the glacial soils at an undetermined depth (Miller and Pessel, 1986).

The mapped geology is consistent with the well drilling observations (Maul Foster, 2017) which interpreted the soil stratigraphy to consist of glacial till in the upper 35 feet below ground surface, overlying glacial advance outwash to the full depth of drilling of 277 feet below ground surface.

Additionally, Wood observed glacial till and advance outwash in the mining sidewalls during our site reconnaissance, confirming the mapped stratigraphy.

Glacial till is generally defined as an over-consolidated mixture of gravel, sand, silt, and clay that was deposited and overridden by a prehistoric glacial ice mass, thereby over-consolidating the soils to densities ranging from dense to very dense. Thus, these materials possess relatively high shear strengths, low compressibility, and low permeability.

Advance outwash is characterized by moderately sorted sands and gravels deposited by streams associated with the advancing glacier. Advance outwash, deposited in front of the advancing glacial ice mass, has been compacted (over-consolidated) by the overriding glacier resulting in dense to very dense deposits and is found below glacial till.

A relatively thin layer of glacial lacustrine soils was encountered near elevation 250 feet above msl while drilling observation well BJF-103. Glacial lacustrine soils form when sediments are deposited in lakes in front of advancing glaciers and then overridden by the glacier, resulting in very stiff to hard deposits of silt, fine sand, and clay.

3.2 Groundwater Conditions

The previous hydrogeologic studies (Maul Foster, 2016 and 2017; and NWGC, 2019) provide detailed information regarding the groundwater elevation, groundwater flow direction, and conclude that the mining operation is unlikely to have any impact on the groundwater.

To summarize, the regional unconfined groundwater table was interpreted to be near elevation 190 feet above msl, which is approximately 60 feet below the proposed mining excavation level. Groundwater flows north, toward Lake Erie, as shown in Figure 2. Due to concerns that Devil's Elbow Lake (elevation 363 feet above msl) could be a source of water seepage into the Pit 1 sidewalls, a groundwater observation well, BJF-103, was installed in the proposed expansion area, between the existing gravel pit and Devil's Elbow Lake (Figure 2). Only the deep regional groundwater at elevation 190 feet above msl was encountered and no evidence of shallower groundwater was found.

The previous hydrogeologic studies concluded that the proposed mine operations and reclamation plan would not affect the water levels in Devil's Elbow Lake. Additionally, because there will be no groundwater withdrawals and stormwater will infiltrate into the subsurface, there will be no impact on the downgradient groundwater conditions.

4.0 Slope Stability

Because the site has relatively steep slopes (50 percent grades), we analyzed the slope stability for these site conditions. The following sections describe results of geotechnical engineering analyses for the proposed reclaimed slopes. The analytical models are based on the slopes presented in the Hydrogeologic Site Assessment Report (Maul Foster, 2016) as cross sections A-A' and B-B', and Wood's interpretation of the soil stratigraphy and strengths. The soil stratigraphy is based on the updated cross section B-B' presented in the observation well installation letter (Maul Foster, 2017), which included the soils log for observation well BJF-103. The interpreted geologic cross sections are presented in Figures 3 through 5.

4.1 Soil Strength Parameters

Table 1 presents the interpretation of geological units (supplied by Maul Foster [2016]), and correlated soil properties selected from the range provided in Engineering Geology in Washington (Koloski et al., 1989). For the fill to be used to create the final reclaimed slopes, we assumed Common Borrow per

Washington State Department of Transportation (WSDOT) Standard Specification 9-03.14(3) (WSDOT, 2022a) would be applicable, and the soil strength properties for the Common Borrow were correlated with Table 5-2 in the *Geotechnical Design Manual* (WSDOT, 2022b).

Table 1. Correlated Soil Strength Properties

Material	USCS Soil Type	Soil Friction Angle (degrees)	Cohesion (psf)	Apparent Cohesion ¹ (psf)	Moist Unit Weight (pcf)
Common Borrow	SM, GM	34	0	100	125
Glacial Outwash	SW, GW	38	0	200	130
Glacial Lacustrine	ML, SM	32	200	0	120

Note:

1. Apparent cohesion used only to evaluate stability for the seismic pseudostatic case.

Abbreviations

pcf = pounds per cubic foot
 psf = pounds per square foot

USCS = Unified Soil Classification System

By modeling the existing slope conditions at cross section A–A', Wood back-calculated soil properties of the advance outwash, a dominant soil unit, to match a factor of safety 1.0 under current static condition. The resulting soil strength required a friction angle of 42 degrees and 200 pounds per square foot apparent cohesion. These values are plausible but rather high, so to be more conservative, Wood reduced the soil strength of the advance outwash to correlated values reported in Engineering Geology in Washington (Koloski et al., 1989).

4.2 Slope Stability Analyses

Wood performed two-dimensional, limit equilibrium overall (global) stability analyses based on the method of slices according to Morgenstern-Price method, using the Slope/W software module in GeoStudio 2016 (Geo-Slope, 2016). This program employs limit equilibrium methods widely used in geotechnical engineering practice.

Wood modeled critical cross sections for slope geometry as summarized below:

1. Cross section A–A' (west to east) current west slope condition, Static Case;
2. Cross section A–A' (west to east) 2H:1V reclaimed west slope condition, Static Case;
3. Cross section A–A' (west to east) 2H:1V reclaimed west slope condition, Pseudostatic Case;
4. Cross section A–A' (west to east) reclaimed east slope condition, Static Case;
5. Cross section A–A' (west to east) reclaimed east slope condition, Pseudostatic Case;
6. Cross section B–B' (north to south) reclaimed south slope condition, Static Case; and
7. Cross section B–B' (north to south) reclaimed south slope condition, Pseudostatic Case.

We selected a target factor of safety (FS) for static and pseudo-static conditions of 1.3 and 1.1, respectively, for slip surfaces anywhere near the slope (no designated buffer) to verify the stability of the proposed final slopes. The static FS of 1.3 is what WSDOT uses for embankment and cut slopes that are not supporting structures. WSDOT does not require slopes without structures to be stable under seismic conditions, but they use an FS of 1.1 for slope that support structures.

Relative to the proposed 50-foot buffer between the top of the final slopes and the property line, all of the models for potential slip surfaces behind the buffer resulted in an FS greater than the 1.5 for static and 1.25 for seismic, as required by the Skagit County Critical Areas Code.

Global stability analyses of the reclaimed slopes considered shallow slip surfaces as well as deep-seated slip surfaces penetrating below the weaker glacial lacustrine layer and the groundwater table, defined at elevation 190 feet above msl per the previous hydrogeologic studies (Maul Foster, 2016 and 2017; and NWGC, 2019). The broad range cases demonstrate that deep-seated landslides are not likely.

Wood determined a pseudo-static horizontal seismic acceleration equivalent to one-half of site adjusted peak ground acceleration based on 7 percent probability of exceedance in 75 years, accessed via BEToolbox (WSDOT, 2022c). The pseudo-static horizontal seismic acceleration is 0.22g.

The results are presented in Table 2 and shows that reclaimed slopes meet or exceed the target FS. Slope stability results are shown in Appendix B.

Table 2. Overall Stability Evaluation Results

Cross Section	Location	Condition	Case	Target FS	Calculated FS	Exhibit ¹
A-A'	West Slope	Current ²	Static	1.0	1.0	B.1
A-A'	West Slope	Reclaimed	Static	1.3	1.9	B.2
			Static – Broad Range		1.9	B.3
			Pseudo Static	1.1	1.3	B.4
			Pseudo Static – Broad Range		1.3	B.5
A-A'	East Slope	Reclaimed	Static	1.3	1.4	B.6
			Static – Broad Range		1.4	B.7
			Pseudo Static	1.1	1.1	B.8
			Pseudo Static – Broad Range		1.1	B.9
B-B'	South Slope	Reclaimed	Static	1.3	1.7	B.10
			Static – Broad Range		1.7	B.11
			Pseudo Static	1.1	1.3	B.12
			Pseudo Static – Broad Range		1.3	B.13

Note:

1. Exhibits can be found in Appendix B.
2. Model used to back-calculate soil strength of glacial outwash

Abbreviations:

FS = factor of safety

4.3 Coastal Bluffs

The proposed mining operations will not have any impact on the coastal bluffs because the excavations will be too far away (300 to 800 feet).

The instability of coastal bluffs is usually related to (listed from major to minor causation): over-steepened slope; waves eroding the toe and creating over-steepened slopes; erosion from surface water flowing over

the slopes; groundwater seepage through the face of the slope; and occasionally due to over-loading at the top of the slope (such as roads and buildings).

The site is too far away from the coastal bluffs to cause any changes in these conditions except for possibly groundwater seepage and the previous hydrogeologic studies for the site (Maul Foster, 2016 and 2017; and NWGC, 2019) addressed this possibility. The studies concluded the proposed site development will not impact the groundwater table or the stability of the coastal bluffs because groundwater flows from the site towards the northeast, away from the bluffs; excavations at the site will not extend down into the groundwater table; and stormwater will be managed and infiltrated on site.

5.0 Conclusions and recommendations

The geologically hazardous areas on the site consist of landslide hazards due to slopes steeper than 40 percent and higher than 10 feet. These slopes are present due to the mining excavations and the final mine reclamation will include slopes graded to 2H:1V (50 percent). Quantitative engineering analyses of these slopes has determined that they will be stable with FSs that meet the Skagit County critical area code requirements and the standard of engineering practice.

Adjacent to the west of the site is the road cut for Rosario Road, which is steeper than 40 percent and higher than 10 feet. However, this is an engineered slope that was designed and is maintained by Skagit County, and therefore is considered stable. Additionally, the proposed expansion of Pit 1 will not affect this slope.

Coastal bluffs are located 300 to 800 feet west of the site and the proposed expansion of Pit 1 will not affect these slopes, because the proposed expansion plans will not change the regional groundwater conditions.

6.0 Limitations

1. The work performed in the preparation of this report and the conclusions presented herein are subject to the following:
 - a. The contract between Wood and the Client, including any subsequent written amendment or Change Order duly signed by the parties (hereinafter together referred as the "Contract");
 - b. Any and all time, budgetary, access and/or site disturbance, risk management preferences, constraints or restrictions as described in the Contract, in this report, or in any subsequent communication sent by Wood to the Client in connection to the Contract; and
 - c. The limitations stated herein.
2. **Standard of care:** Wood has prepared this report in a manner consistent with the level of skill and care ordinarily exercised by reputable members of Wood's profession, practicing in the same or similar locality at the time of performance, and subject to the time limits and physical constraints applicable to the scope of work, and terms and conditions for this assignment. No other warranty, guaranty, or representation, expressed or implied, is made or intended in this report, or in any other communication (oral or written) related to this project. The same are specifically disclaimed, including the implied warranties of merchantability and fitness for a particular purpose.
3. **Limited locations:** The information contained in this report is restricted to the site and structures evaluated by Wood and to the topics specifically discussed in it, and is not applicable to any other aspects, areas, or locations.

4. **Information utilized:** The information, conclusions, and estimates contained in this report are based exclusively on: i) information available at the time of preparation, ii) the accuracy and completeness of data supplied by the Client or by third parties as instructed by the Client, and iii) the assumptions, conditions and qualifications/limitations set forth in this report.
5. **Accuracy of information:** No attempt has been made to verify the accuracy of any information provided by the Client or third parties, except as specifically stated in this report (hereinafter "Supplied Data"). Wood cannot be held responsible for any loss or damage, of either contractual or extra-contractual nature, resulting from conclusions that are based on reliance on the Supplied Data.
6. **Report interpretation:** This report must be read and interpreted in its entirety, as some sections could be inaccurately interpreted when taken individually or out of context. The contents of this report are based on the conditions known and information provided as of the date of preparation. The text of the final version of this report supersedes any other previous versions produced by Wood.
7. **No legal representations:** Wood makes no representations whatsoever concerning the legal significance of its findings, or as to other legal matters touched on in this report, including but not limited to ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and change. Such interpretations and regulatory changes should be reviewed with legal counsel.
8. **Decrease in property value:** Wood shall not be responsible for any decrease, real or perceived, of the property or site's value or failure to complete a transaction, as a consequence of the information contained in this report.
9. **No third-party reliance:** This report is for the sole use of the party to whom it is addressed unless expressly stated otherwise in the report or Contract. Any use or reproduction that any third party makes of the report, in whole or in part, or any reliance thereon or decisions made based on any information or conclusions in the report is the sole responsibility of such third party. Wood does not represent or warrant the accuracy, completeness, merchantability, fitness for purpose, or usefulness of this document, or any information contained in this document, for use or consideration by any third party. Wood accepts no responsibility whatsoever for damages or loss of any nature or kind suffered by any such third party as a result of actions taken or not taken or decisions made in reliance on this report or anything set out therein, including without limitation, any indirect, special, incidental, punitive or consequential loss, liability or damage of any kind.
10. **Assumptions:** Where design recommendations are given in this report, they apply only if the project contemplated by the Client is constructed substantially in accordance with the details stated in this report. It is the sole responsibility of the Client to provide to Wood changes made in the project, including but not limited to details in the design, conditions, engineering, or construction that could in any manner whatsoever impact the validity of the recommendations made in the report. Wood shall be entitled to additional compensation from Client to review and assess the effect of such changes to the project.
11. **Time dependence:** If the project contemplated by the Client is not undertaken within a period of 18 months following the submission of this report, or within the time frame understood by Wood to be contemplated by the Client at the commencement of Wood's assignment, and/or if any changes are made—for example, to the elevation, design or nature of any development on the site, its size and configuration, the location of any development on the site and its orientation, the use of the site, performance criteria, and the location of any physical infrastructure—the conclusions and recommendations presented herein should not be considered valid unless the impact of the said

changes is evaluated by Wood, and the conclusions of the report are amended or are validated in writing accordingly.

Advancements in the practice of geotechnical engineering, engineering geology and hydrogeology and changes in applicable regulations, standards, codes, or criteria could impact the contents of the report, in which case, a supplementary report may be required. The requirements for such a review remain the sole responsibility of the Client or their agents.

Wood will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

12. **Limitations of visual inspections:** Where conclusions and recommendations are given based on a visual inspection conducted by Wood, they relate only to the natural or man-made structures, slopes, etc. inspected at the time the site visit was performed. These conclusions cannot and are not extended to include those portions of the site or structures that were not reasonably available, in Wood's opinion, for direct observation.
13. **Limitations of site investigations:** Site exploration identifies specific subsurface conditions only at those points from which samples have been taken and only at the time of the site investigation. Site investigation programs are a professional estimate of the scope of investigation required to provide a general profile of subsurface conditions.

The data derived from the site investigation program and subsequent laboratory testing are interpreted by trained personnel and extrapolated across the site to form an inferred geological representation, and an engineering opinion is rendered about overall subsurface conditions and their likely behavior with regard to the proposed development. Despite this investigation, conditions between and beyond the borehole/test hole locations may differ from those encountered at the borehole/test hole locations and the actual conditions at the site might differ from those inferred to exist, since no subsurface exploration program, no matter how comprehensive, can reveal all subsurface details and anomalies.

Final sub-surface/bore/profile logs are developed by geotechnical engineers based on their interpretation of field logs and laboratory evaluation of field samples. Customarily, only the final bore/profile logs are included in geotechnical engineering reports.

Bedrock, soil properties, and groundwater conditions can be significantly altered by environmental remediation and/or construction activities, such as the use of heavy equipment or machinery, excavation, blasting, pile-driving, or draining or other activities conducted either directly on site or on adjacent terrain. These properties can also be indirectly affected by exposure to unfavorable natural events or weather conditions, including freezing, drought, precipitation, and snowmelt.

During construction, excavation is frequently undertaken that exposes the actual subsurface and groundwater conditions between and beyond the test locations, which may differ from those encountered at the test locations. It is recommended that Wood be retained during construction to confirm that the subsurface conditions throughout the site do not deviate materially from those encountered at the test locations, that construction work has no negative impact on the geotechnical aspects of the design, to adjust recommendations in accordance with conditions as additional site information is gained, and to deal quickly with geotechnical considerations if they arise.

Interpretations and recommendations presented herein may not be valid if an adequate level of review or inspection by Wood is not provided during construction.

14. **Factors that may affect construction methods, costs and scheduling:** The performance of rock and soil materials during construction is greatly influenced by the means and methods of construction.

Where comments are made relating to possible methods of construction, construction costs, construction techniques, sequencing, equipment or scheduling, they are intended only for the guidance of the project design professionals, and those responsible for construction monitoring. The number of test holes may not be sufficient to determine the local underground conditions between test locations that may affect construction costs, construction techniques, sequencing, equipment, scheduling, operational planning, etc.

Any contractors bidding on or undertaking the works should draw their own conclusions as to how the subsurface and groundwater conditions may affect their work, based on their own investigations and interpretations of the factual soil data, groundwater observations, and other factual information.

15. **Groundwater and dewatering:** Wood will accept no responsibility for the effects of drainage and/or dewatering measures if Wood has not been specifically consulted and involved in the design and monitoring of the drainage and/or dewatering system.
16. **Environmental and hazardous materials aspects:** Unless otherwise stated, the information contained in this report in no way reflects on the environmental aspects of this project, since this aspect is beyond the scope of work and the Contract. Unless expressly included in the scope of work, this report specifically excludes the identification or interpretation of environmental conditions such as contamination, hazardous materials, wildlife conditions, rare plants, or archeology conditions that may affect use or design at the site. This report specifically excludes the investigation, detection, prevention, or assessment of conditions that can contribute to moisture, mold or other microbial contaminant growth, and/or other moisture-related deterioration, such as corrosion, decay, or rot in buildings or their surroundings. Any statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes.
17. **Effect of iron minerals:** This report does not address issues related to the discovery or presence of iron minerals, such as pyrite, or the effects of iron minerals, if any, in the soil or to be used in concrete. Should specific information be required, additional testing may be requested by the Client for which Wood shall be entitled to additional compensation.

7.0 References

- Geo-Slope International, Ltd. (Geo-Slope). 2016. GeoStudio 2016 (v8.16.5.15361).
- Koloski, J.W., S.D. Schwartz, and D.W. Tubbs. 1989. Geotechnical Properties of Geologic Materials. *In* Engineering Geology in Washington, Volume I, Richard W. Galster, Editor, Washington Division of Geology and Earth Resources *Bulletin* 78.
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WSDOT. 2022b. *Geotechnical Design Manual*. Publication M 46-03.16. February.

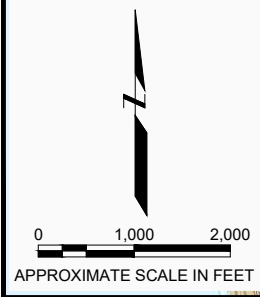
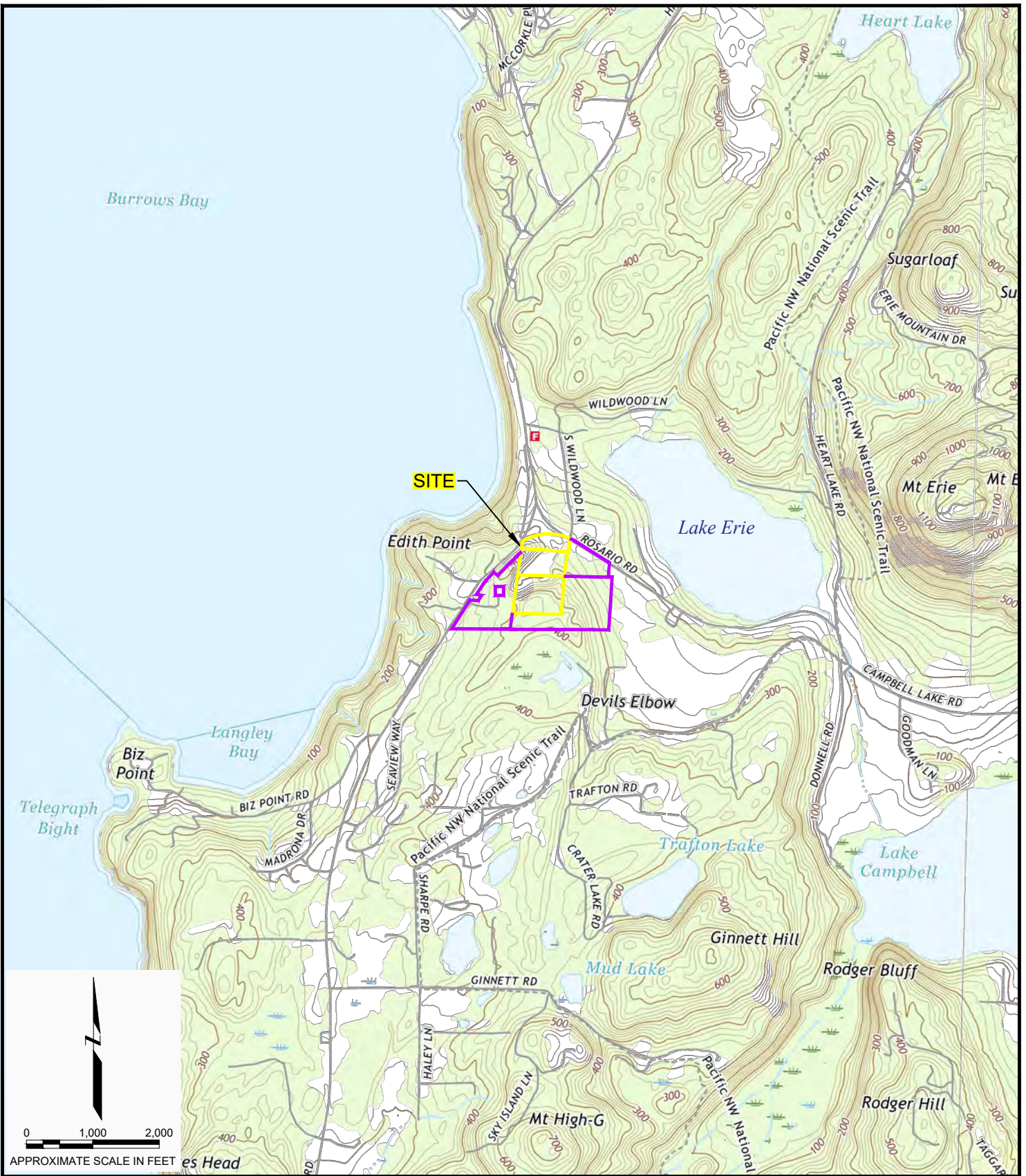
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wood.

