

CONDITIONAL USE PERMIT APPLICATION  
Steve's Backhoe Service

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# MALHEUR COUNTY

PLANNING DEPARTMENT

251 B Street West, #12 Vale, Oregon 97918

Phone (541)473-5185

File Number: \_\_\_\_\_

Application Fee: \_\_\_\_\_

Date Received: \_\_\_\_\_

Date Deemed Complete: \_\_\_\_\_

## LAND USE APPLICATION COVERPAGE

### LANDOWNER INFORMATION

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

### APPLICANT INFORMATION Check box if same

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

### PROPERTY INFORMATION

Township: \_\_\_\_\_ Range: \_\_\_\_\_ Section: \_\_\_\_\_ Tax Lot: \_\_\_\_\_ Ref #: \_\_\_\_\_ Acres: \_\_\_\_\_ Zoning: \_\_\_\_\_

Address: \_\_\_\_\_

Current use: \_\_\_\_\_

Use of surrounding properties: \_\_\_\_\_

Proposed use: \_\_\_\_\_

Permitted subject to section: \_\_\_\_\_

Water source: \_\_\_\_\_

Sewage disposal method: \_\_\_\_\_

Are the wetlands/water waterways on your property?  No  Yes (description): \_\_\_\_\_

Do you own neighboring property?  No  Yes (description): \_\_\_\_\_

Name of road providing access: \_\_\_\_\_

### LEGAL PARCEL STATUS

Partition: \_\_\_\_\_ Subdivision: \_\_\_\_\_

or Most Recent Pre- 09/04/1974 Deed #: \_\_\_\_\_ Date Filed: \_\_\_\_\_

Current Deed #: \_\_\_\_\_ Date Filed: \_\_\_\_\_

*\*The deed and a map showing the property described in the deed(s) must accompany this application.*

*\*Additional descriptive maps and pictures may be attached.*

**DETAILED SPECIFIC WRITTEN REQUEST:**

*\*Indicate proposed use, structures and their proposed dimensions*

Steven & Barbara Gerulf Trust, through Chad Gerulf, request approval pursuant to OAR  
660-023-0180 to expand an existing gravel pit. The Applicant also requests that this area be added to  
Malheur County's Goal 5 Aggregate Resources and has all protections afforded to it under OAR  
660-023-0180(5)(e)

**SIGNATURES:**

Property Owner(s): Steven Gerulf Date: 3/18/24  
Property Owner(s): Barbara Gerulf Date: 3/18/24  
Applicant(s): Chad Gerulf Date: 3/18/24  
Applicant(s): \_\_\_\_\_ Date: \_\_\_\_\_

PLEASE NOTE: Before this application will be processed, you must supply all requested information and forms, and address all listed or referenced criteria. Pursuant to ORS 215.428, this office will review the application for completeness and notify Applicant of any deficiencies within 30 days of submission. By signing this form, the property owner or property owner's agent is granting permission for Planning Staff to conduct site inspections on the property.

**ALL LAND USE APPLICATIONS MUST INCLUDE:**

- Application Fee – Cash or Check (credit cards now accepted with additional fee)
- Site Plan
- Elevation Drawing
- Fire Safety Self-Certification
- Other applicable information/application(s):

**SHADED AREA TO BE COMPLETED BY PLANNING DEPARTMENT**

<b>Legal Parcel</b> Deed/Land Use Action: _____	<input type="checkbox"/> NO <input type="checkbox"/> YES
<b>Previous Map and Tax Lot:</b> _____	
<b>Past Land Use Actions:</b> If yes, list file #(s) _____ _____ _____	<input type="checkbox"/> NO <input type="checkbox"/> YES
Subject to previous conditions?	<input type="checkbox"/> NO <input type="checkbox"/> YES
<b>Assessor Property Class:</b> _____	
<b>Zoning:</b> _____	
<b>Water Resources</b> Are there bodies of water or wetlands (seasonal or permanent) on property or adjacent properties? Describe (include setback distances): _____ <input type="checkbox"/> Fish bearing <input type="checkbox"/> Non fish bearing <input type="checkbox"/> Seasonal Creek <input type="checkbox"/> Irrigation ditch <input type="checkbox"/> Wetland <input type="checkbox"/> Pond/Lake <input type="checkbox"/> Not identified <i>(Note: Check buffers. Different zones have different setback requirements that may require a more extensive permitting process.)</i>	<input type="checkbox"/> NO <input type="checkbox"/> YES
<b>Access:</b> County or ODOT approach permit on file? <input type="checkbox"/> NO <input type="checkbox"/> YES, # _____	
<b>Address:</b> Address exists and has been verified to be correct? Address needs to be assigned after approval?	<input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES
<b>Fire District:</b> _____	
<b>Fees (List Review Type and Cost):</b> _____ _____ _____	