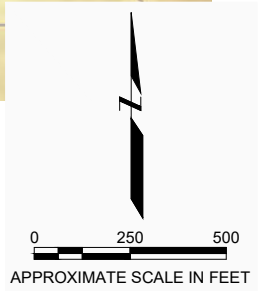
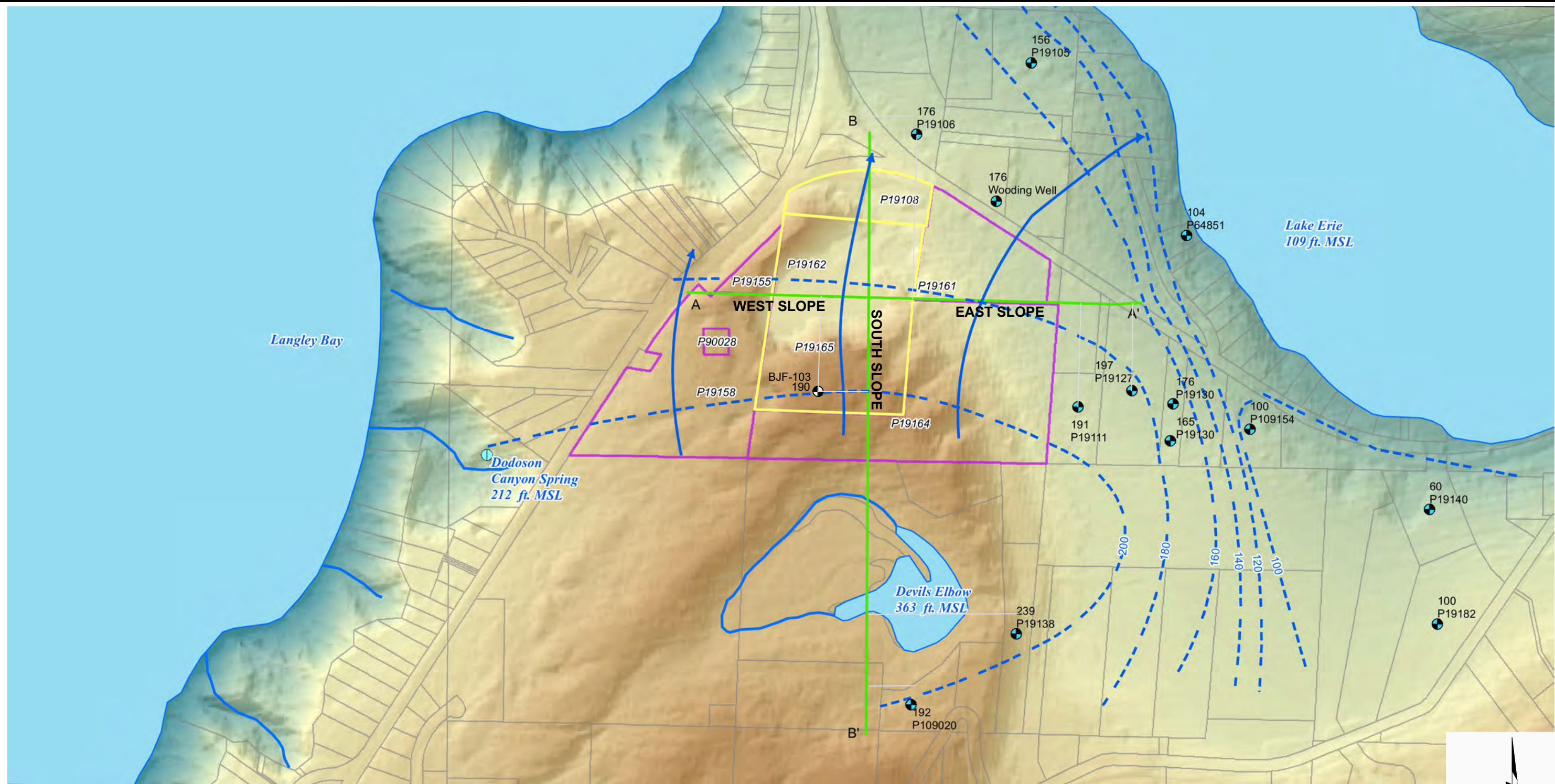
Figures





CLIENT LAKE ERIE TRUCKING, LLC		PROJECT LAKE ERIE PIT 1 EXPANSION Anacortes, Washington	DATE MAY 2022	
Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033		TITLE SITE VICINITY	SCALE AS SHOWN	PROJECT NO. PS22-20529-0
		FIGURE 1		

DRAWN BY: APS, CHECKED BY: JKH



Legend

	Inferred Groundwater Surface Elevation Contour (MSL)		Inferred Groundwater Flow Direction
	Parcel #		Cross Section Transect
	MSL Well		Current Permitted Parcels
	Approximate Groundwater Elevation (MSL)		Expansion Parcels
	Elevation (Feet MSL)		Parcels
	High : 1270.8 Low : -6.7		

CLIENT	LAKE ERIE TRUCKING, LLC
	wood.
	Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033

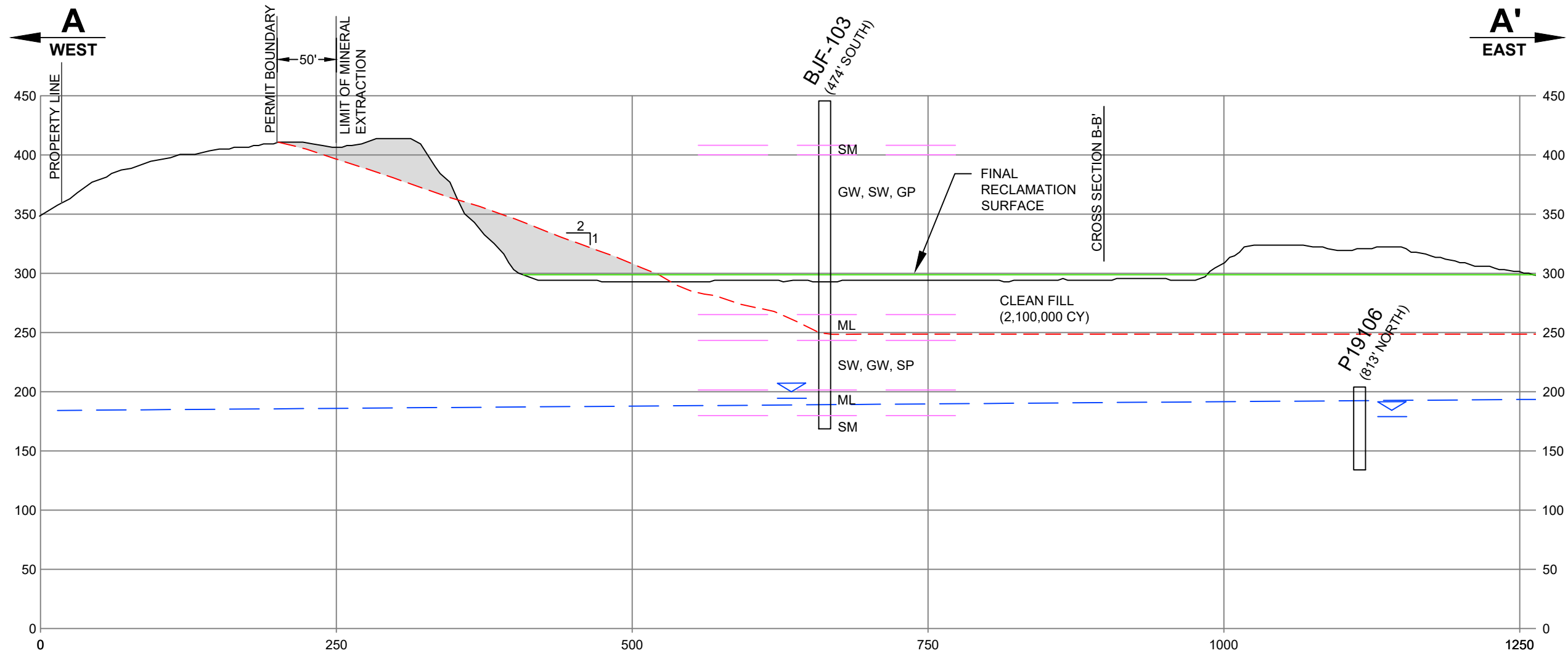
PROJECT	LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington
TITLE	PLAN VIEW OF EXPANSION AREA WITH CROSS SECTION LOCATIONS

DATE	MAY 2022
SCALE	AS SHOWN
PROJECT NO.	PS22-20529-0
FIGURE	2

SOURCE:
HYDROGEOLOGIC SITE
ASSESSMENT REPORT

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfooster.com

DRAWN BY: PM, CHECKED BY: JKH

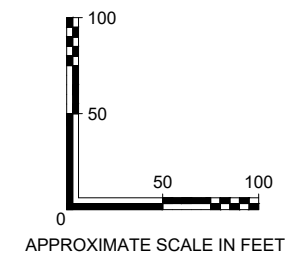


KEY

- CL = CLAY
- GC = CLAYEY GRAVEL
- SC = CLAYEY SAND
- SM = SILTY SAND
- SW = WELL GRADED SAND
- GW = WELL GRADED GRAVEL
- ML = SILT
- SP = POORLY GRADED SAND

LEGEND

- EXISTING GRADE
- FINAL RECLAMATION SURFACE
- BOTTOM OF MINING SURFACE
- LITHOLOGY CONTACT
- AREA TO BE REGRADED AT FINAL RECLAMATION
- INFERRED WATER TABLE



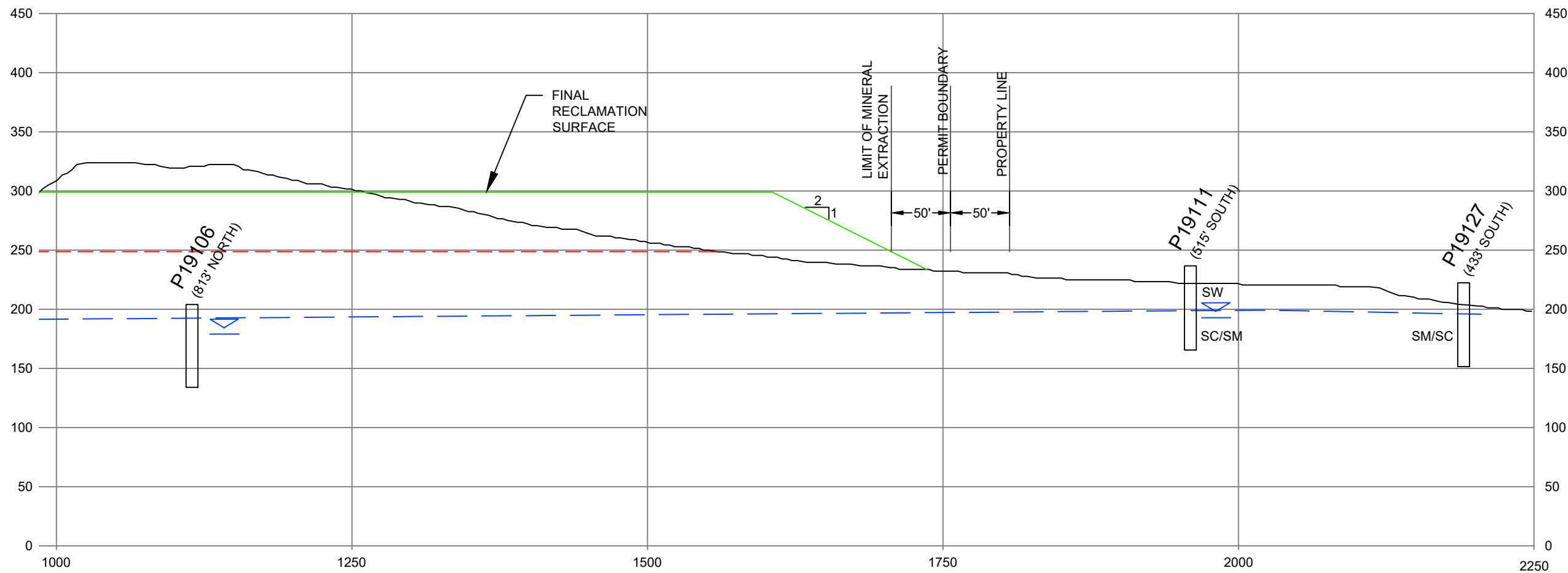
NOTES:

1. 100-FT SETBACK TO FINAL RECLAMATION SURFACE IS ONLY APPLICABLE TO PARCEL 19108. ALL OTHER PARCELS WILL MAINTAIN A 50-FT SETBACK TO FINAL RECLAMATION SURFACE.
2. MINE TO 10 FEET ABOVE WATER TABLE
3. MINE FLOOR RAISED TO 300 FEET WITH 85% COMPACTION
4. MSL = MEAN SEA LEVEL
5. CY = CUBIC YARDS

CLIENT LAKE ERIE TRUCKING, LLC		PROJECT LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington	DATE MAY 2022
		TITLE WEST SLOPE CROSS SECTION A-A'	SCALE AS SHOWN
Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033		PROJECT NO. PS22-20529-0	FIGURE 3

A
WEST

A'
EAST

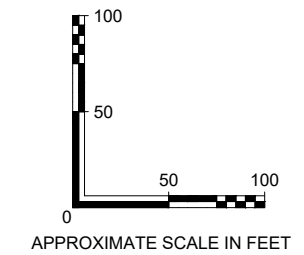


KEY

- CL = CLAY
- GC = CLAYEY GRAVEL
- SC = CLAYEY SAND
- SM = SILTY SAND
- SW = WELL GRADED SAND
- GW = WELL GRADED GRAVEL
- ML = SILT
- SP = POORLY GRADED SAND

LEGEND

- EXISTING GRADE
- FINAL RECLAMATION SURFACE
- - - BOTTOM OF MINING SURFACE
- - - LITHOLOGY CONTACT
- AREA TO BE REGRADED AT FINAL RECLAMATION
- - - INFERRED WATER TABLE



NOTES:

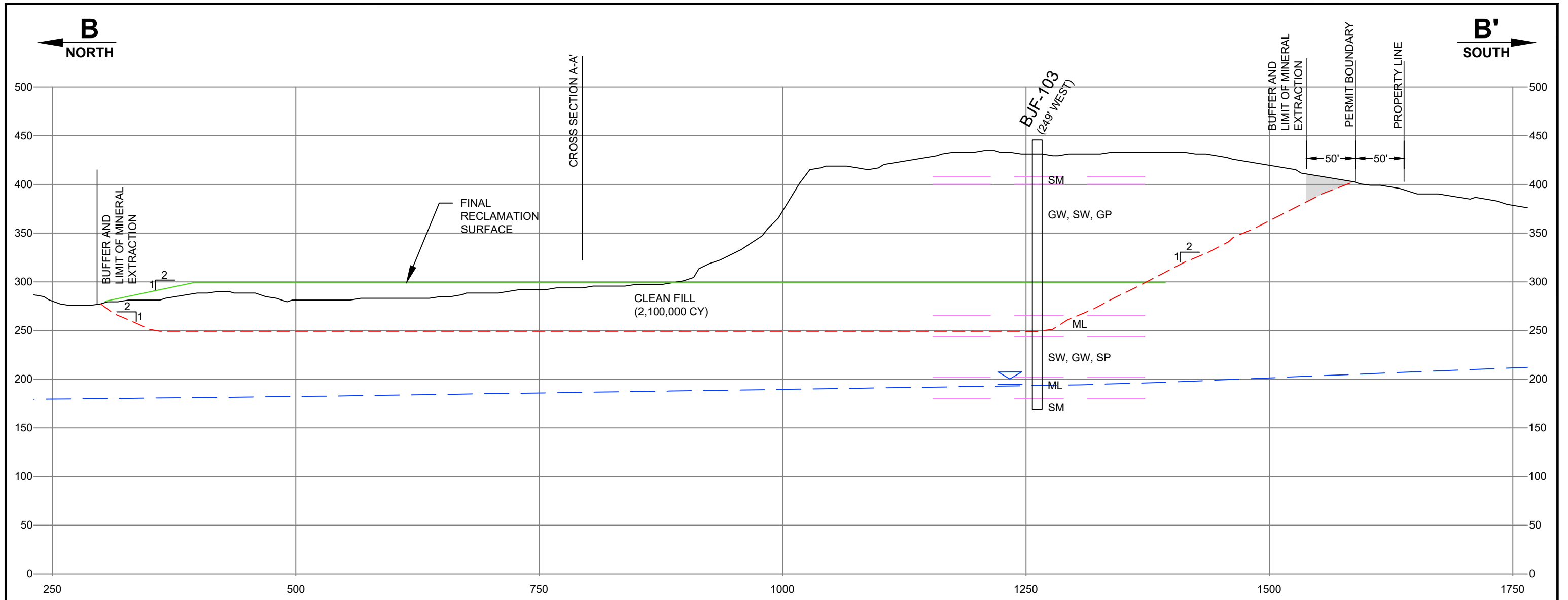
1. 100-FT SETBACK TO FINAL RECLAMATION SURFACE IS ONLY APPLICABLE TO PARCEL 19108. ALL OTHER PARCELS WILL MAINTAIN A 50-FT SETBACK TO FINAL RECLAMATION SURFACE.
2. MINE TO 10 FEET ABOVE WATER TABLE
3. MINE FLOOR RAISED TO 300 FEET WITH 85% COMPACTION
4. MSL = MEAN SEA LEVEL
5. CY = CUBIC YARDS

SOURCE:
HYDROGEOLOGIC SITE
ASSESSMENT REPORT



CLIENT	LAKE ERIE TRUCKING, LLC
	wood.
	Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033

PROJECT	LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington	DATE	MAY 2022
		SCALE	AS SHOWN
TITLE	EAST SLOPE CROSS SECTION A-A'	PROJECT NO.	PS22-20529-0
		FIGURE	4

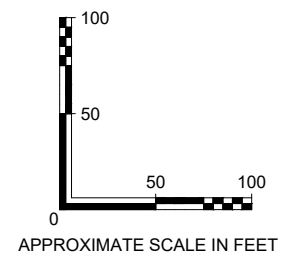


KEY

- CL = CLAY
- GC = CLAYEY GRAVEL
- SC = CLAYEY SAND
- SM = SILTY SAND
- SW = WELL GRADED SAND
- GW = WELL GRADED GRAVEL
- ML = SILT
- SP = POORLY GRADED SAND

LEGEND

- EXISTING GRADE
- FINAL RECLAMATION SURFACE
- BOTTOM OF MINING SURFACE
- LITHOLOGY CONTACT
- AREA TO BE REGRADED AT FINAL RECLAMATION
- INFERRED WATER TABLE



NOTES:

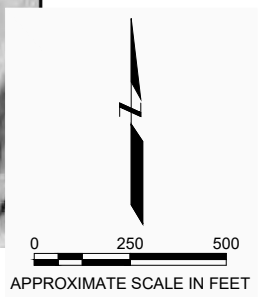
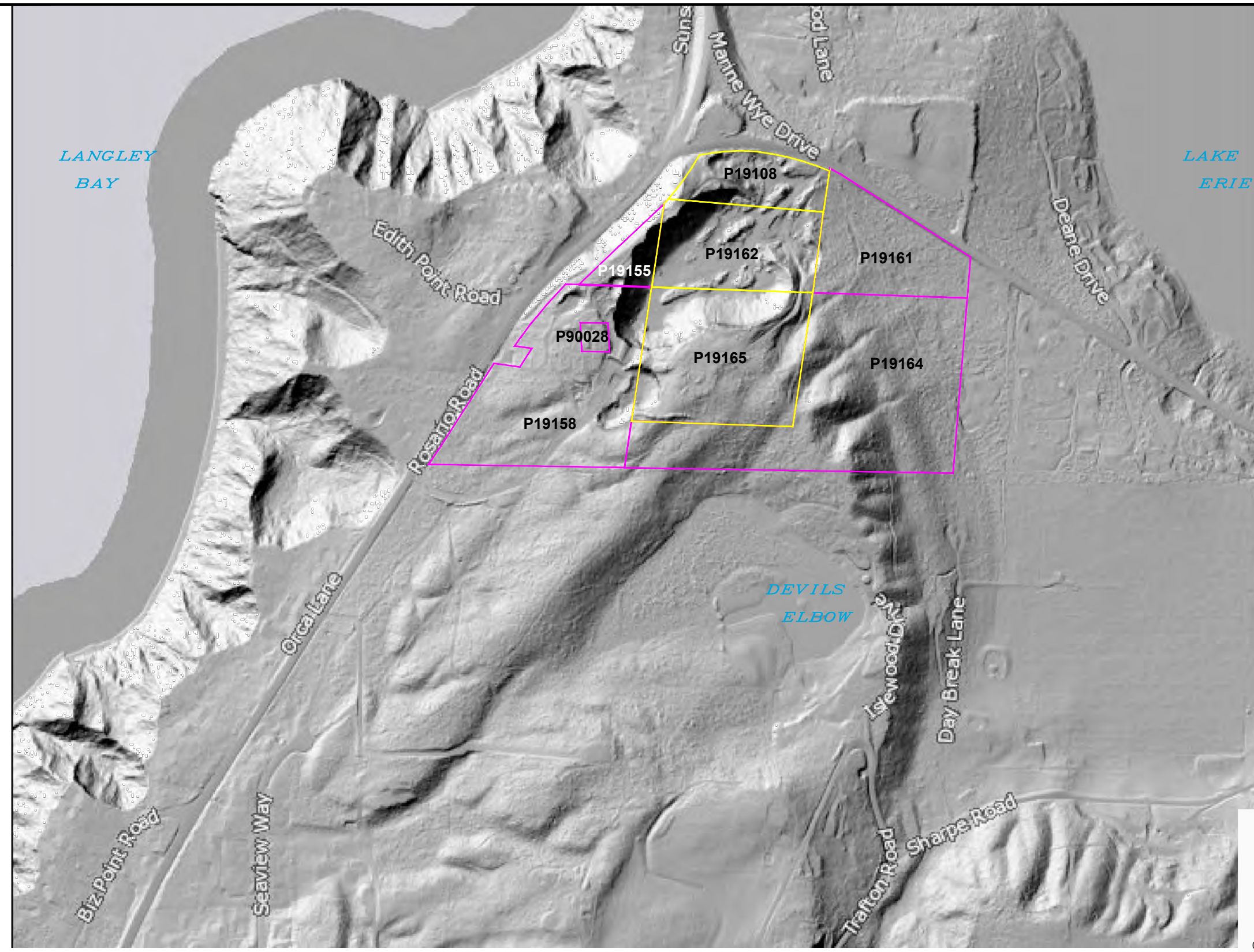
1. 100-FT SETBACK TO FINAL RECLAMATION SURFACE IS ONLY APPLICABLE TO PARCEL 19108. ALL OTHER PARCELS WILL MAINTAIN A 50-FT SETBACK TO FINAL RECLAMATION SURFACE.
2. MINE TO 10 FEET ABOVE WATER TABLE
3. MINE FLOOR RAISED TO 300 FEET WITH 85% COMPACTION
4. MSL = MEAN SEA LEVEL
5. CY = CUBIC YARDS

SOURCE:
HYDROGEOLOGIC SITE
ASSESSMENT REPORT

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfooster.com

CLIENT LAKE ERIE TRUCKING, LLC		PROJECT LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington	DATE MAY 2022
		TITLE SOUTH SLOPE CROSS SECTION B-B'	SCALE AS SHOWN
Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033		PROJECT NO. PS22-20529-0	FIGURE 5

DRAWN BY: PM, CHECKED BY: JKH



LEGEND

	Current Permitted Parcels
	Expansion Parcels

SOURCE:
SKAGIT COUNTY
LIDAR 2016 HILL SHADE.

DRAWN BY: PM CHECKED BY: JKH

<p>CLIENT</p> <p style="text-align: center;">LAKE ERIE TRUCKING, LLC</p>	<p>PROJECT</p> <p style="text-align: center;">LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington</p>	<p>DATE</p> <p style="text-align: right;">MAY 2022</p>
<p style="text-align: center;">wood.</p> <p>Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033</p>	<p>TITLE</p> <p style="text-align: center;">LIDAR MAP</p>	<p>SCALE</p> <p style="text-align: right;">AS SHOWN</p>
		<p>PROJECT NO.</p> <p style="text-align: right;">PS22-20529-0</p>
		<p>FIGURE</p> <p style="text-align: right;">6</p>



wood.

Appendix A



Appendix A Site Photographs



Photograph 1. Lake Erie Pit looking east



Photograph 2. Lake Erie Pit looking south



Photograph 3. Lake Erie Pit looking southwest



Photograph 4. New well looking east



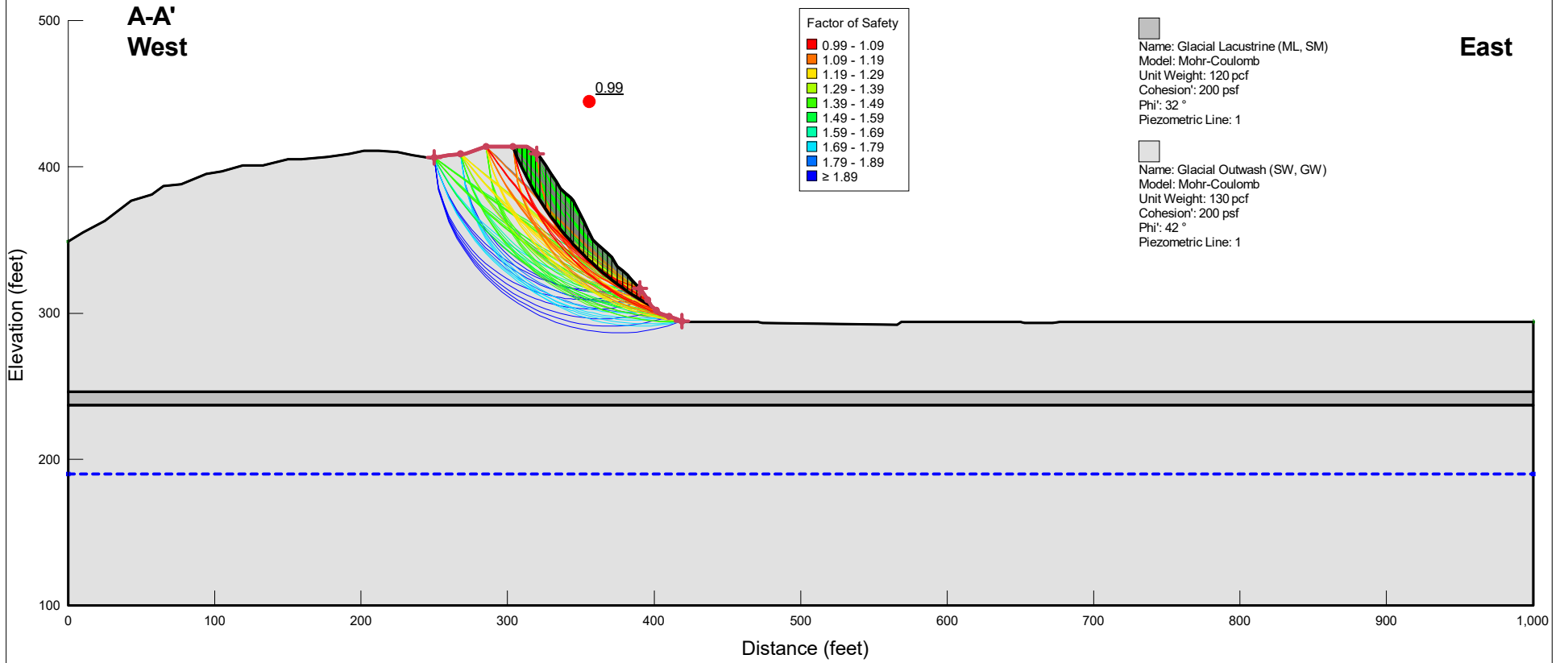
wood.

Appendix B



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

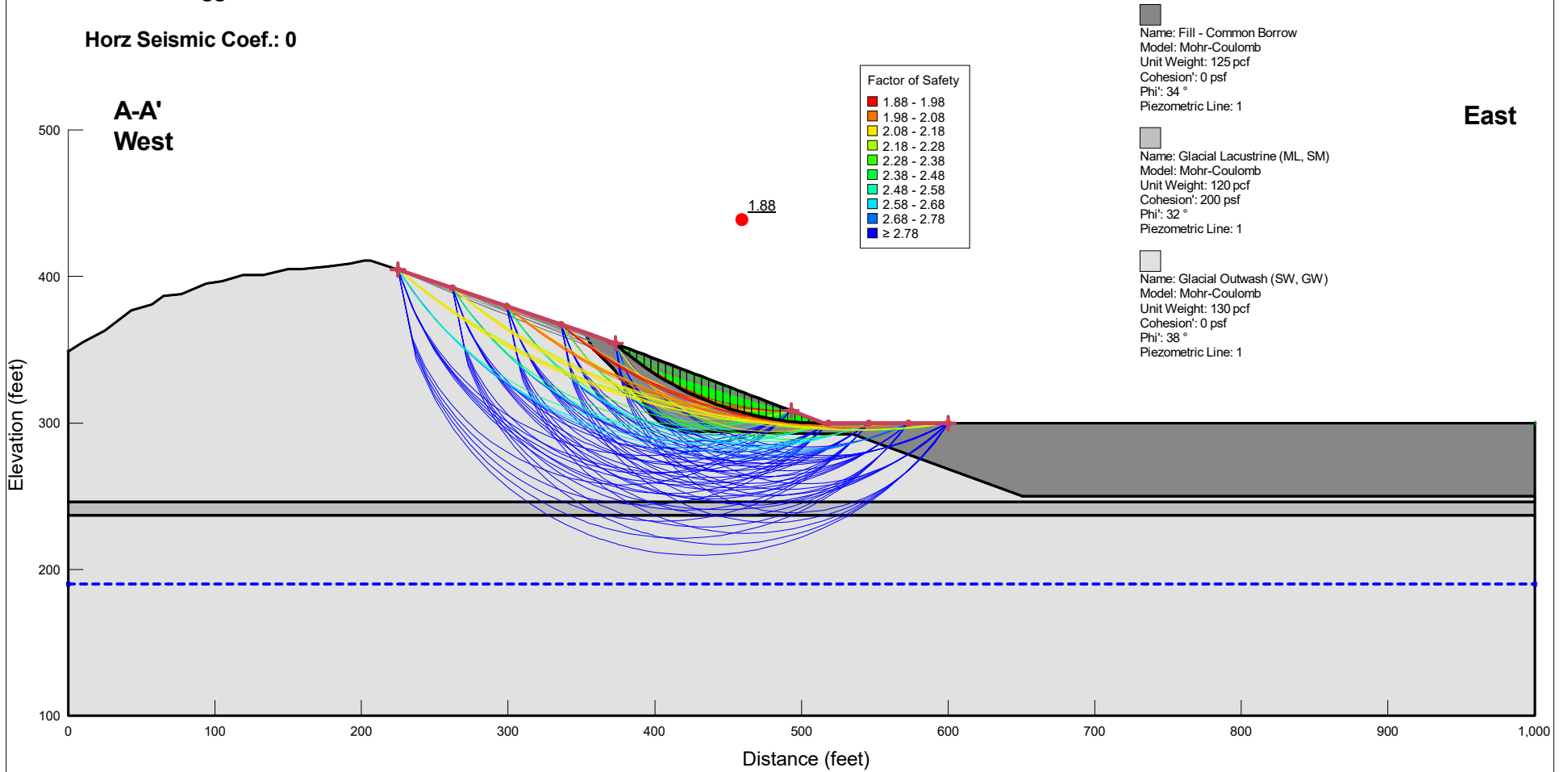
**Current Slope Condition
Name: A-A' West to East - 1H:1V Current
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed West Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

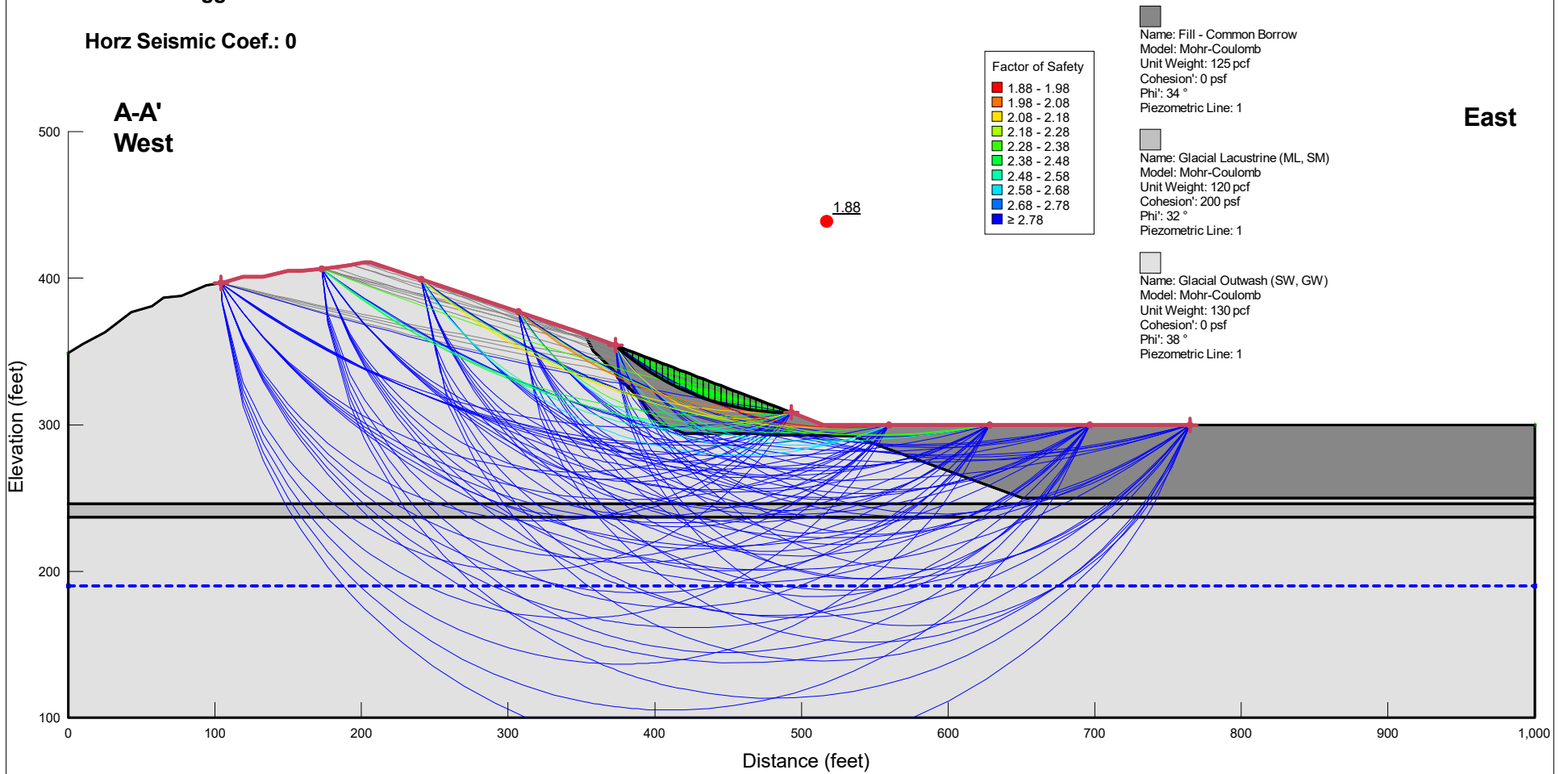
Horz Seismic Coef.: 0



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed West Slope Condition - Broad Range
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

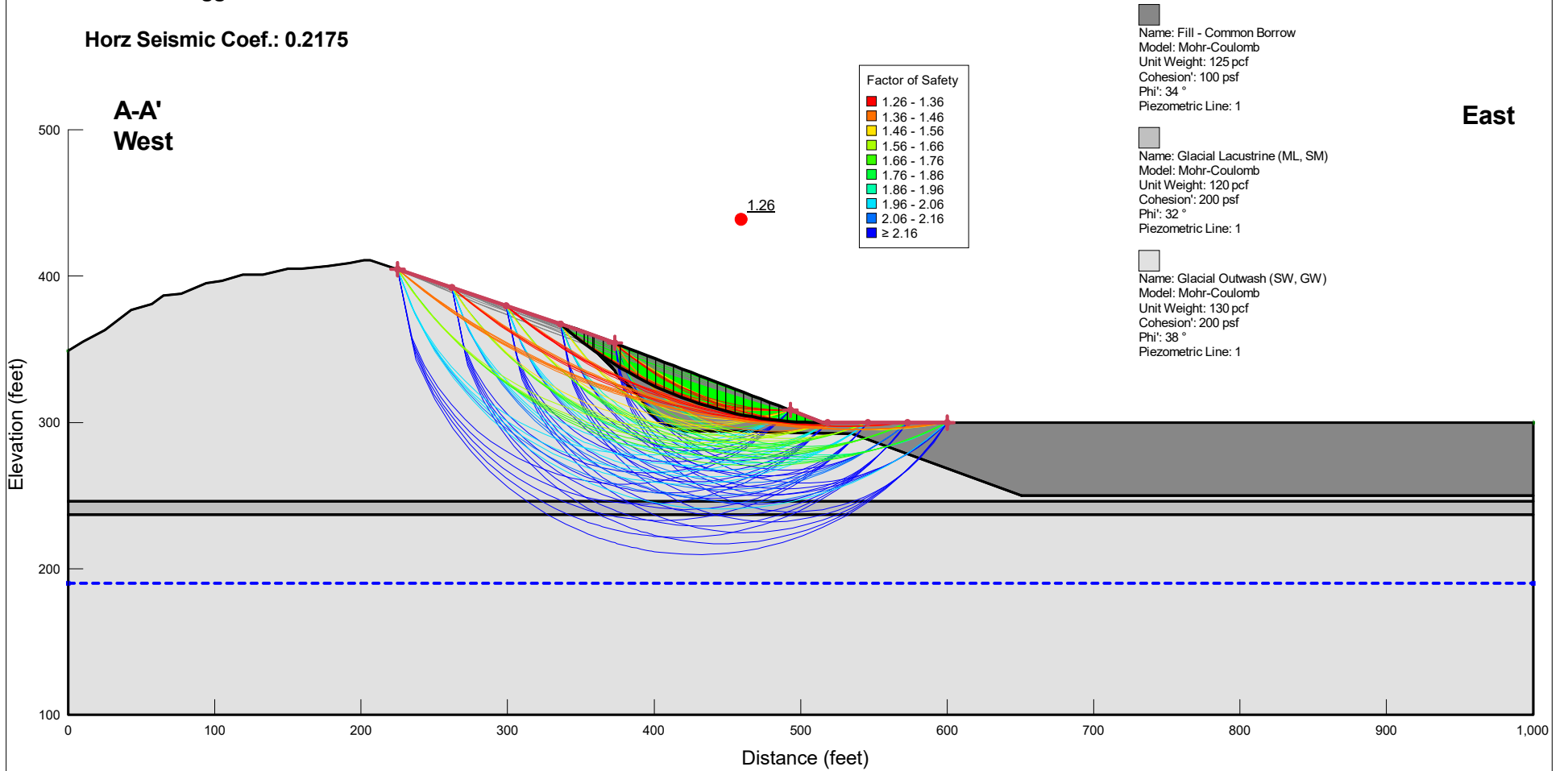
Horz Seismic Coef.: 0



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed West Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

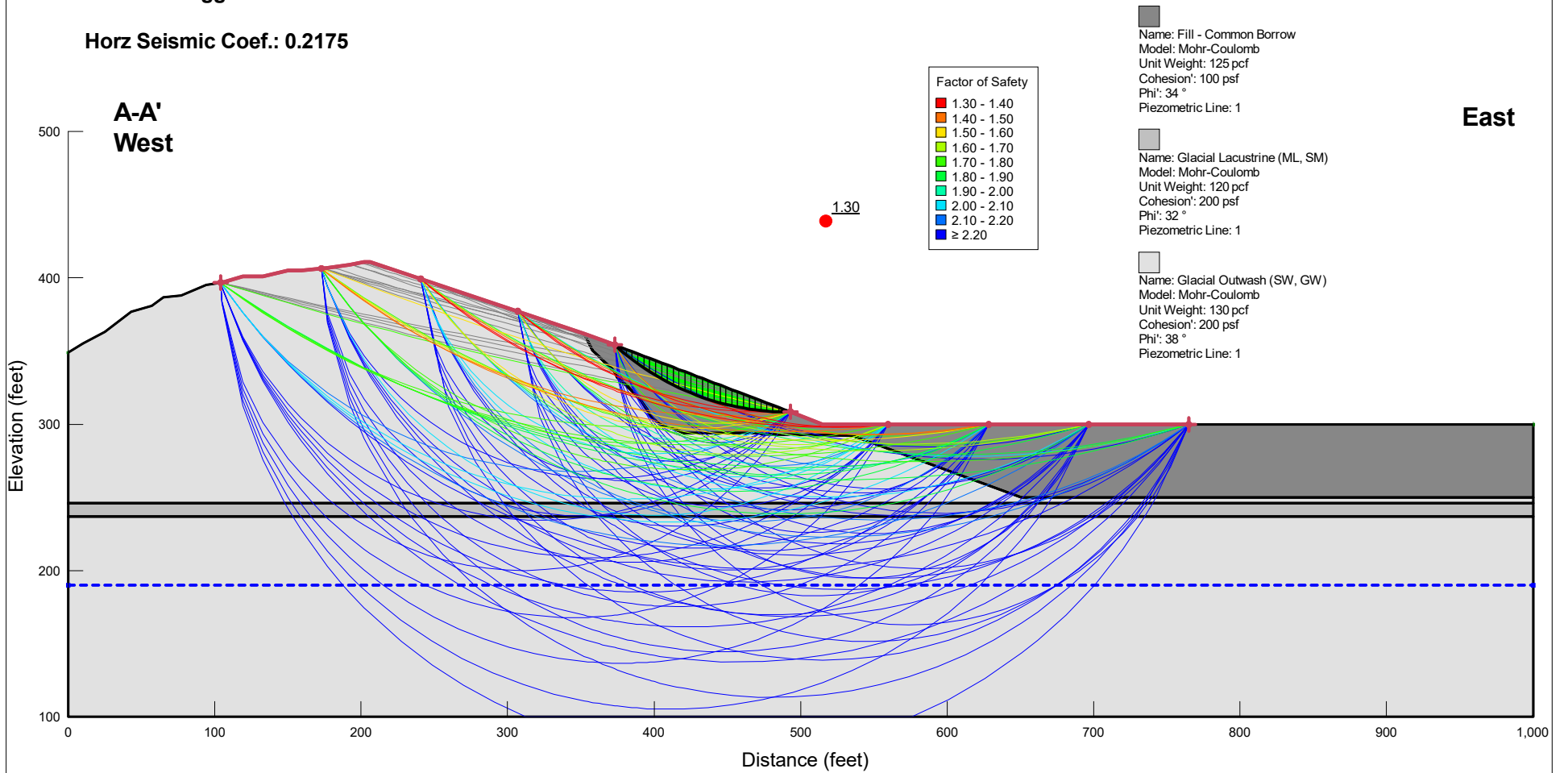
Horz Seismic Coef.: 0.2175



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed West Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

Horz Seismic Coef.: 0.2175



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

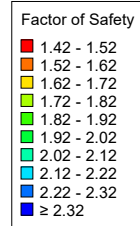
Reclaimed East Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1

Horz Seismic Coef.: 0

- Name: Fill - Common Borrow
 Model: Mohr-Coulomb
 Unit Weight: 125 pcf
 Cohesion: 0 psf
 Phi: 34 °
 Piezometric Line: 1

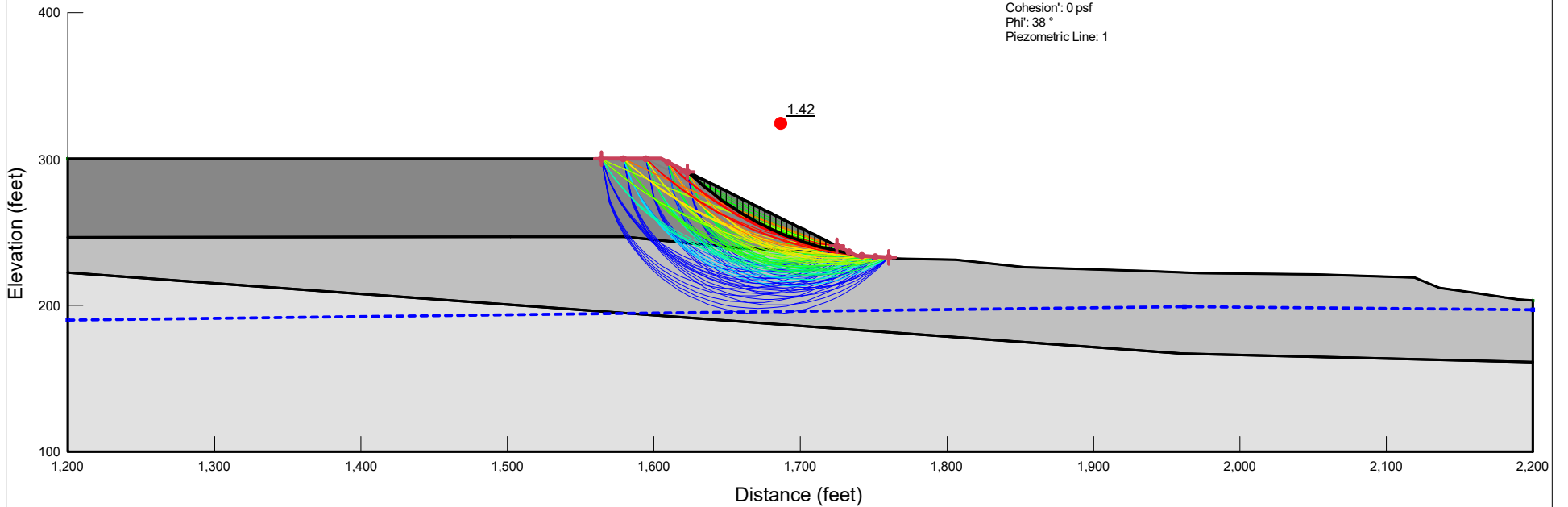
- Name: Glacial Lacustrine (ML, SM)
 Model: Mohr-Coulomb
 Unit Weight: 120 pcf
 Cohesion: 200 psf
 Phi: 32 °
 Piezometric Line: 1

- Name: Glacial Outwash (SW, GW)
 Model: Mohr-Coulomb
 Unit Weight: 130 pcf
 Cohesion: 0 psf
 Phi: 38 °
 Piezometric Line: 1



A-A'
West

East

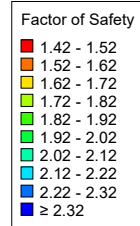


**Lake Erie Pit 1 Expansion
Anacortes, Washington**

Reclaimed East Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1

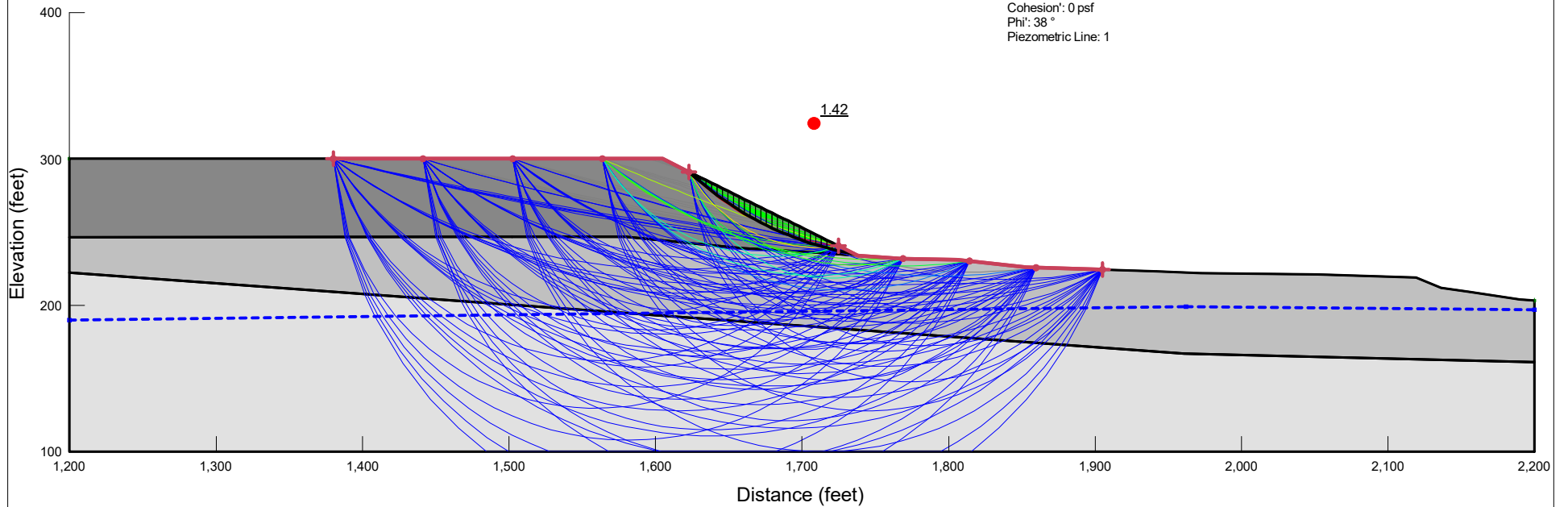
Horz Seismic Coef.: 0

- Name: Fill - Common Borrow
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 0 psf
Phi: 34 °
Piezometric Line: 1
- Name: Glacial Lacustrine (ML, SM)
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 200 psf
Phi: 32 °
Piezometric Line: 1
- Name: Glacial Outwash (SW, GW)
Model: Mohr-Coulomb
Unit Weight: 130 pcf
Cohesion: 0 psf
Phi: 38 °
Piezometric Line: 1