Last Updated 01/30/2020



REPORT OF WRITTEN JUSTIFICATIONS  
Oregon Administrative Rule 660-023-0180  
Steve's Backhoe Service

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**MINERAL AND AGGREGATE RESOURCES**  
**OAR 660-023-0180**

All submitted plans and specifications shall contain sufficient information to allow the planning commission to set standards pertaining to:

1. An aggregate resource site shall be considered significant if adequate information regarding the quantity, quality, and location of the resource demonstrates that the site meets any one of the criteria in subsections (3)(a) of OAR 660-023-0180
  - (a) A representative set of samples of aggregate material in the deposit on the site meets applicable Oregon Department of Transportation (ODOT) specifications for base rock for air degradation, abrasion, and soundness, and the estimated amount of material is more than 500,000 tons outside the Willamette Valley.

What quantity and quality analyses were conducted and what were the findings?

*(\* A quality and quantity analysis must be submitted along with the application.*

APPLICANT FINDING: A field survey by Atlas Technical Consultants, LLC was performed between March 28 to 31, 2023 to 1) Explore the subsurface via test pits and borings, 2) Perform field and laboratory testing of materials encountered and collected, 3) Evaluate the quantity and quality of gravel in accordance with OAR 660-023-0180. Based on the analysis provided by Atlas Technical Consultants, LLC, an estimated 2,053,700 cubic yards (converts to approximately 2,772,495 tons) of gravel is present on the site (See Applicant Exhibit 1 - Page 7).

A quality analysis was also provided by Atlas Technical Consultants, LLC (Applicant Exhibit 2). Laboratory tests were conducted in accordance with current applicable Oregon Department of Transportation (ODOT) and American Association of State Highway and Transportation Officials (AASHTO) specifications. The laboratory testing program for the samples included: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine Testing (AASHTO T 96), Soundness of Aggregate by Use of Sodium Sulfate (AASHTO T 104), and Oregon Air Aggregate Degradation (ODOT TM 208). Based on the reported test pit/sample locations, the test samples can be expected to be generally representative of the aggregates at the overall site and associated subsurface conditions. Test results, included with the report (Applicant Exhibit 2 – Page 3), of the samples indicate that the materials meet the requirements of Oregon Standard Specifications for Construction, 2018, Base Aggregate, 02630.1(c) Durability section.

2. Notwithstanding section (3) of OAR 660-023-0180, a local government may also determine that an aggregate resource site on farmland is significant if subsections (a) and (b) of this section apply or if subsection (c) of this section applies:
  - (a) The quantity of material proposed to be mined from the site is estimated to be 500,000 tons or less for a site outside the Willamette Valley; and

What is the determined quantity of material identified and proposed to be mined?

- (b) Not more than 35% of the proposed mining area consists of soil:  
 (A) Classified as Class I on Natural Resource and Conservation Service (NRCS) maps available on June 11, 2004; or  
 (B) Classified as Class II, or of a combination of Class II and Class I or Unique soil, on NRCS maps on June 11, 2004.
- (c) A local land use permit that allows mining on the site was issued prior to April 3, 2003, and the permit is in effect at the time of the significance determination.

Was the proposed mining area subject to a previous land use permit?

APPLICANT FINDING: The quantity of Aggregate for the proposed area was estimated to be approximately 2,053,700 cubic yards (this converts to 2,772,495 tons). This is well above the 500,000 tons for a site outside of the Willamette Valley. This meets the criteria of OAR 660-023-0180(3)(a).

The soil types (see Applicant Exhibit 4) are as follows (assuming all acreage is irrigated):

Class III:

<u>Map Unit Symbol</u>	<u>Percent of Area of Interest</u>
35A	7.9%
35B	48.8%
35C	18.6%
<b>TOTAL</b>	<b>75.3%</b>

Class IV:

<u>Map Unit Symbol</u>	<u>Percent of Area of Interest</u>
21D	4.4%
<b>TOTAL</b>	<b>4.4%</b>

Class VI:

<u>Map Unit Symbol</u>	<u>Percent of Area of Interest</u>
35E	0.7%
<b>TOTAL</b>	<b>0.7%</b>

Class VII:

<u>Map Unit Symbol</u>	<u>Percent of Area of Interest</u>
36F	19.6%
<b>TOTAL</b>	<b>19.6%</b>

As shown above and on the soil map (See Applicant's Exhibit 4) obtained from the United States

Department of Agriculture’s Natural Resources Conservation Service, the proposed site does not have any soils of Class I or Class II. Therefore, b of this section has been met.