A-A'
West

East

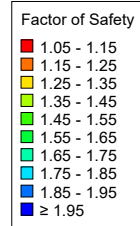


**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed East Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

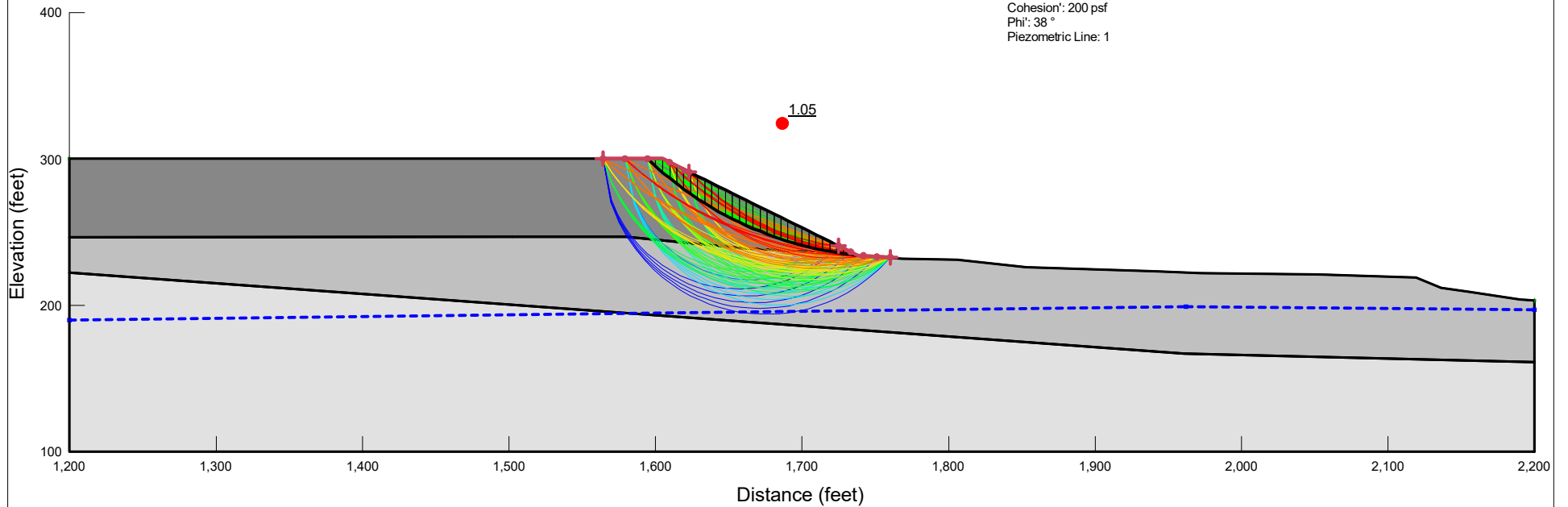
Horz Seismic Coef.: 0.2175

- Name: Fill - Common Borrow
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 100 psf
Phi: 34 °
Piezometric Line: 1
- Name: Glacial Lacustrine (ML, SM)
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 200 psf
Phi: 32 °
Piezometric Line: 1
- Name: Glacial Outwash (SW, GW)
Model: Mohr-Coulomb
Unit Weight: 130 pcf
Cohesion: 200 psf
Phi: 38 °
Piezometric Line: 1



**A-A'
West**

East

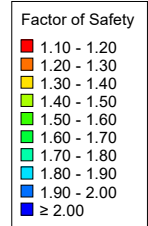


**Lake Erie Pit 1 Expansion
Anacortes, Washington**

**Reclaimed East Slope Condition
Name: A-A' West to East - 2H:1V Cut/Fill
Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

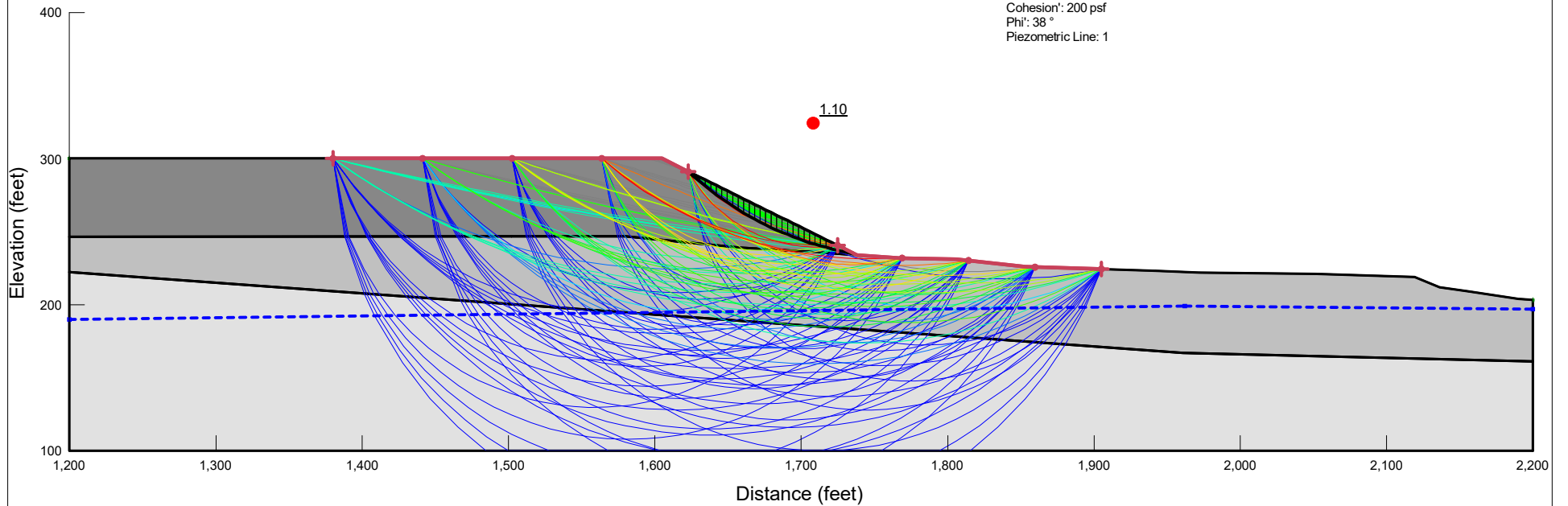
Horz Seismic Coef.: 0.2175

- Name: Fill - Common Borrow
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Unit Weight: 130 pcf
Cohesion: 200 psf
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**A-A'
West**

East



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

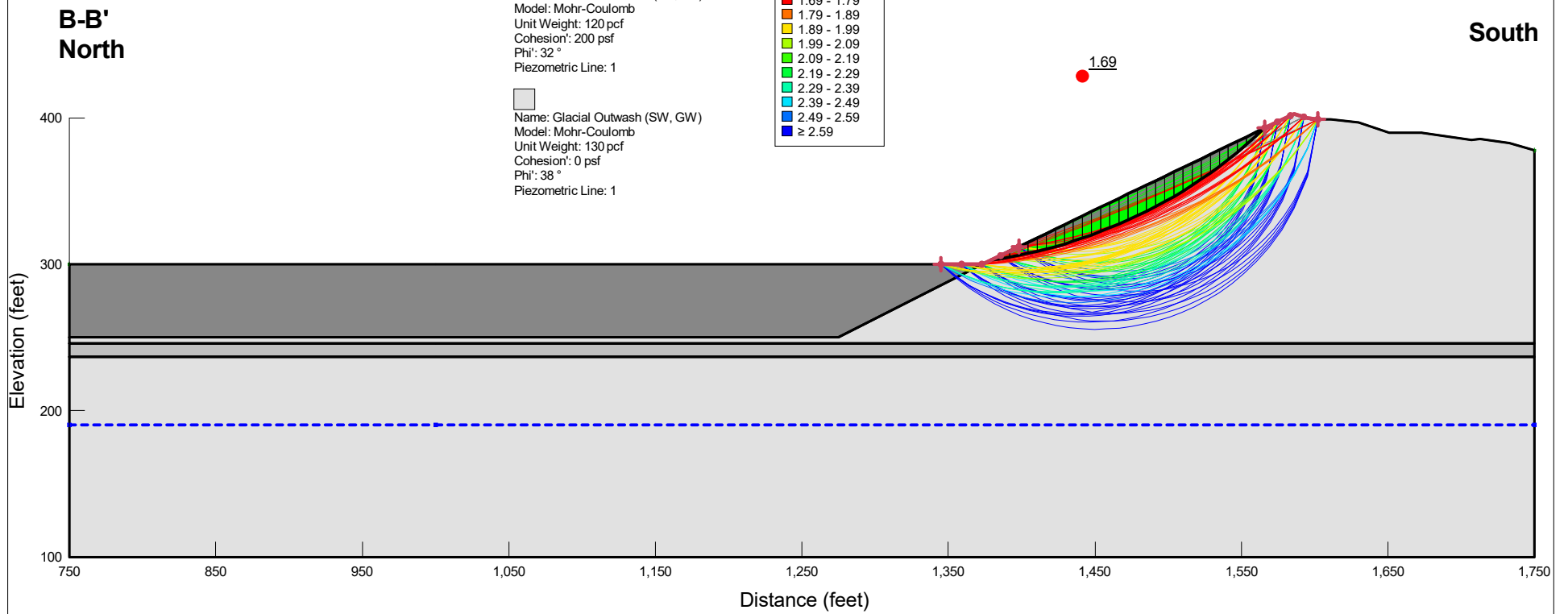
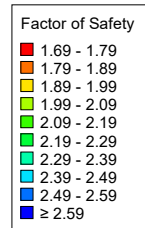
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Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

Horz Seismic Coef.: 0

- Name: Fill - Common Borrow
Model: Mohr-Coulomb
Unit Weight: 125 pcf
Cohesion: 0 psf
Phi: 34 °
Piezometric Line: 1

- Name: Glacial Lacustrine (ML, SM)
Model: Mohr-Coulomb
Unit Weight: 120 pcf
Cohesion: 200 psf
Phi: 32 °
Piezometric Line: 1

- Name: Glacial Outwash (SW, GW)
Model: Mohr-Coulomb
Unit Weight: 130 pcf
Cohesion: 0 psf
Phi: 38 °
Piezometric Line: 1



**Lake Erie Pit 1 Expansion
Anacortes, Washington**

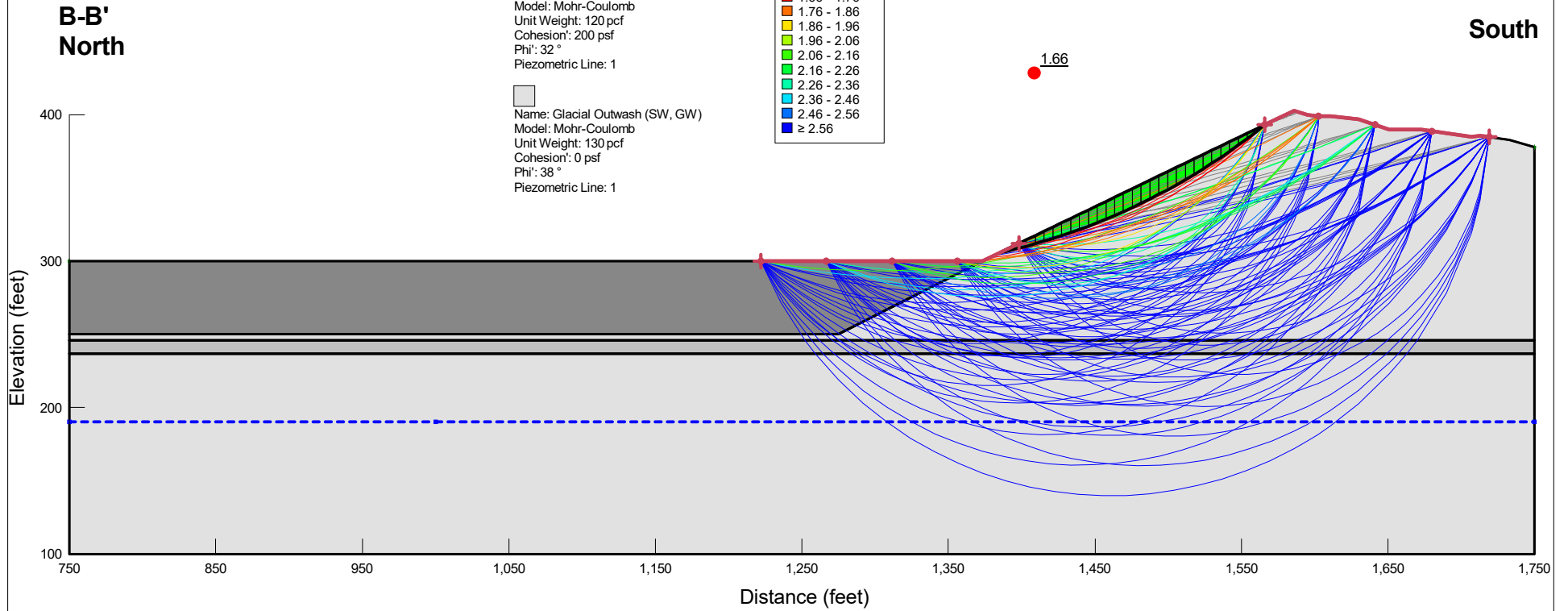
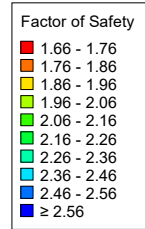
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Method: Morgenstern-Price
Date: 4/8/2022
Vertical Exaggeration: 1**

Horz Seismic Coef.: 0

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**Lake Erie Pit 1 Expansion
Anacortes, Washington**

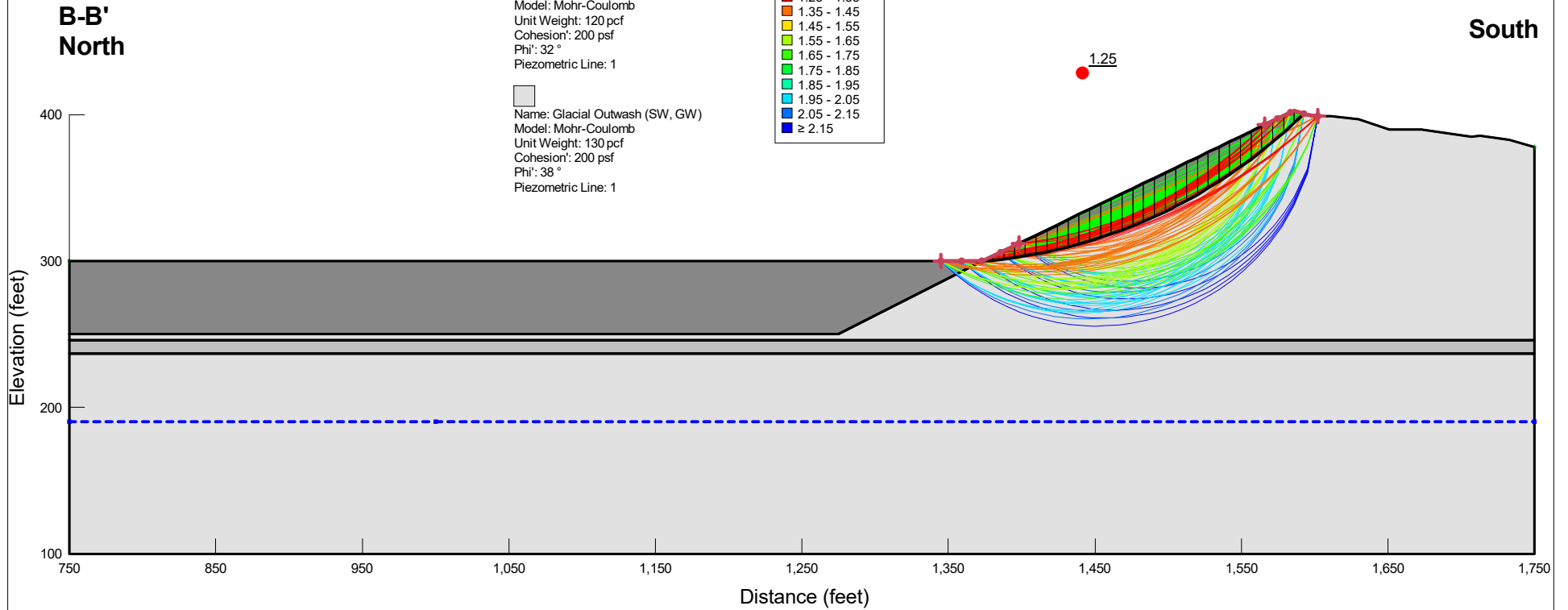
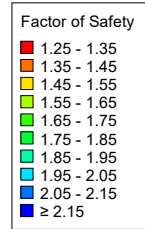
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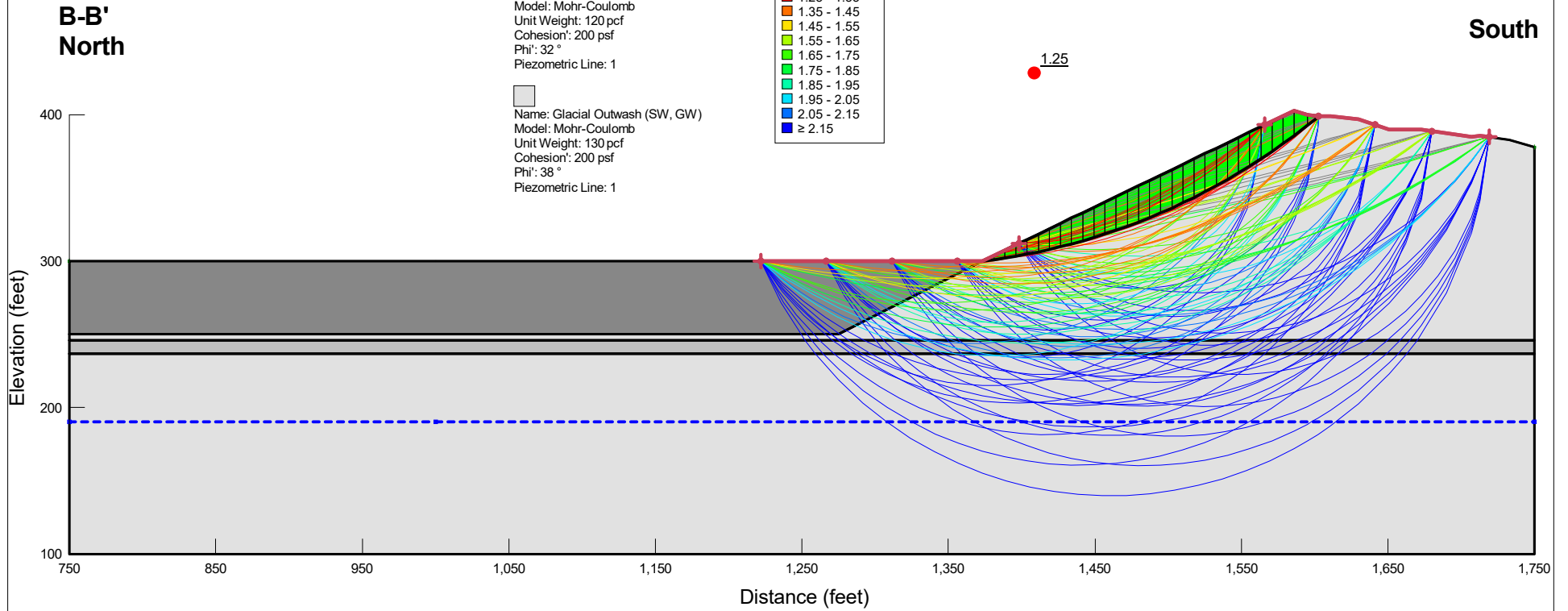
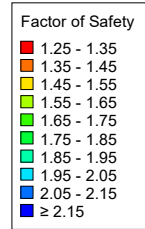
**Reclaimed South Slope Condition
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 Cohesion: 200 psf
 Phi: 38 °
 Piezometric Line: 1



PL16-0556:

THIRD PARTY REVIEW (PERFORMED BY THE
WATERSHED COMPANY):

Lake Erie Gravel Pit – Third Party Review

P#: 19164 Site Address: **13500 Rosario Road (Fidalgo Island)**
Property Owner(s): **Lake Erie Trucking, LLC**
Project Description: **Lake Erie Gravel Pit (Surface Mine)**

Notes:

Reviewed the hydrogeologic reports provided (see references), NRCS local soils descriptions, and water well logs of record for the general vicinity.

Project is a proposed expansion of gravel pit excavation (surface mine) and hauling in the vicinity of Lake Erie on Fidalgo Island, Skagit County. The project proposes to manage stormwater by capturing site runoff for infiltration. Proposed excavation is planned to be above the inferred ground water elevation of a local aquifer and no dewatering is anticipated. There are approximately 70 wells of record within a one-mile radius of the proposed surface mine, approximately 16 wells appear to be downgradient of the site (MFA, 2016). There is no record of existing contamination at the site.

A resource protection well (BJF103) was drilled for the project in 2017. The ground surface elevation for the well is 445.6 ft msl (MFA, 2017). The top of casing elevation for the well is 448.4 ft msl (NGC, 2019). The well log documents the approximately 20-foot-thick layer of semi-consolidated brown to gray clay, at depths of 189 to 209 ft. (259.4 to 239.4 msl) overlying water bearing strata at various depths (WDOE, 2017). This clay layer, or aquitard, serves as a protective element for the underlying aquifer and reduces the risk of groundwater contamination from surface sources. Static water level in the well was 255.4 ft btc (193 ft msl) on 9/19/2017 (MFA, 2017). The observed water level reflects commingled hydraulic heads in a resource protection well without screening (open hole at a depth of 277 ft) and undeveloped hydraulic continuity with the aquifer.

The inferred groundwater surface elevation in the aquifer, based on comparisons of static water levels in surrounding wells, is about 190 feet msl (MFA, 2016). The proposed project includes excavation to a bottom elevation of 250 ft. msl (Wood, 2022). The general direction of groundwater discharge in the local aquifer is north/northeast.

Surface soils in the project area include the Catla, Keystone, and LaConner soil series and topsoil depths generally range from 16 to 24 inches, grading into granular subsoils (NRCS, 2007)

SCC 14.24.340: Aquifer recharge areas impact mitigation

Based on project information available to date, the risk of impacts to aquifer recharge and groundwater quality due to the proposed surface mine appears to be generally low. Given some uncertainties in using

inferred water level observations of commingled hydraulic heads, variability in land elevations, and different surface mine operations, several mitigations measures should be considered to further reduce potential impacts to aquifer recharge and groundwater quality. These proposed mitigation measures are as follows:

1. Surface soils, particularly topsoil, excavated at depths of 24 inches or more from mined areas should be stockpiled and replaced on exposed areas as excavation is completed. Topsoil and subsoils should be stockpiled and applied separately to avoid mixing different soil fertilities. Stockpiled soils should not be sold, or given away, or otherwise removed, or used for screening berms. These soils provide important functions for protecting water quality of surface infiltration and promoting revegetation of the site.
2. The elevation of subsurface strata may vary across the site and excavation to elevations of 250 ft. msl may encounter the brown/gray clay aquitard overlying the deeper aquifer. This layer should not be excavated or disturbed in order to maintain protection of aquifer storage and existing wells from potential disturbance or contamination.
3. It is recommended that resource protection well BJF103 be monitored over the life of the project by measuring water level and submitting a water quality sample (drinking water standards) at least once a year. This information provides an essential baseline for evaluating future changes in groundwater conditions.
4. It is recommended that the project area, particularly haul roads, have secure site access controls, including fencing and gates as needed, to prevent unauthorized or illegal dumping on the property. Given relatively shallow groundwater levels in the project area, disposal of demolition materials, wood waste, solid waste, or contaminated soils in the project area should be prohibited.

References:

- Maul, Foster, Alongi (MFA). Hydrogeologic Site Assessment Report. Lake Erie Pit Expansion. Bellingham, WA. December 2, 2016.
- Maul, Foster, Alongi (MFA). Observation Well Installation. Lake Erie Pit Expansion. Bellingham, WA. September 28, 2017.
- Northwest Groundwater Consultants (NGC). Lake Erie Pit Well Recommendations. Coeur d'Alene, Idaho. March 11, 2019
- WA Dept of Ecology (WDOE). Water Well Report. Resource Protection Well BJF103. <https://ecology.wa.gov/wellconstruction>. September 25, 2017.
- Wood Environment & Infrastructure Solutions, Inc (Wood). Geologic Hazard Site Assessment. Lake Erie Pit 1 Expansion. Kirkland, WA. August 11, 2022.

Date: 11/22/22

Reviewer: Alan Wald, LHg



**WATERSHED COMPANY'S REVISED
RESPONSE TO EVERGREEN
ISLAND'S 11-18-2022 LETTER/
EMAIL**

MEMORANDUM

Date: January 18, 2023
To: Kevin Cricchio, Skagit County Planning
From: Alan Wald, LHG. The Watershed Company
Project Name: Skagit County Lake Erie Pit Review
Project Number: 210231.9



RECEIVED

MAR 31 2023

SKAGIT COUNTY
PDS

**Subject: Response to Evergreen Islands communication of 11/18/2022 re:
Lake Erie Pit**

As per your request of 12/20/22, I have reviewed the comment letters from Loring Advising and the Stratum Group concerning potential groundwater issues and proposed expansion of the Lake Erie Pit. I have included (attached) the 11/22/2022 third-party review report we provided Skagit County regarding the proposed project.

The main concerns raised in the Evergreen Island communication appear to be the adequacy of the groundwater flow assessment and potential impacts to bluff stability west and northwest of the proposed pit expansion.

The methods and results of the groundwater flow assessment are presented in several reports:

Maul, Foster, Alongi (MFA). Hydrogeologic Site Assessment Report. Lake Erie Pit Expansion. Bellingham, WA. December 2, 2016.

Maul, Foster, Alongi (MFA). Observation Well Installation. Lake Erie Pit Expansion. Bellingham, WA. September 28, 2017.

Northwest Groundwater Consultants (NGC). Lake Erie Pit Well Recommendations. Coeur d'Alene, Idaho. March 11, 2019. And

WA Dept of Ecology (WDOE). Water Well Report. Resource Protection Well BJF103. <https://ecology.wa.gov/wellconstruction>. September 25, 2017.

The Wood Environment & Infrastructure Solutions, Inc (Wood). Geologic Hazard Site Assessment. Lake Erie Pit 1 Expansion. Kirkland, WA. August 11, 2022, uses the aquifer properties and groundwater flow characterization from these reports.

I revisited the methods and results of the aquifer characterization and groundwater flow analysis in the groundwater flow assessment and found no significant discrepancies or

inaccuracies in the data collection, hydrogeologic analysis, or discussion that would question the study results. The lithology is reasonably consistent with the well logs, the groundwater levels were developed from a comprehensive mass well measurement, and the flow paths were plotted perpendicular to the groundwater surface contours. The aquifer is well characterized at recorded depths and static water levels. The prevailing groundwater flow path is to the north and northeast of the proposed project.

Bluff areas to the west and southwest of the proposed project, including the Dodoson Canyon Springs, are 800 to 1,000 feet from the project with base elevations (below the scarps) of about 200 ft. msl. Based on documented groundwater surface elevations and local stratigraphy, it is likely that groundwater seepage is from the regional aquifer. I found no apparent reason to conclude the proposed project would change the rate or volume of groundwater discharge from seepage on the bluffs.

Attachment.

**HEARING EXAMINER'S 7/13/23
REMAND DECISION (APPROVAL)**

**BEFORE THE HEARING EXAMINER
FOR SKAGIT COUNTY**

In the Matter of the Application of)	No. PL16-0556
)	
Bill Wooding, on behalf of)	Lake Erie Pit Special Use Permit
Lake Erie Pit LLC)	
)	
)	FINDINGS, CONCLUSIONS,
<u>For a Special Use Permit</u>)	AND DECISION ON REMAND

SUMMARY OF DECISION

The request for a mining special use permit to allow the expansion of an existing gravel mine located in the vicinity of Lake Erie, off Rosario Road on Fidalgo Island, from its current 17.78 acres to the proposed 53.5 acres, is hereby **APPROVED**. Conditions are necessary to address specific impacts of the proposal.

SUMMARY OF RECORD

Hearing Date:

On June 28, 2023, the Hearing Examiner held an open record hearing on remand from the Skagit County Board of County Commissioners, utilizing a hybrid approach allowing for participation in person or through remote access technology.

Testimony:

The following individuals presented testimony under oath at the open record remand hearing:

- Kevin Cricchio, County Senior Planner
- Todd Wentworth, Wood Environment & Infrastructure Services, Inc.
- William Wooding, Applicant Representative
- Thomas Mullen, Northwest Groundwater Consultants
- Kyle Loring, Attorney for Appellant Evergreen Islands
- Dan McShane, Stratum Group
- Tom Glade, Evergreen Islands
- Marlene Finley, Evergreen Islands
- Brian Wetter, Evergreen Islands
- Micael Raphael, Evergreen Islands
- Konrad Kurp, Evergreen Islands
- Jan Heald Robinson, Evergreen Islands
- Linda Dobbs, Evergreen Islands
- Brinkley Meyers
- Franky Parker
- Jake Olliffe

*Findings, Conclusions, and Decision on Remand
Skagit County Hearing Examiner
Lake Erie Pit, LLC SUP
Special Use Permit, No. P16-0556*

Heidi Fish
Deanna Claus
Stewart Toshach
Ellen Bynum, Friends of Skagit County

Exhibits:

The following exhibits admitted into the record during the August 26, 2020, open record public hearing¹ for the Hearing Examiner's original decision on this matter, which the Hearing Examiner issued on November 30, 2020:

1. Staff Report, dated August 26, 2020
2. Special Use Permit Application and Narrative, received December 2, 2016
3. Skagit County Zoning and Assessor's Map, dated July 28, 2020
4. Site Plans, dated September 28, 2016
5. Notice of Development Application, published February 2, 2017
6. SEPA Environmental Checklist, dated June 8, 2017
7. SEPA Mitigated Determination of Nonsignificance, dated December 3, 2018, and Associated SEPA Staff Report
8. Critical Areas Reconnaissance by Skagit Wetlands and Critical Areas, dated February 24, 2017
9. Hydrogeologic Site Assessment Report by Maul Foster Alongi, dated September 28, 2016
10. Observation Well Installation Letter Report by Maul Foster Alongi, dated September 28, 2017
11. Letter from McLucas and Associates, Responding to the Del Mar Comment Letter, dated December 19, 2018
12. Letter from Northwest Groundwater Consultants, Responding to the Del Mar Comment Letter, dated January 3, 2019
13. Lake Erie Pit Well Reconnaissance by Northwest Groundwater Consultants LLC, dated March 11, 2019
14. Lake Erie Gravel Pit Traffic Impact Analysis by Gibson Traffic Consultants, Inc., dated September 2016
15. Addendum to the Lake Erie Gravel Pit Traffic Impact Analysis by Gibson Traffic Consultants, Inc., dated May 12, 2017
16. Traffic Memorandum by Skagit County Public Works, dated March 1, 2018
17. Supplemental (traffic) Memorandum by Skagit County Public Works, dated May 2, 2018
18. Lake Erie Pit air quality best management practices by Maul Foster Alongi, dated September 15, 2016
19. Lake Erie Pit Expansion Noise Study by Acoustics Group, Inc., dated September 16, 2016
20. List of Neighboring Property Owners and Parties of Record Notified of the Public Hearing, undated

¹ The August 26, 2020, hearing continued on October 14, 2020. *Exhibit 24.*

21. First Round of Comment Letters, various dates
22. Applicant Responses to Comment Letters, dated April 19, 2017
23. Second Round of Comment Letters, various dates

The following exhibits were admitted into the record during the June 28, 2023, open record public hearing on remand:

24. Hearing Examiner's [Original] Decision, dated November 30, 2020
25. Appellant Evergreen Islands' Appeal to the Board of County Commissioners, dated December 14, 2020
26. Resolution R20210038, Board of County Commissioners' Remand to Hearing Examiner, dated February 23, 2021
27. Hearing Examiner's Order Referring Matter to Planning and Development Services, dated March 9, 2021
28. Letters from PDS to Applicant, various dates:
 - a. Letter from PDS to Applicant Request Additional Information, dated March 23, 2021
 - b. Letter from PDS to Applicant with Deadline for Additional Information, dated May 27, 2021
 - c. Letter from PDS Denying SUP Application, dated July 21, 2021
29. Applicant's Appeal of PDS Denial of SUP, dated August 3, 2021
30. Hearing Examiner's Order Granting Appeal and Reversing Denial, dated October 18, 2021
31. Geological Hazard Site Assessment, prepared by Wood Environment & Infrastructure Solutions, Inc., dated August 11, 2022
32. Evergreen Islands Response to Geological Hazard Site Assessment, dated November 18, 2023, with attached Assessment by Stratum Group, dated November 15, 2022
33. Third-Party Review of Geological Hazard Site Assessment, prepared by The Watershed Company, dated January 18, 2023
34. Evergreen Islands Response to The Watershed Company Third-Party Review, dated March 3, 2023, with attached Response to Third-Party Review by Stratum Group, dated March 2, 2023
35. Revised Third-Party Review of Geological Hazard Site Assessment, prepared by The Watershed Company, dated January 18, 2023²
36. Notice of Public Hearing, published June 8, 2023
37. Skagit County GIS Map of Subject Parcels and 300-Foot Buffer, undated
38. Addendum to Staff Report, dated June 28, 2023
39. Memorandum to Hearing Examiner, dated June 28, 2023
40. Third Round of Public Comments, various dates
41. Staff Hearing Presentation, presented June 28, 2023
42. Presentation of Tom Glade, presented June 28, 2023

² The revised exhibit was received March 31, 2023, but was still dated January 18, 2023.

The Hearing Examiner enters the following findings and conclusions based upon the testimony and exhibits admitted at the open record remand hearing:

FINDINGS

Procedural History

1. On August 26, 2020, and continued on October 14, 2020, the Hearing Examiner held an open record public hearing to consider a request by Bill Wooding, on behalf of Lake Erie Pit, LLC (Applicant), to expand an existing gravel mine located in the vicinity of Lake Erie, off Rosario Road, from its current 17.78 acres to the proposed size of 53.5 acres. Following the hearing, the Hearing Examiner issued a decision approving the expansion of the gravel mine, subject to conditions. Following the Hearing Examiner's decision, Evergreen Islands (Appellant), a nonprofit corporation based on Fidalgo Island, appealed the decision to the Skagit County (County) Board of County Commissioners. *Exhibit 38, Addendum to Staff Report, pages 1 through 4; Exhibit 24; Exhibit 25; Exhibit 39.*
2. On February 3, 2021, the Board of County Commissioners adopted Resolution R20210038, remanding the matter to the Hearing Examiner, under the Skagit County Code (SCC), in the following terms:

Pursuant to SCC 14.60.170(10)(3),³ this matter is hereby REMANDED to the Skagit County Hearing Examiner for further consideration of the following matters:

- Whether the steep area to the west/northwest of the Mine requires the preparation of a Geologically Hazardous Area Site Assessment, consistent with SCC 14.24.400–.420.
- If so required, directing the Applicant to prepare a Geologically Hazardous Area Site Assessment, all consistent with SCC 14.24.400–.420 and the Hearing Examiner's discretion; and
- Any additional proceedings as may be necessary to take additional evidence related to the Geologically Hazardous Area Site Assessment, to be managed at the Hearing Examiner's discretion; and
- The imposition of such additional conditions as may be necessary to mitigate risks identified by the supplemental proceedings hereby ordered, to the extent such risks can be reasonably mitigated.

³ As of the date of this decision, SCC 14.60.170 is no longer a valid citation. The correct citation for appeals to the Board of County Commissioners would now be SCC 14.06.170.

All other issues raised by the Appellant on this appeal are hereby DENIED, and the Hearing Examiner in all other respects is AFFIRMED.
Exhibit 38, Addendum to Staff Report, pages 1 through 4; Exhibit 26; Exhibit 39.

3. The Hearing Examiner directed Skagit County (County) staff to require the Applicant, Lake Erie Pit, LLC, to prepare a Geologically Hazardous Area Site Assessment, whereupon County staff was to provide an amended staff report to the Hearing Examiner. Pursuant to the Hearing Examiner's direction, County staff sent several letters to the Applicant requesting the Applicant to supply the required information. County staff decided that the Applicant's response to these requests was not timely, and on July 21, 2021, staff informed the Applicant that the application was denied for lack of timely response. The Applicant appealed this denial to the Hearing Examiner, who reversed the denial in an order dated October 18, 2021. The Hearing Examiner ordered the Applicant to provide a Geologically Hazardous Area Site Assessment by the end of September 2022, which the Applicant subsequently did. Following several rounds of review by the County, its third-party consultant The Watershed Company, and members of the public, including the Appellant, Evergreen Islands (all discussed below), the County set a new date for a public hearing on remand for the Hearing Examiner to consider the Geologically Hazardous Area Site Assessment and issue a decision on remand, consistent with the direction of the Board of County Commissioners in Resolution R20210038.
Exhibit 38, Addendum to Staff Report, pages 1 through 4; Exhibits 30 through 36; Exhibit 39.
4. Consistent with the Board of County Commissioners' direction, the Hearing Examiner will not revisit issues other than those related to the Geologically Hazardous Area Site Assessment and the County staff and public responses thereto. All other findings and conclusions set forth in the original decision, dated November 30, 2020, remain undisturbed and are hereby incorporated by reference. *Exhibit 24.*

Notice of Public Hearing on Remand

5. On June 8, 2023, the County published notice of the public hearing on remand. The notice was published in the *Skagit Valley Herald* newspaper, posted on the subject property, mailed to neighboring landowners within 300 feet of the subject parcel, and mailed and emailed to all parties of record. *Exhibit 38, Addendum to Staff Report, pages 1 through 4; Exhibit 36.*

Issues on Remand

6. County staff reviewed the Applicant's Geologically Hazardous Area Site Assessment, and the materials provided by the Applicant and public in response thereto, to determine whether the Geologically Hazardous Area Site Assessment satisfied the direction of the Board of County Commissioners. Staff reviewed the materials submitted, the special use permit criteria, the Hearing Examiner's original decision, and the previous issued SEPA

*Findings, Conclusions, and Decision on Remand
Skagit County Hearing Examiner
Lake Erie Pit, LLC SUP
Special Use Permit, No. P16-0556*

MDNS. Staff concluded that these materials were adequate to respond to the Board of County Commissioners remand, and that the proposed expansion should be approved, subject to both the conditions in the Hearing Examiner's original decision and five new conditions recommended by staff. *Exhibit 38, Addendum to Staff Report, pages 1 through 4; Exhibit 7; Exhibit 24; Exhibits 31 through 35; Exhibit 39.*

Geologically Hazardous Area Site Assessment

7. The Geologically Hazardous Area Site Assessment (Wood Assessment) was prepared by Wood Environment & Infrastructure Solutions, Inc. (Wood), on August 11, 2022. The Assessment involved a site visit to the existing gravel pit and the proposed expansion area. The Assessment also relied on previously published reviews of site geology and groundwater:
- Lake Erie Pit Well Reconnaissance (NWGC, 2019)⁴;
 - Observation Well Installation (Maul Foster Alongi, 2017)⁵; and
 - Hydrogeologic Site Assessment Report (Maul Foster Alongi, 2016).⁶

Wood also reviewed County LIDAR imagery for evidence of erosion along the coastal bluffs northwest of the site—the steep areas identified by the Board of County Commissioners as the reason for the remand. Wood determined that:

The head scarp of the nearest coastal bluff is approximately 300 feet northwest of the northwest sidewall of the existing Pit 1 and is approximately 800 feet northwest of the proposed expansion. Rosario Road runs between the site and the coastal bluffs, and the cut slope between Rosario Road and the site is clearly visible. The cut slope graded for Rosario Road is not considered a geologic hazard as it is not a natural slope but is an engineered and maintained slope.

Relying on the three previous studies cited above, Wood determined that groundwater flow from the mine site flows north and northeast, toward Lake Erie, not west or northwest toward the coastal bluffs. In a section of the Assessment devoted specifically to the coastal bluffs, Wood stated that the proposed expansion would not have any impact on the bluffs. The bluffs are too far away (300 to 800 feet), and groundwater from the site does not flow in that direction. Nor would the mine affect the elevation of the groundwater table, because excavation at the mine will not extend down into the groundwater table. Stormwater from the mine will be managed and infiltrated on site and would not affect slope stability. *Exhibit 31.*

Evergreen Islands Response to Geologically Hazardous Area Site Assessment

⁴ In the record as Exhibit 12.

⁵ In the record as Exhibit 10.

⁶ In the record as Exhibit 9.

8. The first response to the Wood Assessment came from Evergreen Islands, the Appellant to the Hearing Examiner's original decision. Evergreen Islands submitted a comment dated November 18, 2022, with an attached review by geologist Dan McShane, of Stratum Group, dated November 15, 2022. In his November 2022 review, Mr. McShane called the County's attention to a March 23, 2021, communications between County staff and the Applicant (Exhibit 28), which occurred following the remand from the Board of County Commissioners but before the Applicant had submitted any responsive materials. In the March 23, 2021, communication, County staff requested that the Applicant supply certain specific analyses in respond the remand:
- Analyze the landslide risk arising from the potential for increased groundwater migration to the west/northwest of the mine due to the proposed expansion and attendant removal of soil and vegetation which could alter groundwater behavior in the vicinity of the mine.
 - Analyze the presence of springs on the coastal bluff to the northwest of the mine that are at an elevation down gradient of the inferred groundwater level.
 - Respond to the testimony of the professional geologist who identified that the proposed mine expansion will create an increased landslide risk.

Mr. McShane argued that the Wood Assessment had not supplied analysis of these specific issues. Instead, the Wood Assessment had simply relied on the three earlier reports, which, according to Mr. McShane, did not analyze the groundwater flow direction toward the coastal bluffs, did not discuss the presence of springs in the coastal bluffs, and did not respond to Mr. McShane's earlier comments. *Exhibit 28; Exhibit 32.*

Third-Party Review

9. The next response came from the County's third-party reviewer, The Watershed Company, which reviewed both the Wood Assessment and Mr. McShane's November 2022 response. In its Third-Party Review, the Watershed Company reviewed the three groundwater analyses that the Wood Assessment had relied upon, and which Mr. McShane had called inadequate. The Watershed Company found no discrepancies or inaccuracies in the data collection or analysis, nor anything else that would call into question the determination that groundwater flows in a northeasterly direction (in other words, away from the coastal bluffs). According to The Watershed Company:

The lithology is reasonably consistent with the well logs, the groundwater levels were developed from a comprehensive mass well measurement, and the flow paths were plotted perpendicular to the groundwater surface contours. The aquifer is well characterized at recorded depths and static water levels. The prevailing groundwater flow path is to the north and northeast of the proposed project.

The Watershed Company discussed the mine’s potential to threaten bluffs to the west and southwest of the proposed mine expansion and found that the bluffs were 800 to 1,000 feet from the proposed expansion area. It concluded that groundwater seepage coming from the bluffs is likely from a regional aquifer. The Watershed Company found no reason to conclude that the proposed mine would change the rate or volume of groundwater seeping from the bluffs.

In its January 18, 2023, report the Watershed Company also provided its own additional report, dated November 25, 2022, regarding the project, in which it had reviewed a test well dug in 2017 for the project and had determined that, consistent with other reports, groundwater flow was likely to the north/northeast. *Exhibit 33.*⁷

Evergreen Islands Response to Third-Party Review

10. On March 3, 2023, Evergreen Island provided a response to the Third-Party Review, with an attached report by its geologist, Mr. McShane, dated March 2, 2023. In his March 2023 review, Mr. McShane argued that The Watershed Company had focused on bluffs to the west and southwest of the proposed mine site, not bluffs to the west and northwest of the site. Mr. McShane argued that the springs in the coastal bluffs to the northwest of the site had never been identified or discussed by anyone other than himself, and this omission was not consistent with the County’s guidance of March 23, 2021 (Exhibit 28). He also argued that there has never been any direct measurement of groundwater elevations between the mine site and the northwest bluffs—all previous assessments were based on measurements nearby, but not directly along that flow path. Mr. McShane argued that these previous assessments were flawed even on their own terms, in that water levels measured directly by Northwest Groundwater Consultants (NWGC) (one of the three studies relied on by the Wood Assessment) were 50 feet and 35 feet lower than those identified on the groundwater contour map produced by Maul Foster (the other two of the three studies relied on by the Wood Assessment). Mr. McShane argued that springs in the coastal bluffs to the northwest of the site were a major driver of the slopes’ instability, and that groundwater flow to the bluffs, if it does indeed occur, could contribute to these springs. According to Mr. McShane, “The role of groundwater flow to the bluff remains unevaluated.” *Exhibit 34.*

Public Comments

11. The County received public comments from dozens of individuals. In summary, the overwhelming majority of these comments called for additional studies of slope stability. Commenters argued that the materials submitted on remand did not constitute a new study but merely a rehash of old material. Commenters argued that the proposed mine expansion would further destabilize bluffs in the area (not just the bluffs to the northwest,

⁷ A revised version of the Third-Party Review (Exhibit 33) appears in Exhibit 35, but that exhibit merely changes the format of the Exhibit 33 version. It does not change the text. *Exhibit 38, Addendum to Staff Report, page 3; Exhibit 35.*

but also to the west and southwest) and that houses atop the bluffs could be jeopardized as a result. Several of the comments identified the presence of springs in the coastal bluffs. Some of the comments also raised issues unrelated to slope stability, such as noise, traffic, and air quality, each of which, commenters argued, would be worsened by the proposed mine expansion. *Exhibit 39.*

12. One of the comments included an attached geological assessment, the “Geary Preserve Bluff Geological Assessment,” prepared in support of Skagit County project no. 21-051, and dated August 12, 2021. The Geary Preserve Assessment analyzed coastal bluffs to the west/northwest of the mine site—the same that are the basis for the remand—albeit the Geary Preserve Assessment was for a project unrelated to the proposed mine expansion. The Geary Preserve Assessment observed “intermittent seepage within the lower exposed bluff as well as widespread colluvium at the base of the bluff.” The Geary Preserve Assessment found that:

Drainage patterns near the bluff crest were altered by development of the road and parcels, along with roadside ditch installation. As the headscarps for these large landslides are some distance from the beach and separated by narrow channels, landslides of this type are likely not triggered by marine erosion and rather by groundwater, surficial wetness, and the stratigraphy of the bluff, although long-term wave attack does result in the bluffs being in an “oversteepened” condition in much of the bluff shore. Bluff toe erosion from wave attack was not commonly observed during our field visit.

However, the Geary Preserve Assessment did not analyze groundwater flow direction in the vicinity of the coastal bluffs or the mine site. It did not mention the mine as a contributor to the altered drainage patterns that affect the stability of the bluffs. Instead, as quoted above, it cited the development of the roads and parcels, which lie closer to the bluffs than the mine site does. The Geary Preserve Assessment specifically cited the actions of some homeowners as contributing to the erosion of the coastal bluffs, including “performing maximum view enhancement actions by topping or excessively limbing trees, likely contributing to increased slope instability.”