Although, section c is not applicable because only sections a and b must be met to meet these criteria, this site does meet section c as well. A land use permit was issued prior to April 3, 2003, and is still in effect upon this determination of significance.

3. What is the proposed mining location (include a legal description of the proposed mining site) and what are the hours of operation (and times of year) for all proposed mining and associated uses?

APPLICANT FINDING: The mine is located at 460 Stanton Boulevard. The mine is approximately 63.81 acres of tax lot 500 on Malheur County Assessor’s Map: 17S47ED001 (see Applicant Exhibit 6).

4. List what are the existing or approved land uses on each property within the 1,500-impact area that will be adversely affected by the proposed mining operations? For purposes of this section, “approved land uses” are dwellings allowed by a residential zone on existing platted lots and other uses for which conditional or final approvals have been granted by the local government.

Tax Lot	Map Number	Identified Uses
800	17S47E17B	C-A1; 26.06-acre farmland with a dwelling
500	17S47E17	C-A1; 49.44-acre farmland with a dwelling
600	17S47E17	C-A1; 21.35-acre farmland with a dwelling
800	17S47E17	C-A1; 1.88-acre farmland with a dwelling
100	17S47E17	C-A1; 93.80-acre farmland with a dwelling
300	17S47E17	C-A1; 133.30-acre farmland with a dwelling
401	17S47E17	C-A1; 10.01-acre farmland with a dwelling
800	17S47E17A	C-A1; 8.99-acre farmland with a dwelling
900	17S47E17A	C-A1; 7.60-acre farmland with a dwelling
700	17S47E17A	C-A1; 18.81-acre farmland with a dwelling
1000	17S47E17A	C-A1; 11.92-acre farmland with a dwelling
1400	17S47E16B	C-A1; 1.35-acre farmland with a dwelling
1200	17S47E16B	C-RR; 5.06-acre rural residential lot with a dwelling
1100	17S47E16B	C-RR; 5.06-acre rural residential lot with a dwelling
1500	17S47E16B	C-RR; 5.01-acre rural residential lot with a dwelling
1600	17S47E16B	C-A1; 8.00-acre farmland
900	17S47E16B	C-A1; 2.91-acre farmland

600	17S47E16	C-A1; 44.89-acre farmland
1000	17S47E16	C-A1; 1.79-acre farmland; second approved NFD site, Applicant owned
800	17S47E16	C-A1; 7.50-acre farmland
1100	17S47E16	C-A1; 2.00-acre farmland with a dwelling
1200	17S47E16	C-A1; 7.50-acre farmland
1500	17S47E16	C-A1; 0.70-acre farmland
1400	17S47E16	C-A1; 2.07-acre farmland
1600	17S47E16	C-A1; 1.21-acre farmland with a dwelling
501	17S47ED001	C-A1; 7.30-acre farmland with a dwelling (NFD); Applicant owns
400	17S47E20	C-A1; 77.37-acre farmland with a dwelling
300	17S47E20	C-A1; 2.20-acre farmland with a dwelling
600	17S47E20	C-A1; 163.50-acre farmland with a dwelling
500	17S47E20	C-A1; 39.90-acre farmland with a dwelling
700	17S47E20	C-A1; 34.71-acre farmland
200	17S47E21	C-A1; 37.13-acre farmland with a dwelling
203	17S47E21	C-A1; 0.79-acre farmland with a dwelling
503	17S47ED001	15.83-acre farmland with a dwelling; Applicant owned

5. What are the predicted conflicts and proposed mitigation measures? For determination of conflicts from proposed mining of a significant aggregate site, the local government shall limit its consideration to the following:

(A) Conflicts due to noise, dust, or other discharges with regard to those existing and approved uses and associated activities (e.g., houses and schools) that are sensitive to such discharges.

APPLICANT FINDING: The existing and approved use that has been identified as being sensitive to noise, dust and other discharges, is residential uses (either in rural residential, non-farm dwellings; or farm dwellings) (see Applicant Exhibit 9). These conflicts will be mitigated by the following:

NOISE: As with all gravel pits, noise will be generated in the mining area. An earthen berm, at least ten (10) feet in height, will be used to mitigate any conflicts due to noise. On top of the earthen berm, trees will be planted to further reduce any line of site and therefore, dampen any noise generated. Earthen berms are a cost-effective way to mitigate noise pollution from gravel pits. The elimination of a line of sight from any dwelling to the equipment, which is generating the noise, will greatly decrease the sound from traveling. Studies have shown that earthen berms reduce noise levels to a greater extent than other noise barriers due to the absorption and edge effects of the berm (see Applicant Exhibit 10).