The Geary Preserve Assessment recommended restrictions on coastal homeowners’ activities, including avoiding topping trees and less-aggressive limbing of trees. It recommended that homeowners use swales to deal with stormwater whenever possible, rather than tightlines down the bluffs, and that any tightlines that are necessary be made of high-density polyethylene instead of cheaper, more failure-prone plastics. In some cases, the Geary Preserve Assessment stated that houses that are too close to the bluffs may need to be relocated landward: “House relocation is becoming more common in the greater Puget Sound area ... and offers owners more security and the ability to work on

other long-term issues.” The Geary Preserve Assessment did not analyze the existing mine or the proposed mine expansion, nor did it include any recommendations for or against mine expansion. *Exhibit 39.*

Testimony

13. Kevin Cricchio, County Senior Planner, testified generally about the application, the procedural history of the case, and the County’s review of the materials provided on remand. He testified that the project site has had an active mine on the properties since the 1960s. The proposal includes the expansion of an existing gravel and sand mine operation from approximately 17.78 acres to approximately 53.5 acres. The site is accessed from Rosario road from a gated gravel driveway. The mining operation proposes to remove approximately 60,000 tons per year of gravel and sand for approximately 60 years for a total of approximate 3,600,000 tons of material. There will be no rock screening, rock crushing, or blasting. A 100-foot buffer will be maintained around the site.

Mr. Cricchio set forth the procedural history of the original decision, the appeal, the remand, the denial of the application, and the reversal of the denial, leading to today’s hearing on remand. He described the Geologically Hazardous Area Site Assessment and the third-party and Appellant reviews thereof. Based on the Geologically Hazardous Area Site Assessment, Mr. Cricchio recommended approval of the mine expansion with five new conditions, as well as leaving undisturbed the conditions of approval in the Hearing Examiner’s original decision. The five new conditions include reimbursement of the County for the expense of Third-Party Review, plus compliance with the recommendations in the Geologically Hazardous Area Site Assessment and Third-Party Review reports. Mr. Cricchio acknowledged that he is not a geologist, but the geologists’ reviews and recommendations struck him as adequate and reasonable to allow the project to move forward. *Testimony of Kevin Cricchio.*

14. Todd Wentworth is the consulting geotechnical engineer to the Applicant and the author of the Geologically Hazardous Area Site Assessment. He testified that he relied on the hydrogeology reports cited in his report to determine that groundwater would not flow in the direction of the coastal bluffs to the northwest of the mine site. He concluded that standard mine buffers and the normal mine reclamation process would be adequate to protect slopes in the vicinity. He did not see any reason to require the Applicant to take any mitigation measures other than those that would apply to any mine anywhere.

Mr. Wentworth acknowledged, in response to the testimony of Dan McShane (summarized below), that groundwater does seep out of the coastal bluffs to the northwest of the mine site. He deferred to hydrologist Thomas Mullen (whose testimony is also summarized below) as to whether the mine would change the flow direction of groundwater. But, if the mine did not change the flow direction of groundwater, then Mr.

Wentworth was comfortable in his assessment that the mine would not increase the danger of slope instability. *Testimony of Todd Wentworth.*

15. William Wooding is the Applicant Representative and owner of the mine. He testified that the mine pit has actually been there since the 1930s. He had been the owner and operator since the 1960s. He recognized that his mine required a special use permit because it had exceeded certain limits in the code. He testified that the actual volume of material leaving the mine would, in all likelihood, be far lower than the numbers Mr. Cricchio had cited as a possible maximum. He affirmed that, in his opinion and experience, water from the mine had always drained to the north or east, not the west. *Testimony of William Wooding.*
16. Thomas Mullen, geologist, is a project consultant for the Applicant. He is affiliated with Northwest Groundwater Consultants (NWGC). He prepared some of the underlying hydrology reports upon which Mr. Wentworth based the Geologically Hazardous Area Site Assessment. Mr. Mullen testified that he did a well reconnaissance in March 2019 in which he measured groundwater levels in three wells in and around the mine pit. Based on these measurements, he concluded that groundwater was flowing off the site in a north/northeasterly direction.

Mr. Mullen acknowledged the existence of springs in the coastal bluffs to the northwest of the mine site, as identified in the review of Mr. McShane. He testified that he did not believe groundwater flow from the mine site would have a detrimental effect on those springs. He acknowledged that he had not reviewed the Geologically Hazardous Area Site Assessment.

In response to Mr. McShane's testimony (summarized below) and Mr. Wentworth's testimony (summarized above), Mr. Mullen testified that there are no groundwater monitoring wells to the northwest of the mine site. He testified that excavation of the mine will not go down to the groundwater table but rather will be 50 to 100 feet above groundwater. He believed that stormwater conveyances would mitigate any infiltration of stormwater into the groundwater table and thus, nothing about the mine's operation would affect the groundwater table in the vicinity of the coastal bluffs. *Testimony of Thomas Mullen.*

17. Kyle Loring, attorney for Appellant Evergreen Islands, argued that the Board of County Commissioners had remanded the Hearing Examiner's original decision to consider issued raised by geologist Dan McShane regarding groundwater flow, and that the materials now before the Examiner did not consider those issues. Mr. Loring argued that, although some groundwater may flow north or northeast, as described by Mr. Mullen, it did not preclude that other groundwater may flow northwest—a possibility, he argued, that has never been studied by any of the reviewers. He said the Geologically Hazardous

Area Site Assessment simply assumed away the issue by relying on earlier groundwater studies that were already in the record prior to the remand. No new, physical investigations have been conducted. The third-party reviewer also did not conduct its own physical investigations and even appeared to misunderstand which coastal bluffs concerned the County Commissioners—the northwestern bluffs, not the southwestern bluffs or Dodsden Canyon. *Testimony of Kyle Loring.*

18. Dan McShane, geologist from the Stratum Group hired by Evergreen Islands, testified about his review of the Geologically Hazardous Area Site Assessment prepared by Wood and the Third-Party Review prepared by The Watershed Company. Mr. McShane testified that he had done some earlier work on the coastal bluffs to the northwest of the mine site, which is how he knew about the springs in the bluff in the first place. He described the springs as evidence of a “blowout failure,” a form of slope instability, a photograph of which is in his report of March 2, 2023 (attachment to Exhibit 34). Mr. McShane testified that the LIDAR imagery (also in Exhibit 34) shows that slope failures intrude quite far landward of the coast, such that groundwater from the mine site could, potentially, interact with the slope failures. He acknowledged that groundwater from the mine flows east, but he said that flow direction was due to the presence of a layer of glacial till. If glacial till were to be removed in the course of mining, the groundwater flow direction could change. Potentially, it could flow to the northwest and interact with the slope failures, by contributing additional groundwater to the groundwater that already seeps out from the coastal bluffs to the northwest. This possibility, of changed groundwater flow, is the main issue he believed required additional study. Mr. McShane acknowledged that he, himself, had not studied whether groundwater would flow to the northwest if mining were expanded. He testified that the elevation of the springs of 165 to 175 feet implied that groundwater, or at least a portion of groundwater, was “probably” flowing northwest, because the springs are downgradient of groundwater at the mine site. He thought that the proposed mine could “very well” affect the groundwater table at the coastal bluffs, because the groundwater table at the proposed mine site is higher than the springs and because the mine could remove some of the overlying glacial till which current directs groundwater to the northeast. *Testimony of Dan McShane.*
19. Tom Glade, the vice president of Evergreen Islands, testified that slope erosion reaches all the way to Rosario Road. There have been landslides in the area in the past, and the bluffs are eroding during storms. He testified that the mine expansion would jeopardize Rosario Road. *Testimony of Tom Glade.*
20. Marlene Finley is on the board of directors of Evergreen Islands. She testified that the application is not ripe for decision because the application is incomplete. She said the materials still do not address risks from landslide, so the materials are not responsive to the County staff and County Commissioners’ concerns. *Testimony of Marlene Finley.*

21. Brian Wetter is a member of Evergreen Islands. He described the history of the organization as a 501(C)(3) organization in existence in and around Fidalgo Island since 1978. He spoke highly of Applicant Mr. Wooding's community activities over many years. Mr. Wetter said the Applicant's geotechnical consultants had served him poorly because they were still failing to analyze the risks that the County Commissioners raised. No new work had been done, and no new on-site data has been collected. *Testimony of Brian Wetter.*
22. Micael Raphael is a member of Evergreen Islands. She lives approximately 1,200 feet from the proposed mine expansion. She argued that a Department of Ecology map shows that 50 percent of all water will run west of the mine toward the coastline. She said that previous studies in the area had revealed issues related to slope instability. She said the mine expansion would jeopardize lateral slope support on properties adjacent to the mine, in violation of SCC 14.26.465. *Testimony of Micael Raphael.*
23. Konrad Kurp is a member of Evergreen Islands and a civil engineer. He testified favorably about the Applicant as a person, but he said the proposed mine expansion still needed review because the geologists had not done the work required. Seepage on the northwest cliffs implies there is an underlying clay layer that pushes the water out of the cliff face. The mine is above that clay layer. The increase in groundwater infiltration at the expanded mine site is significant, because the clay layer will have been removed by mining. The clay layer currently forces runoff to the northeast, but once it is gone, groundwater may run in a different direction. Mr. Kurp recommended that the mine not be expanded. *Testimony of Konrad Kurp.*
24. Jan Heald Robinson is on the board of Evergreen Islands and a neighbor of the existing mine pit. She said that members of the community who oppose the mine are not newcomers. Her own family has been there since in the 1890s. She testified that 16 homes on the bluff above Burrows Bay will be placed at risk by the expansion of the mine. An additional 75 homes risk losing their water systems. Rosario Road was also placed at risk. She said that new studies were required prior to approval of the proposed mine expansion, as requested by the County. *Testimony of Jan Heald Robinson.*
25. Linda Dobbs is a member of Evergreen Islands and a member of the Sunset Lane Homeowners Association (HOA). The HOA is very close to the entrance to the pit, north and west of the mine site along the bluff. She said one of the member homeowners had suffered one of the cliff blowouts. Ms. Dobbs said the Commissioners had one requirement: an analysis of groundwater to the northwest. She said no such analysis had been done. *Testimony of Linda Dobbs.*
26. Brinkley Meyers testified that she and her husband live in one of the houses on Rosario Road that are at risk. She was the commenter who had submitted into the record the

“Geary Preserve Bluff Geological Assessment” in Exhibit 39. She said the Geary Preserve Assessment directly contradicted the Applicant’s materials with regards to groundwater flow and rainwater flow. Ms. Meyers testified that the slope below her property is eroding. She said the Skagit County Shoreline Master Program recommending halting any works in the area because of its instability. She said the County had told her she couldn’t build so much as a stairway down the bluff, so she did not understand why the nearby mine could be expanded. *Testimony of Brinkley Meyers.*

27. Franky Parker is the president of the Sunset Lane Homeowners Association. He testified that every member of the HOA is opposed to the mine expansion. He said blowouts in the bluff are already happening. He said the absence of groundwater monitoring wells to the north and northwest of the mine was unacceptable. He said that County property was available for wells to be drilled. He said the Geary Preserve Assessment shows depressional erosion to the northwest of the mine site. Mr. Parker said that there could be another clay layer that nobody knows about. In addition, he said that mine reclamation would not occur for 60 years, so water seepage needed to be analyzed now. He said the new analysis was based on old data, which did not look at the west side of Rosario Road but only at the east of the Rosario Road. *Testimony of Franky Parker.*
28. Jake Olliffe testified that the mine expansion will collect more water. The additional water will lead to more danger for nearby homes. The springs in the bluffs are already substantial—so much so that his dog can drink from them. *Testimony of Jake Olliffe.*
29. Heidi Fish testified that the County’s first priority should be to keep the community safe and healthy and harmonious. She said there needed to be new hydrological studies to assess the direction of groundwater flow. She said the slopes are not stable, and her own backyard is eroding. She also said the gravel pit wall was not stable. She urged the Hearing Examiner to deny the application outright. *Testimony of Heidi Fish.*
30. Deanna Claus testified favorably about the Applicant’s character. She said the expansion of the pit was a scary idea because of the slope instability. She said the mine was already quite large and would only be more daunting if the mine were enlarged. She also wondered whether the expanded pit would affect nearby homes’ water wells. *Testimony of Deanna Claus.*
31. Stewart Toshach is an environmental scientist who lives adjacent to Dodsens Canyon. He said the mine would affect his property. He argued that the purpose of the permit should be to mitigate environmental harms from past mining, not to allow new mining. Mr. Toshach said that the proposal would outlive the Applicant. He argued that the data in the record was insufficient to evaluate groundwater impacts to Dodsens Canyon. Groundwater impacts to Dodsens Canyon and other bluffs could jeopardize homes. Mr. Toshach said that building permits for other projects in the area force homeowners to

build 300 feet back from the slope and face other permitting hurdles due to the slopes' instability. Yet this mine, a far larger project, was being allowed to proceed. He said geotechnical drilling in many locations around the site was the only way to learn which direction the groundwater flows. *Testimony of Stewart Toshach.*

32. Ellen Bynum is the executive director for Friends of Skagit County. She said the mission of Friends of Skagit County is to appeal bad land use decisions. She said the County had failed to obtain sufficient information to evaluate the proposed expansion. There was insufficient information about groundwater flow, groundwater levels, hydrological mapping, identification of aquifers, and springs and seepage from the bluffs. Ms. Bynum suggested that the Applicant be required to submit a mining plan and furnish the missing information. She said the County should bring in consultants to reduce the risk if the County was not able to evaluate the risk itself. *Testimony of Ellen Bynum.*

Staff Recommendation

33. Mr. Cricchio testified that the County staff recommends that the Hearing Examiner approve the SUP request, with five new conditions. *Testimony of Kevin Cricchio; Exhibit 38, Addendum to Staff Report, page 4.*

CONCLUSIONS

Jurisdiction

The Hearing Examiner generally has jurisdiction to hear and decide requests for special use permits (SUPs) related to mining. *SCC 14.16.440(9)*. The Board of County Commissioners remanded the Hearing Examiner's original decision for further consideration by the Hearing Examiner in Resolution R20210038, dated February 23, 2021. *Exhibit 26.*

Criteria for Review on Remand

As noted above, the Board of County Commissioners upheld the Hearing Examiner's original decision on all issues, except the Hearing Examiner was required to consider the following on remand:

- Whether the steep area to the west/northwest of the Mine requires the preparation of a Geologically Hazardous Area Site Assessment, consistent with SCC 14.24.400–.420.
- If so required, directing the Applicant to prepare a Geologically Hazardous Area Site Assessment, all consistent with SCC 14.24.400–.420 and the Hearing Examiner's discretion; and
- Any additional proceedings as may be necessary to take additional evidence related to the Geologically Hazardous Area Site Assessment, to be managed at the Hearing Examiner's discretion; and

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- The imposition of such additional conditions as may be necessary to mitigate risks identified by the supplemental proceedings hereby ordered, to the extent such risks can be reasonably mitigated.

Exhibit 26.

Conclusions Based on Findings

- 1. The steep area to the west/northwest of the Mine requires the preparation of a Geologically Hazardous Area Site Assessment, and one was submitted by the Applicant.** The Hearing Examiner previously determined that a Geologically Hazardous Area Site Assessment was required in his order dated March 9, 2021. A Geologically Hazardous Area Site Assessment is warranted in light of the many homes that lie atop the coastal bluffs to the west and northwest of the proposed mine expansion, the known history of erosion and landslides atop those bluffs, and the disagreement among professional geologists about the safety of the proposed mine expansion with regards to its potential impacts to groundwater flow. *Findings 3; 6 – 33.*
- 2. The Geologically Hazardous Area Site Assessment is consistent with SCC 14.24.400–.420 and the Hearing Examiner’s discretion.** The Hearing Examiner exercises his discretion to conclude that the geologically hazardous area site assessment is compliant with the Board of County Commissioner’s order on remand. The Geologically Hazardous Area Site Assessment prepared by Wood does not, strictly speaking, comply with SCC 14.24.420. That section requires specific elements to appear in an assessment, including:
 - (a) A site plan depicting the height of slope, slope gradient and cross section indicating the stratigraphy of the site. The site plan shall indicate the location of all existing and proposed structures and any significant geologic features such as outcrops, springs, seeps, ponds, streams or other water bodies; and
 - (b) An assessment of the geologic characteristics and engineering properties of the soils, sediments, and/or rock of the subject property and potentially affected adjacent properties. Soils shall be described in accordance with the Unified Soil Classification System; and
 - (c) A description of load intensity, surface and groundwater conditions, public and private sewage disposal systems, fills and excavations and all structural development; and

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- (d) A description of the extent and type of vegetative cover including tree attitude; and
- (e) For potential coastal bluff geologic hazards: estimate of the bluff retreat rate, which recognizes and reflects potential catastrophic events such as seismic activity or a 100-year storm event; and
- (f) For potential landslide hazards: estimate slope stability and the effect construction and placement of structures will have on the slope over the estimated life of the structure. Quantitative analysis of slope stability or slope stability modeling may be required by the Administrative Official; and
- (g) Additional site assessment elements may be required by the Administrative Official.

SCC 14.24.420(2).

Here, the Wood Assessment does not include an estimate of the coastal bluff retreat rate (criterion (e)), nor an estimate of the coastal bluff's slope stability over the life of structures placed atop the bluff (criterion (f)). The Hearing Examiner concludes, however, that such elements are not necessary in this case. The proposed mine expansion is not being built within 200 feet of a known or suspected risk, as contemplated in SCC 14.24.420(1), nor within "a distance from the base of a landslide hazard area equal to the vertical relief," as also contemplated in SCC 14.24.420(1). The existing mine is approximately 300 feet from the bluffs; the proposed expansion is approximately 800 feet. Thus, under SCC 14.24.420(1), a geologically hazardous site assessment would not normally be triggered in the first place. Instead, a geologically hazardous site assessment has been ordered out of an abundance of caution in light of the possibility of groundwater flow from the proposed mine expansion to the bluffs northwest of the site. Given that the trigger for the assessment falls outside the strict requirements of the code, the Hearing Examiner will exercise the discretion afforded him by Resolution R20210038 not to require strict adherence to the elements of an assessment. The Applicant's Geologically Hazardous Area Site Assessment, as will be discussed below, is adequate to the task required on remand: to assess the possibility that groundwater flow altered by the proposed mine expansion could affect the coastal bluffs northwest of the site. *Findings 1 – 33.*

- 3. The preponderance of the evidence supports the conclusions of the Geologically Hazardous Areas Site Assessment.** The Geologically Hazardous Areas Site Assessment prepared by Wood concluded that the proposed mine expansion would not jeopardize the stability of the coastal bluffs to the northwest of the proposed mine expansion. Author Todd Wentworth was aware of the seeps or springs that emerge from

the coastal bluffs northwest of the mine site. He concluded these seeps or springs are from groundwater. He concluded, however, that groundwater from the proposed mine expansion will not affect the groundwater seeping from the coastal bluffs. That being the case, Mr. Wentworth concluded, in a section of his Assessment specifically devoted to the coastal bluffs, that the mine expansion would not affect the bluffs.

Mr. Wentworth's conclusion that groundwater from the mine expansion will not affect the northwestern coastal bluffs was predicated on his conclusion that groundwater beneath the mine flows north and northeast, not northwest. That conclusion, in turn, was based on the work of hydrologist Thomas Mullen. Mr. Mullen is the only person who has performed a physical investigation of groundwater flow at the mine site. He drilled three test wells in and around the mine pit. Based on those three test wells, as well as the topography of the site, he concluded that groundwater flows north and northeast.

The County's third-party reviewer, The Watershed Company, agreed with the methodology employed in the Wood Assessment by Mr. Wentworth, which in turn relied on the data generated by Mr. Mullen. Thus, the Hearing Examiner concludes that the Applicant made a *prima facie* showing that groundwater flows from the mine site will not increase the jeopardy of the northwestern bluffs—which, as the public testimony and the Geary Preserve Assessment showed, are already unstable and prone to landslides and erosion due to both natural conditions and the actions of homeowners developing their properties atop the bluffs, as well as drainage impacts from Rosario Road.

It is not the case that the Applicant's reviewers and the County's third-party reviewer overlooked the northwestern bluffs. On the contrary, in the testimonies of Mr. Wentworth and Mr. Mullen, and in the written reports of Mr. Wentworth and The Watershed Company, the northwestern bluffs are specifically discussed. It is true, as Mr. Loring noted, that one paragraph in The Watershed Company's January 18, 2023, Third-Party Review is devoted to bluffs to the southwest of the proposed mine. However, that same review also references Evergreen Island's concerns about bluffs to the northwest of the proposed mine, so it is not the case that The Watershed Company was confused about which bluffs were supposed to be the subject of the Geologically Hazardous Areas Site Assessment.

Dan McShane argued, in his written reviews and in his oral testimony, that it is possible that groundwater will flow to the northwest if the proposed mine expansion is excavated. His argument is predicated on the belief that the reason groundwater currently flows to the north/northeast is because of a layer of glacial till. If that layer is removed during mining, then it is possible groundwater will no longer flow north or northeast. It may flow somewhere else, including northwest. If it does flow northwest, it may contribute to groundwater seeping out from the coastal bluffs, which would, in turn, contribute to their

instability. Mr. McShane argues that this chain of possibilities demands further investigation, including test wells dug off-site of the mine to the northwest.

The Hearing Examiner is not persuaded by Mr. McShane's attack on the work of Mr. Wentworth, Mr. Mullen, and The Watershed Company. Mr. McShane has not demonstrated that groundwater will flow to the northwest if the proposed mine expansion is excavated. He supplied no groundwater flow analysis or modeling of his own to show a northwestern flow under various configurations of the mine. His concern about northwestern flow is speculative. That speculation has now been considered in the Wood Assessment and The Watershed Company's review, and those authors did not see any reason to believe northwestern flow would occur.

It is true that the Applicant and third-party reviewers themselves have not conducted groundwater flow analysis or modeling under various configurations of the mine. Part of Mr. McShane's attack on their work is that they should have performed such analysis, including the digging of test wells to the northwest, on the properties not owned or controlled by the Applicant. The Hearing Examiner agrees that such investigations would have led to a stronger, more persuasive Geologically Hazardous Areas Site Assessment, but, in the absence of evidence showing a substantial likelihood that northwestern flow will occur, it is not reasonable to require the Applicant or the County to conduct offsite, physical investigations to rebut speculation that it might occur. A speculative attack on the Geologically Hazardous Areas Site Assessment is not enough to outweigh the authors' and reviewers' conclusions, which were based on on-site wells as well as topographical review.

The order on remand required further assessment of the dangers to the northwestern bluffs. That assessment has now occurred. Not every assessment requires new test wells or modeling. Many assessments (including Mr. McShane's own reviews) are based on a simple site visit and a review of the existing data. Although more testing and more data would always be welcome, the Hearing Examiner cannot conclude that they would be required here. The existing evidence shows groundwater flow from the mine site that does not jeopardize the northwestern cliffs, and none of the evidence put forward in rebuttal shows otherwise. The Hearing Examiner concludes that the Geologically Hazardous Areas Site Assessment, and the evidence in the record, is sufficient to satisfy the order on remand. *Findings 1 – 33,*

4. **Additional conditions are necessary to mitigate risks identified during the supplemental proceedings.** County staff recommended the Hearing Examiner retain the conditions of approval set forth in the original decision and add five new conditions relating to the geotechnical work that has been performed on remand. County staff recommend that recommendations set forth in the Geologically Hazardous Areas Site Assessment, and The Watershed Company's Third-Party Review, be added to the

conditions of approval for the proposed mine expansion. In addition, County staff recommends that the Applicant reimburse the County for the costs the County has incurred in obtaining the Third-Party Review and providing public notice of the remand hearing. The Hearing Examiner agrees that these are reasonable conditions. *Findings 6 and 33.*

DECISION

Based on the preceding findings and conclusions, the Hearing Examiner orders that the original decision, dated November 30, 2020, be **MODIFIED** to include the following new conditions, to supplement the conditions set forth in the original decision:

1. Development shall comply with all recommendations and requirements of the Geologically Hazardous Areas Site Assessment dated August 11, 2022, prepared by Wood Environment and Infrastructure Solutions, Inc.
2. Development shall comply with all recommendations and requirements of the Third-Party Review performed by the Watershed Company, dated January 18, 2023, including the attachment thereto, dated November 22, 2022.
3. All applicable permits (local, state, and federal) must be secured before any mining excavation activities begin onsite. Copies of permits shall be provided to the Skagit County Planning & Development Services Department.
4. The Applicant shall be responsible for reimbursement to Skagit County Planning & Development Services Department for the full cost of mailings and newspaper publication associated with the Notice of Development Application, Notice of Issuance of SEPA MDNS, Notice of Hearing, and Notice of Decision. Payment shall be made prior to any work beginning onsite and grading permit application submittal and/or issuance.
5. The Applicant shall be responsible for reimbursement to Skagit County Planning & Development Services Department for the full cost of Third-Party Review of the Geologically Hazardous Areas Site Assessment. Payment shall be made prior to any work beginning onsite and grading permit application submittal and/or issuance.

DECIDED this 13th day of July 2023.



ALEX SIDLES
Hearing Examiner

PL16-0556:

PDS REVIEW:

PDS Department however hired a third-party consultant (the Watershed Company) to perform peer review of the applicant's Geologic Hazard Site Assessment report and Evergreen Island's comments of the assessment. The Watershed Company reviewed the existing assessment and reports and found:

“no significant discrepancies or inaccuracies in the data collection, hydrogeologic analysis, or discussion that would question the study results. The lithology is reasonably consistent with the well logs, the groundwater levels were developed from a comprehensive mass well measurement, and the flow paths were plotted perpendicular to the groundwater surface contours. The aquifer is well characterized at recorded depths and static water levels. The prevailing groundwater flow path is to the north and northeast of the proposed project.

PL16-0556:

PDS REVIEW (CONTINUED):

Bluff areas to the west and southwest of the proposed project, including the Dodson Canyon Springs, are 800 to 1,000 feet from the project with base elevations (below the scarps) of about 200 ft. msl. Based on documented groundwater surface elevations and local stratigraphy, it is likely that groundwater seepage is from the regional aquifer. I found no apparent reason to conclude the proposed project would change the rate or volume of groundwater discharge from seepage on the bluffs.”

PL16-0556:

PDS REVIEW (CONTINUED):

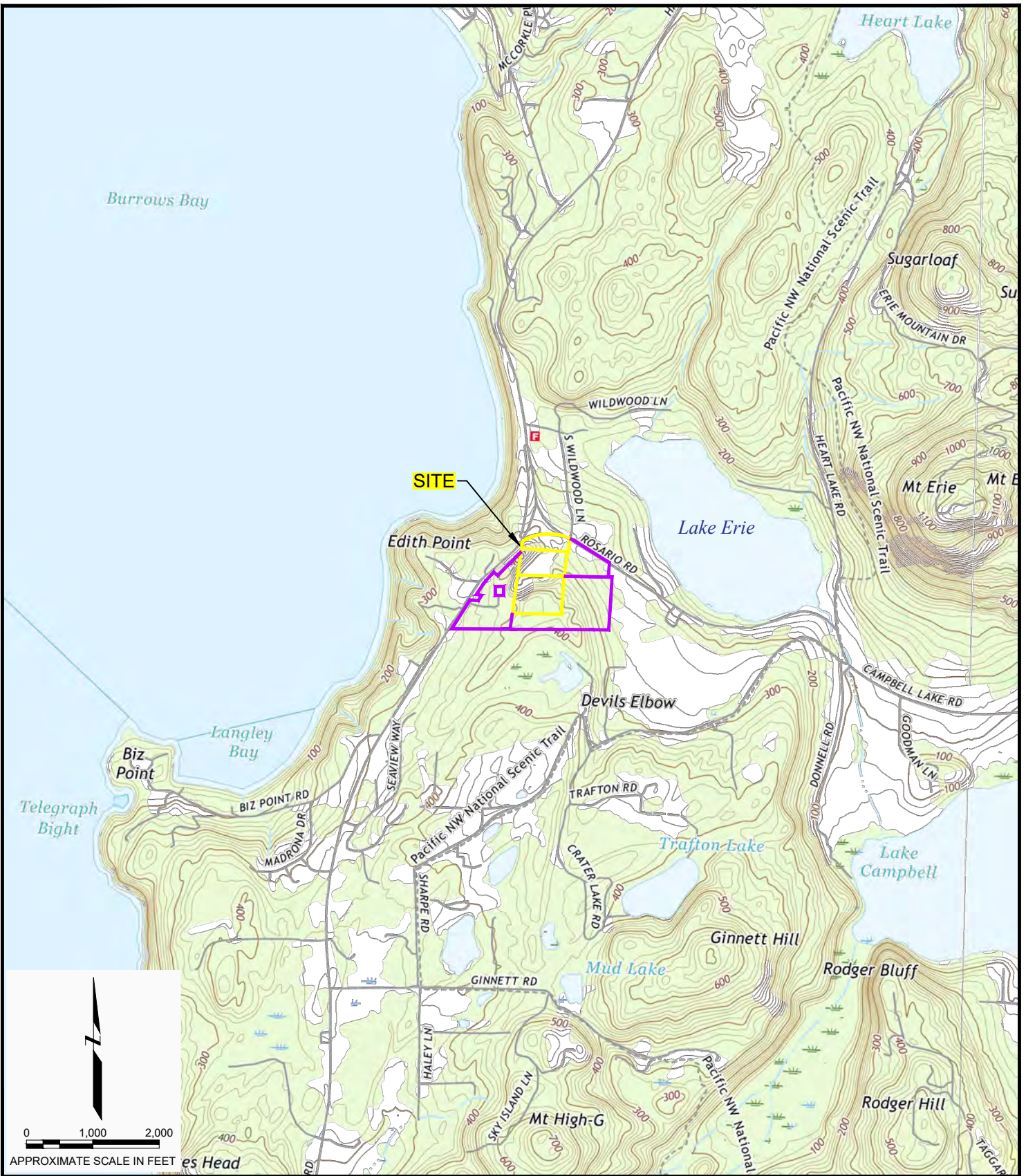
Following the Watershed Company's review, and following review of subsequent comments from Evergreen Islands, PDS believes the concerns raised by the appellants were adequately addressed and the Hearing Examiner correctly incorporated these finding by adding five additional conditions of approval.

Furthermore, PDS believes the items requested of the applicant by former Assistant Planning Director Michael Cerbone in his letter dated March 23, 2021, required by the Hearing Examiner and Board of County Commissioners have been met fully.

PL16-0556:

STAFF RECOMMENDATION:

Based on review of the Record, Skagit County Planning and Development Services Department recommends that the Board of County Commissioners uphold the decision of the Hearing Examiner and deny appeals PL23-0363 and PL23-0380.



CLIENT LAKE ERIE TRUCKING, LLC		PROJECT LAKE ERIE PIT 1 EXPANSION Anacortes, Washington	DATE MAY 2022	
Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033		TITLE SITE VICINITY	SCALE AS SHOWN	PROJECT NO. PS22-20529-0 FIGURE 1

DRAWN BY: APS, CHECKED BY: JKH





Lake Erie

Lake Erie Boat Launch

Rosario Road

Marine Wye Drive

Deane Drive

Rosario Road

Lewis View Lane

Edith Court Road

Sun's Lane

Island Drive

Day-Break Lane

300 600ft

400

Island Drive

Burrows Bay

PUGET SOUND

LAKE ERIE

Sunset Lane

South Windwood Lane

Marine Drive

Wamble Wye Drive

Desane Drive

Edith Point Road

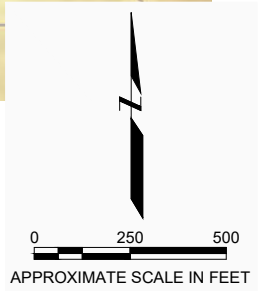
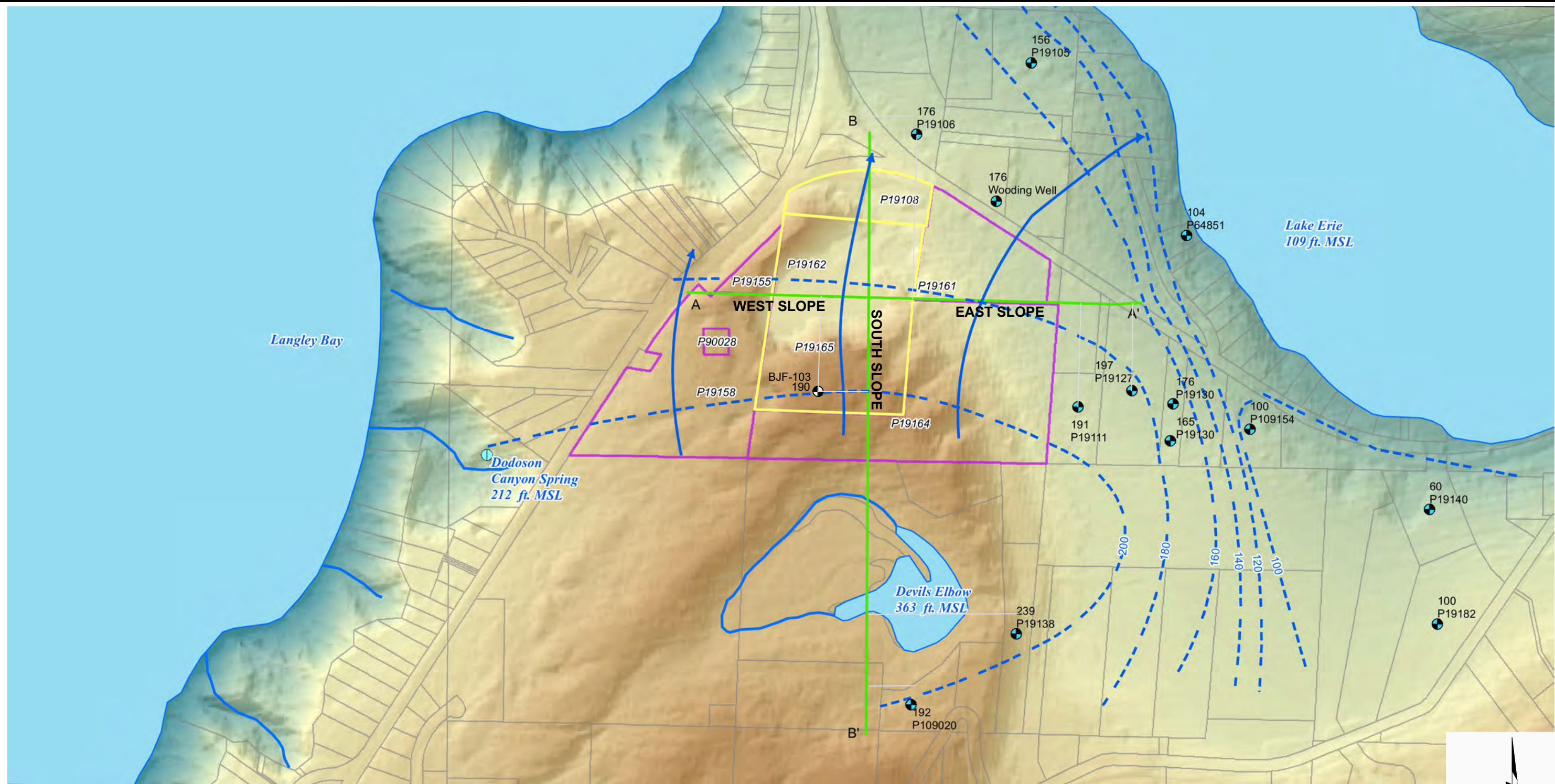
Reservoir Road

Orca Lane

Zelwood Drive

Day Break Lane





Legend

- Inferred Groundwater Surface Elevation Contour (MSL)
- Inferred Groundwater Flow Direction
- Parcel #**
- MSL Well
- Cross Section Transect
- Current Permitted Parcels
- Expansion Parcels
- Parcels

Elevation (Feet MSL)

High : 1270.8
Low : -6.7

CLIENT	LAKE ERIE TRUCKING, LLC
	wood.
	Wood Environment & Infrastructure Solutions, Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033

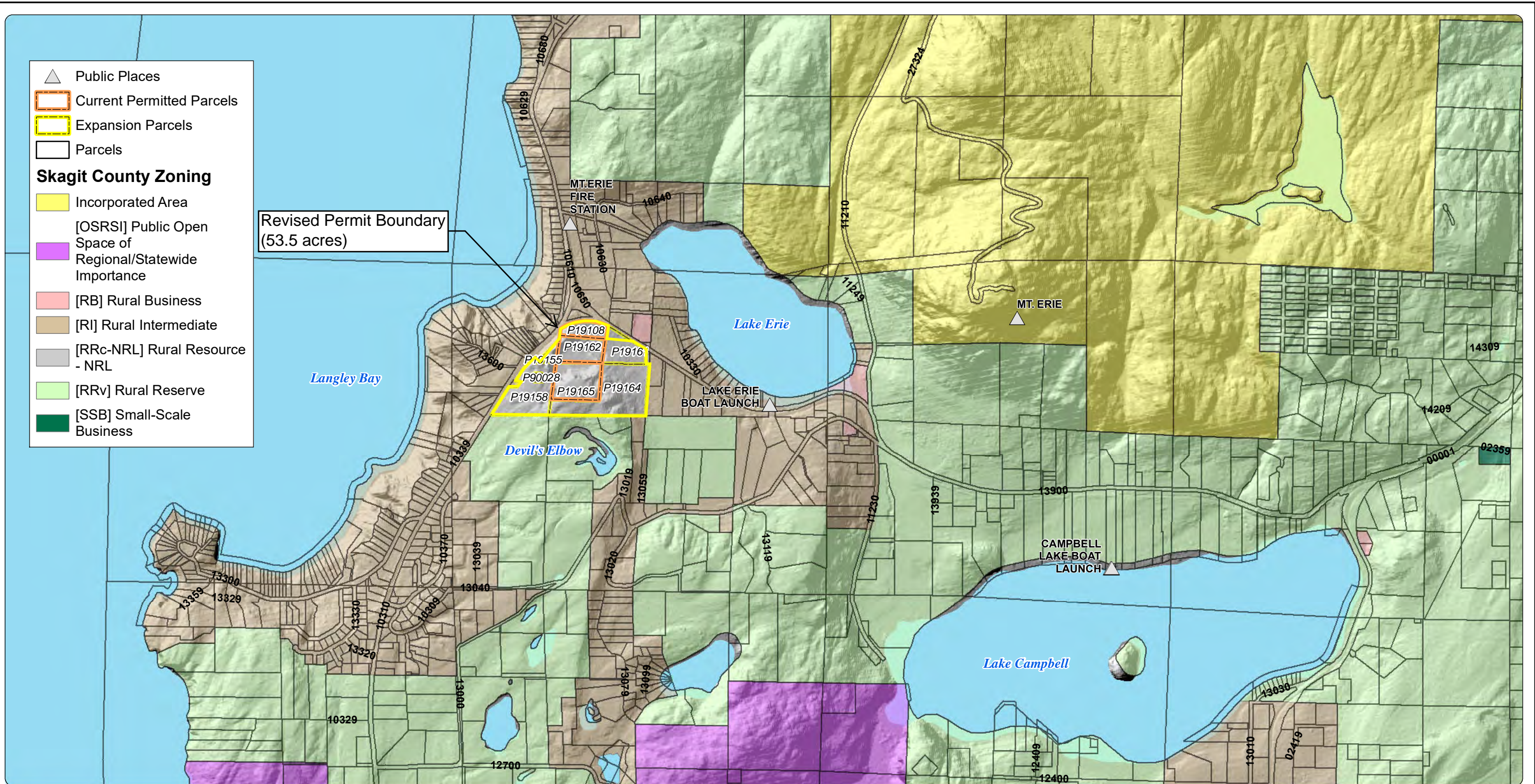
PROJECT	LAKE ERIE PIT PIT 1 EXPANSION Anacortes, Washington
TITLE	PLAN VIEW OF EXPANSION AREA WITH CROSS SECTION LOCATIONS

DATE	MAY 2022
SCALE	AS SHOWN
PROJECT NO.	PS22-20529-0
FIGURE	2

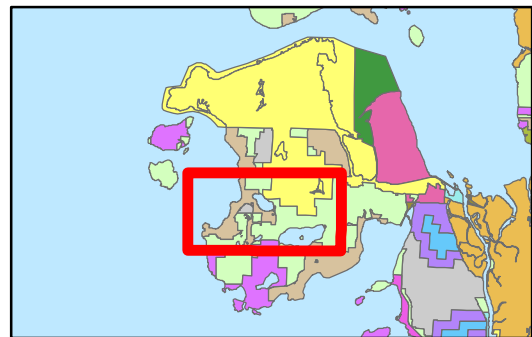
SOURCE:
HYDROGEOLOGIC SITE
ASSESSMENT REPORT

MAUL FOSTER ALONGI
p. 971 544 2139 | www.maulfoster.com

DRAWN BY: PM, CHECKED BY: JKH



Source: Skagit County Zoning.



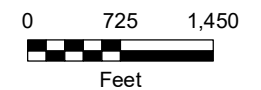
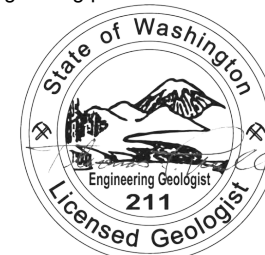
SE Quarter of NW Quarter of Section 11, Township 34, Range 1 East Willamette Meridian.

- Current Mine Operation Permits:
- (1) P19108 - 3.29 acres - Lake Erie Pit - DNR Permit# 70-012635
 - (2) P19162 - 4.49 acres - Lake Erie Pit - DNR Permit# 70-012635
 - (3) P19165 - 10.0 acres - Lake Erie Pit - DNR Permit# 70-012635

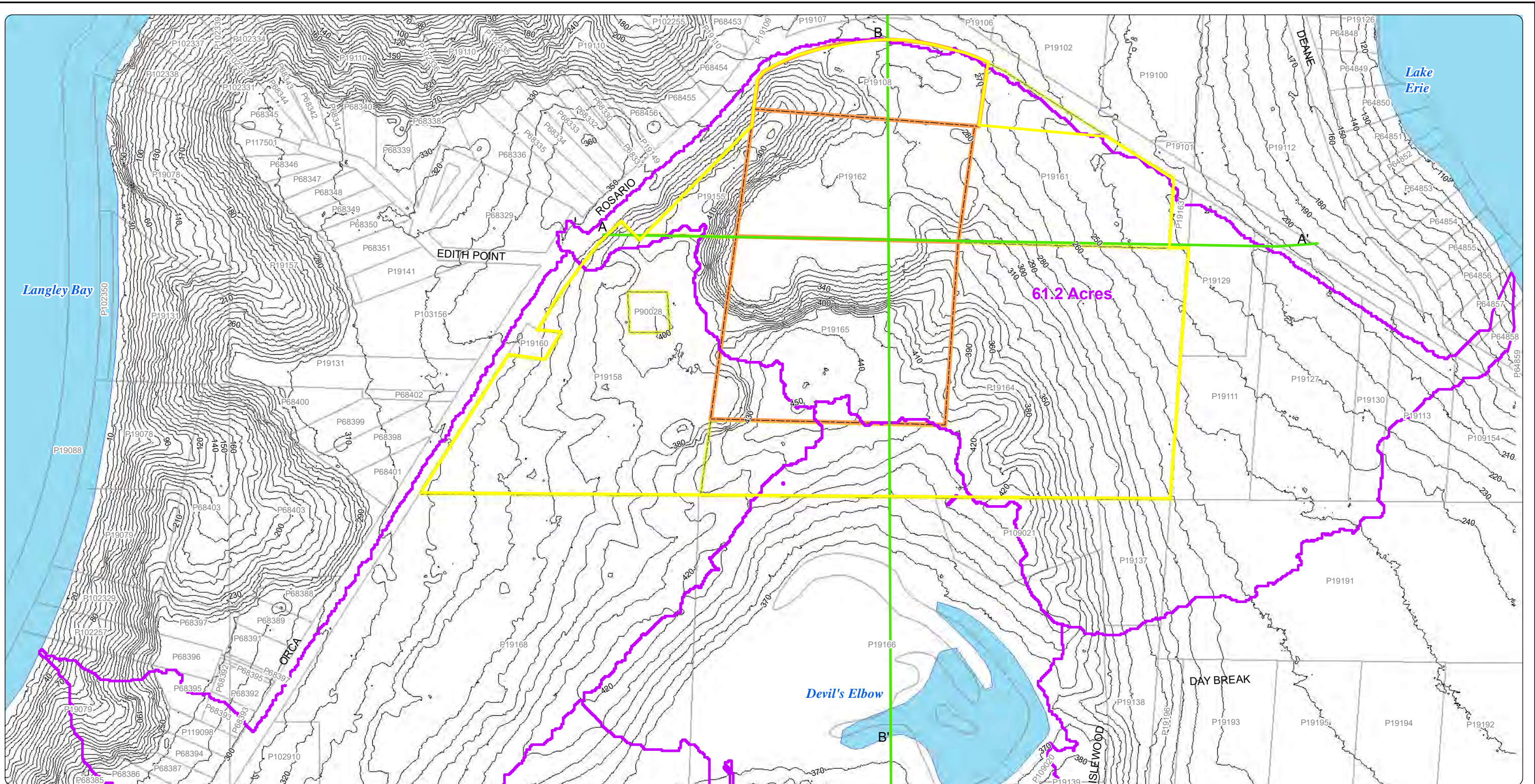
- Over-Mining & Additional Expansion
- (4) P19155 - 5.25 acres - Expansion area of existing mining permit
 - (5) P19158 - 8.97 acres - Expansion area of existing mining permit
 - (6) P90028 - .37 acres - Expansion area of existing mining permit

- Additional Expansion
- (7) P19161 - 4.27 acres - Additional expansion of existing mining permit (Note Eric Wooding part owner with Pit 1, LLC)
 - (8) P19164 - 16.86 acres - Additional expansion of existing mining permit

Figure 1
Skagit County Zoning
 Lake Erie Pit Mine
 Anacortes, Washington



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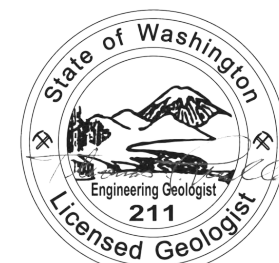
Source: LIDAR derived contours from USGS 2006.
Storm Event provided from NOAA Atlas 2
Precipitation Frequency Estimates.

Notes:
1. MSL = Mean Seal Level.