During peak noise production (using the crusher), the gravel pit is proposed to produce 86.5 decibels of sound. An earthen berm will reduce that noise by approximately 19.32 decibels (see Applicant Exhibit 10), thereby reducing the noise to just 67.18 decibels. This is considered the same level as a normal conversation and is quieter than a vacuum cleaner (See Applicant Exhibit 11).

In addition, as stated in the Operations Plan (Applicant Exhibit 7), the hours of operation will be within a normal working day (7am-5pm) Monday through Friday. Occasionally, the gravel pit will operate on a Saturday. Crushing will only occur once per calendar year. The strategic planning of this noisy activity will further reduce any conflict.

DUST: The creation of dust in a gravel pit operation is typical. The gravel pit currently has an asphalted road, which mitigates any dust generated by truck traffic. In addition, a water truck will water all non-asphalted roads. Water is currently obtained from the City of Ontario but will be obtained onsite in the future. Regularly spraying water on the roads will greatly reduce any dust generated on the site.

Windbreaks can also greatly reduce the amount of dust blown from a gravel pit to other properties. The earthen berm in addition to the trees will reduce wind within the mining site, and therefore reduce dust blown onto adjacent properties.

OTHER DISCHARGES: No discharges are anticipated to any adjacent properties. All stormwater and other wastewaters will be maintained onsite by sloping the ground to maintain proper drainage.

- (B) Potential conflicts to local roads used for access and egress to the mining site within one mile of the entrance to the mining site unless a greater distance is necessary to include the intersection with the nearest arterial identified in the local transportation plan. Conflicts shall be determined based on clear and objective standards regarding sight distances, road capacity, cross section elements, horizontal and vertical alignment, and similar items in the transportation plan and implementing ordinances. Such standards for trucks associated with the mining operation shall be equivalent to standards for other trucks of equivalent size, weight, and capacity that haul other materials.

APPLICANT FINDING: There will be no additional truck traffic generated at this site. The gravel pit operation is an existing operation. No conflicts with access roads are anticipated. Truck travel already occurs to and from the Applicant's existing mining operation via Stanton Boulevard. There will be no increase in traffic weight on the road to and from the expanded operation. The proposed use will not create a need to alter the current location and size of driveway access points, nor will it need right-of-way widening or improvements on Stanton Boulevard.

- (C) Safety conflicts with existing public airports due to bird attractants, i.e., open water impoundments as specified under OAR chapter 660, division 013.

APPLICANT FINDING: There are no existing public airports near the proposed mining location. No conflicts with existing public airports are anticipated.

- (D) Conflicts with other Goal 5 resource sites within the impact area that are shown on an acknowledged list of significant resources and for which the requirements of Goal 5 have been completed at the time the PAPA is initiated:

APPLICANT FINDING: There are no other Goal 5 resources located within the impact area. No conflicts with Goal 5 resource sites are anticipated.

- (E) Conflicts with agricultural practices and proposed mitigation measures (To determine whether proposed mitigation measures would minimize conflicts to agricultural practices, the requirements of ORS 215.296 shall be followed); and

APPLICANT FINDING: The mitigation measures used to protect dwellings to any conflict of this use, will also help protect farmland surrounding the property as well. This property is farmland currently and will be reclaimed as farmland after the resource is mined. The Applicant's goal is to operate a responsible gravel pit that coexists peacefully with surrounding agricultural activities. Through careful planning, operational best practices, open communication, and a commitment to minimizing environmental impacts, we can achieve a win-win scenario for both our business and the local community. Therefore, there are no conflicts which would force a significant change in accepted farm or forest practices on surrounding lands devoted to farm use or significantly increase the cost of accepted farm or forest practices on surrounding lands devoted to farm use.

- (F) Other conflicts for which consideration is necessary in order to carry out ordinances that supersede Oregon Department of Geology and Mineral Industries (DOGAMI) regulations pursuant to ORS 517.780.

APPLICANT FINDING: No other conflicts are anticipated.

6. What is the proposed acreage to be mined per year and life expectancy of the quarry, if approved?

APPLICANT FINDING: The Applicant is proposing to mine two (2) acres per year. The Applicant is proposing to increase the mining area by about 53 acres. This would give the new mining area a life span of approximately 26.5 years.