Event	Precipitation (inches)	Precipitation Intensity (in/hr)
2-year 6-hour	0.76	0.13
2-year 24-hour	1.35	0.06
100-year 6-hour	1.73	0.29
100-year 24-hour	3.03	0.13

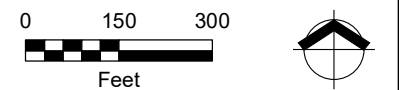
Legend

- 10-foot Topographic Contour (MSL)
- Cross Section Transect
- Site Drainage Divide
- ▭ Current Permitted Parcels
- ▭ Revised Permit Boundary
- ▭ Parcels



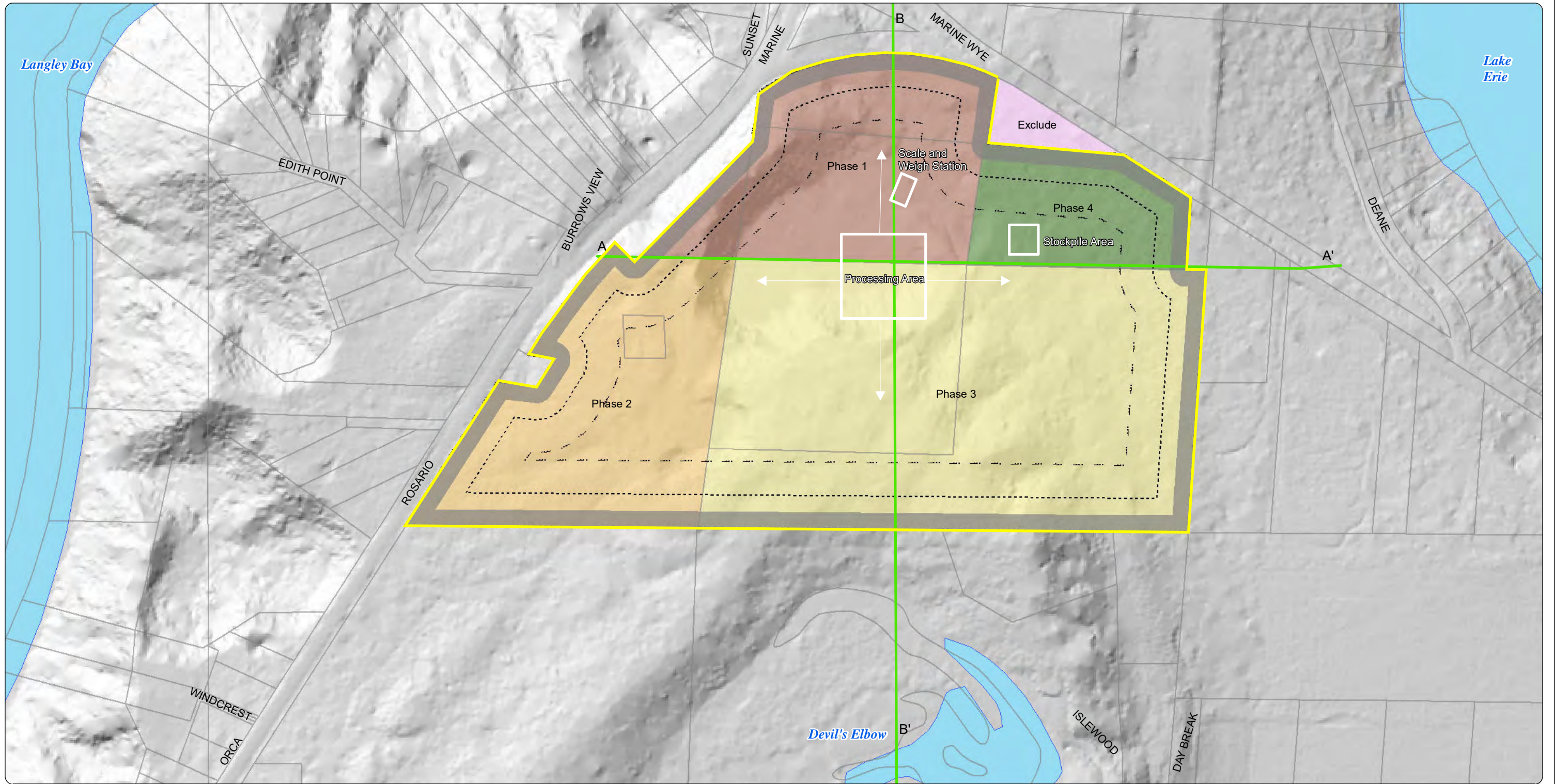
9/28/16 **THOMAS F. MULLEN**

Figure 2
Existing Conditions
Lake Erie Pit Mine
Anacortes, Washington



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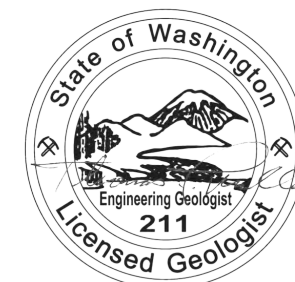
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



Source: Aerial photograph obtained from Esri ArcGIS Online

Legend

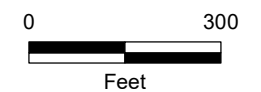
- | | |
|-------------------------|-----------------|
| Cross Section Transect | Sequence |
| Parcels | Exclude |
| 50 Foot Setback | Phase 1 |
| 100 Foot Setback | Phase 2 |
| 200 Foot Setback | Phase 3 |
| Revised Permit Boundary | Phase 4 |

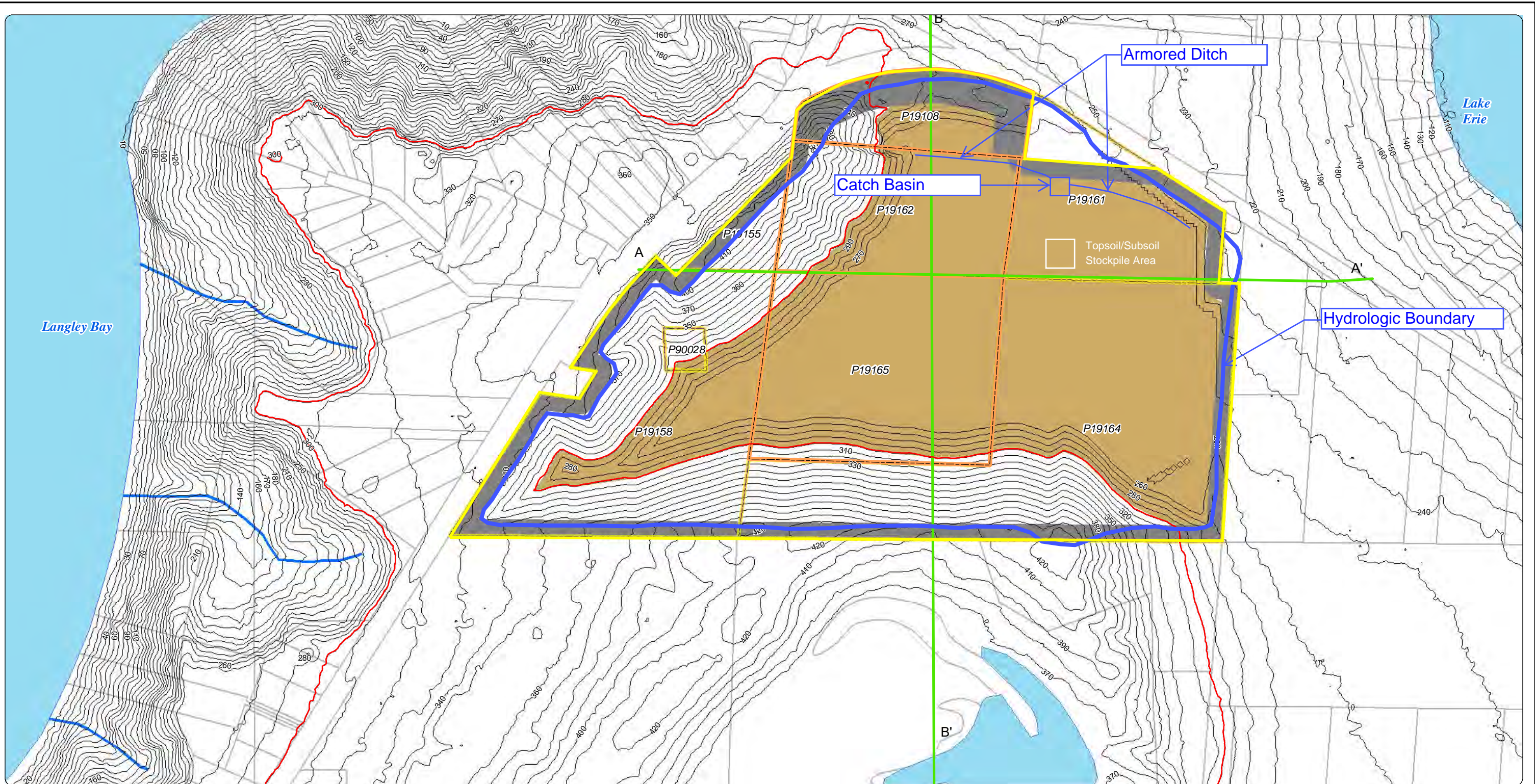


9/28/16 **THOMAS F. MULLEN**

Figure 3 Mining Sequence Map

Lake Erie Pit Mine
Anacortes, Washington





Source: LiDAR derived contours modified to show final reclamation surface from USGS 2006.

Notes:
1. MSL= Mean Seal Level.



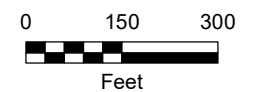
This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

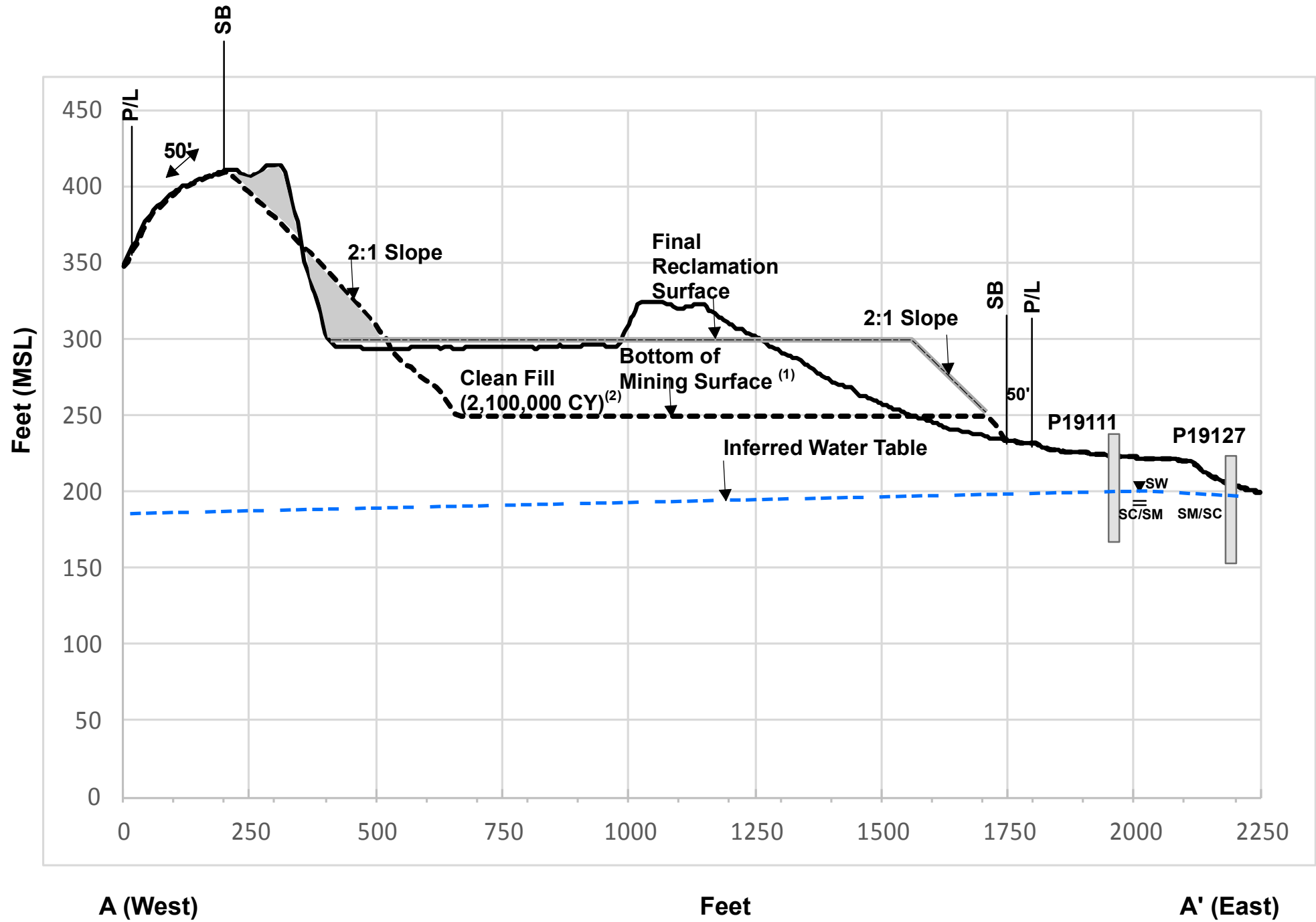
Legend

- Cross Section Transect
- 300-foot Topographic Contour (MSL)
- 10-foot Topographic Contour (MSL)
- Clean Fill to 300 feet MSL
- Setback
- Current Permitted Parcels
- Revised Permit Boundary
- Parcels

Figure 4
Final Reclamation Map

Lake Erie Pit Mine
Anacortes, Washington





- Note:**
- 1. ⁽¹⁾ Mine to 10 Feet Above Water Table
 - 2. ⁽²⁾ Mine floor rased to 300 feet with 85% compaction
 - 3. MSL= Mean Seal Level.
 - 4. CY= cubic yards

- Geologic Materials:**
- 1. CL = Clay
 - 2. GC= Clayey Gravel
 - 3. SC = Clayey Sand
 - 4. SM = Silty Sand
 - 5. SW = Well Graded Sand

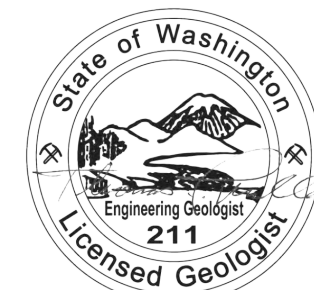
———— Existing Grade Boundary

■ Area to be Regraded at Final Reclamation

SB = Setback Line
 P/L = Property Line (Revised Permit Boundary)

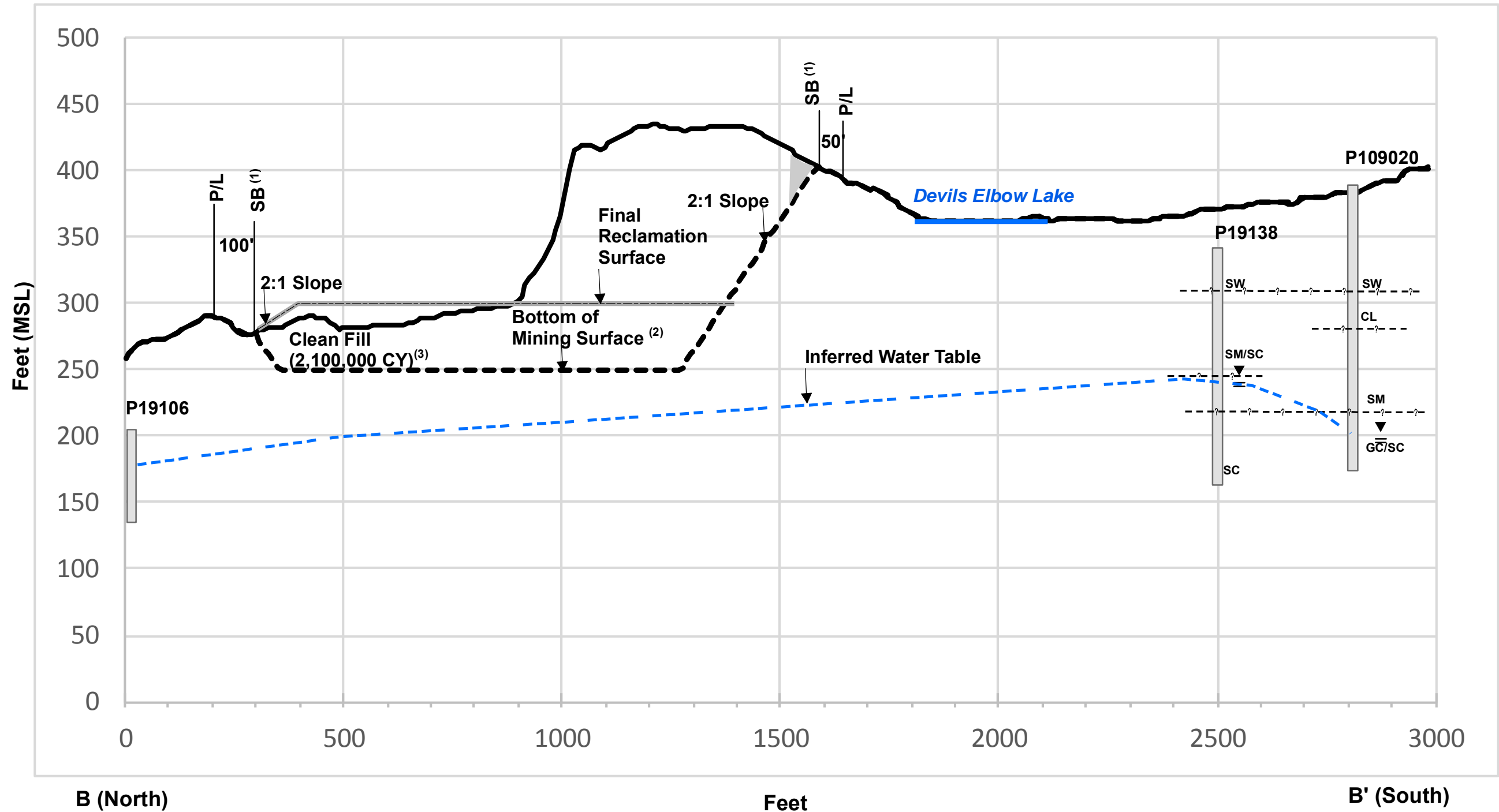


This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



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Figure 5
A-A' Cross Section
 Lake Erie Pit Mine
 Anacortes, Washington



- Note:**
- ⁽¹⁾ 100-ft setback to final reclamation surface is only applicable to Parcel 19108. All other parcels will maintain a 50-ft setback to final reclamation surface.
 - ⁽²⁾ Mine to 10 Feet Above Water Table
 - ⁽³⁾ Mine floor rased to 300 feet with 85% compaction
 - MSL= Mean Seal Level.
 - CY= cubic yards

- Geologic Materials:**
- CL = Clay
 - GC= Clayey Gravel
 - SC = Clayey Sand
 - SM = Silty Sand
 - SW = Well Graded Sand

———— Existing Grade Boundary

■ Area to be Regraded at Final Reclamation

SB = Setback Line
 P/L = Property Line (Revised Permit Boundary)



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.



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Figure 6
B-B' Cross Section
 Lake Erie Pit Mine
 Anacortes, Washington

SITE PHOTOS (TAKEN IN JUNE 2023 WHEN POSTING NOH, PL16-0556):



Mine Entrance



Rosario Road, Looking West/Northwest



Rosario Road, Looking east/southeast



Rosario Road & Marine Wye Drive Intersection



Gated Entrance to Mine

EXHIBITS:

OLD EXHIBITS:	
Exhibit #1	Staff Report/Findings of Fact (Dated: August 26, 2020)
Exhibit #2	Special Use Permit Application and Narrative received December 2, 2016
Exhibit #3	Skagit County Zoning and Assessor's map
Exhibit #4	Site Plans and aerial photographs
Exhibit #5	Notice of Development Application, published February 2, 2017
Exhibit #6	SEPA Environmental Checklist, dated June 8, 2017
Exhibit #7	SEPA Mitigated Determination of Non-Significance (MDNS), dated December 3, 2018, and associated SEPA staff report
Exhibit #8	Critical Areas Reconnaissance by Skagit Wetlands and Critical Areas, dated February 24, 2017
Exhibit #9	Hydrogeologic Site Assessment Report by Maul Foster Alongi, dated September 28, 2016
Exhibit #10	Observation Well Installation letter report by Maul Foster Alongi, dated September 28, 2017
Exhibit #11	Letter from McLucas and Associates, responding to the Del Mar comment letter, dated December 19, 2018
Exhibit #12	Letter from Northwest Groundwater Consultants, responding to the Del Mar Comment letter, dated January 3, 2019
Exhibit #13	Lake Erie Pit Well Reconnaissance by Northwest Groundwater Consultants LLC, dated March 11, 2019
Exhibit #14	Lake Erie Gravel Pit Traffic Impact Analysis by Gibson Traffic Consultants, Inc., dated September 2016
Exhibit #15	Addendum to the Lake Erie Gravel Pit Traffic Impact Analysis by Gibson Traffic Consultants, Inc., dated May 12, 2017
Exhibit #16	Traffic Memorandum by Skagit County Public Works, Dated March 1, 2018.
Exhibit #17	Supplemental (traffic) Memorandum by Skagit County Public Works, dated May 2, 2018
Exhibit #18	Lake Erie Pit air quality best management practices by Maul Foster Alongi, dated September 15, 2016
Exhibit #19	Lake Erie Pit Expansion Noise Study by Acoustics Group, Inc., dated September 16, 2016
Exhibit #20	List of neighboring property owners and parties of record notified of the Public Hearing.
Exhibit #21	A total of eighteen (18) comment letters were received during the comment periods. Fourteen (14) comment letters were received during the notice of development application (NODA) comment period, an additional three (3) comment letters were received during the Notice of Public Hearing (NoPH), and one (1) comment during the SEPA comment period. Comment letters and emails from the NODA, NoPH & SEPA comment periods are attached as Exhibit 21 and are in chronological order of receipt. Comments letters generally

OLD EXHIBITS:

	expressed concern about aesthetics, a decrease in water quality of the area, a decrease in slope stability adjacent to Rosario Road, impacts to wetlands found offsite, impacts to fish and wildlife habitat conservation areas, impacts to potential perched/shallow groundwater conditions, increases in traffic, increases in noise and dust generation. Two of comment letters were in support of the proposal. The SEPA comment letter is discussed under Department Findings #6 and the response to the comments is include as Exhibit 9 & 10.
Exhibit #22	The fourteen (14) comment letters received during the NODA comment period were provided to McLucas and Associates, Inc., representing Lake Erie Pit LLC. McLucas and Associates responded to each of the comment letters. The applicants responses are included as Exhibit 22.
Exhibit #23	An additional five (5) comment letters were received outside of the comment periods. All 5 comment letter were from Mr. Andy Dunn, a hydrogeologist with RH2 Engineering. Mr. Dunn represents Bill & Pam Doddridge residing on parcel P19166 to the south of the proposed mine expansion area. The comments are specific to a concern that the gravel mining activities may breach a perched aquifer onsite resulting in subsurface draining Devils Elbow Lake, located on the Doddridge property. The comment letters are included as Exhibit 23. Investigation of their concern included advancing a boring and installation of an observation well near the southern property line, between the lake and the gravel mine. The boring was logged by the hydrogeologist of record and by Mr. Andy Dunn, LHg of RH.2 Engineering. A perched aquifer was not encountered during advancement of the boring to a depth of 277-feet below site grade, an elevation of 168.6 above MSL (see Exhibit 8).

NEW EXHIBITS:

Exhibit #24	Hearing Examiner's Approval of Special Use Permit, PL16-0556
Exhibit #25	Appellant's Appeal of Hearing Examiner Decision
Exhibit #26	Board of County Commissioners Remand/Resolution to the Hearing Examiner
Exhibit #27	Hearing Examiner Referral to Skagit County Planning & Development Services
Exhibit #28	-March 23, 2021 Letter from PDS to the Applicant Requesting Additional Info; -May 27, 2021 Letter from PDS to Applicant with deadline for Additional Info; -July 21, 2021 Letter from PDS Denying Special Use Permit Application
Exhibit #29	Applicant's Appeal of Planning & Development Services Denial of Special Use Permit
Exhibit #30	Hearing Examiner's Order Granting Appeal & Reversing County's Denial
Exhibit #31	Geologic Hazard Site Assessment (Received August 12, 2022)
Exhibit #32	Evergreen Island's Letter Dated: 11/18/2022 + Stratum Group Review of Geologic Hazard Site Assessment (Dated November 15, 2022)
Exhibit #33	Third Party Review of Geologic Hazard Site Assessment & Response to Evergreen Island's Letter dated 11/18/2022 (Received January 19, 2023)

NEW EXHIBITS:

Exhibit #34	Evergreen Island Email & Letter Regarding Watershed Company Response to Evergreen Island's Communication of 11/18/2022 + Stratum Group Letter
Exhibit #35	Revised Third Party Review of Geologic Hazard Site Assessment & Response to Evergreen Island's Letter dated 11/18/2022 (Received March 31, 2023)
Exhibit #36	Notice of Public Hearing (Published on 6/8/2023), Neighbor Labels, & Parties of Record
Exhibit #37	Skagit County GIS Map of Subject Parcels & 300-Foot Buffer
Exhibit #38	Addendum to Staff Report