7. What is the proposed conceptual site reclamation plan?

APPLICANT FINDING: Applicant proposes to use the current, approved reclamation plan submitted to DOGAMI (See Applicant Exhibit 8). In short, the overburden will be mined and used as the berm for the site. Once the gravel has been mined, the overburden will be placed over the mined portion of the site. The farmland will be leveled as it is mined. The mined portion will be seeded annually. As part of the farming operation, a five (5) tower pivot will be installed and used to irrigate the unmined portions of the site and the reclaimed areas as well.

8. What are is the proposed post-mining use? For significant aggregate sites on Class I, II and Unique farmland, local governments shall adopt plan and land use regulations to limit post-mining use to farm uses under ORS 215.203, uses listed under ORS 215.213(1) or 215.283(1), and fish and wildlife habitat uses, including wetland mitigation banking. Local governments shall coordinate with DOGAMI regarding the regulation and reclamation of mineral and aggregate sites, except where exempt under ORS 517.780.

APPLICANT FINDING: The proposed use after the mining operation has completed is farming. Currently, the farmland is not level and difficult to farm. Once the gravel is extracted, the farmland will be leveled and more easily accessible to be farmed. In addition, a five (5) tower pivot will be installed as part of the project.



APPLICANT EXHIBIT 1  
Atlas Quantity Analysis

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# ATLAS

## **BORROW SOURCE INVESTIGATION GERULF GRAVEL PIT EXPANSION**

4553 Hyline Road  
Ontario, OR

### **PREPARED FOR:**

Chad Gerulf  
Steve's Backhoe Service  
618 Railroad Avenue  
Ontario, OR 97914

### **PREPARED BY:**

Atlas Technical Consultants, LLC  
2791 South Victory View Way  
Boise, ID 83709

May 22, 2023  
B230399g



2791 South Victory View Way  
Boise, ID 83709  
(208) 376-4748 | oneatlas.com

May 22, 2023

Atlas No. B230399g

Chad Gerulf  
Steve's Backhoe Service  
618 Railroad Avenue  
Ontario, OR 97914

**Subject: Borrow Source Investigation  
Gerulf Gravel Pit Expansion  
4553 Hyline Road  
Ontario, OR**

Dear Chad Gerulf:

In compliance with your instructions, Atlas has conducted a limited soils exploration and foundation evaluation for the above referenced development. Fieldwork for this investigation was conducted from March 28 to 31, 2023. Data have been analyzed to evaluate pertinent geotechnical conditions. Results of this investigation, together with our recommendations, are to be found in the following report. We have provided a PDF copy for your review and distribution.

Often, questions arise concerning soil conditions because of design and construction details that occur on a project. Atlas would be pleased to continue our role as geotechnical engineers during project implementation.

If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,

Clinton Wyllie, PG (ID)  
Staff Geologist

*Elizabeth Brown*  
Elizabeth Brown, PE OREGON  
Geotechnical Services Manager  
5/22/2023  
102891PE  
REGISTERED PROFESSIONAL ENGINEER  
ELIZABETH BROWN  
EXPIRES: 12/31/2025

Distribution: Lisa Reeser, LR Consulting, LLC (PDF Copy)

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## 1. INTRODUCTION

### 1.1 Project Description

The proposed development is in the City of Ontario, Malheur County, OR, and occupies a portion of the S $\frac{1}{2}$ SE $\frac{1}{4}$  of Section 17, Township 17 South, Range 47 East, Willamette Meridian. The site to be developed is approximately 65 acres. Site maps included in the **Appendix** show the project location.

This project will consist of expanding an existing gravel pit located in the southwestern part of the property. Atlas was informed that the floor of the existing pit is at an elevation of approximately 2,265 feet above mean sea level (mfs). It is anticipated that the expansion will match the existing elevation.

### 1.2 Scope of Investigation

Our scope of work was completed in general accordance with our proposal dated February 15, 2023 and authorized on March 8, 2023. Said authorization is subject to terms, conditions, and limitations described in the Professional Services Contract entered into between Steve's Backhoe Service and Atlas.

Atlas' scope of services included the following:

- Subsurface exploration via test pits and borings.
- Field and laboratory testing of materials encountered and collected.
- Evaluation of quantity and quality of gravel in accordance with OAR 660-023-1080.

## 2. SITE DESCRIPTION

### 2.1 Regional Geology

The subject site is located within the Western Snake River Flood Plain. Within this region, this geomorphological feature consists of a broad, deeply floored, thick sequence of alluvial silts, clays, sands and gravel. These sediments typically have been deposited on Miocene (24 to 5 million years ago) basalt flows and tuffaceous sediments of the eastern region of the Columbia Plateau. This thick sequence of generally fine-grained sediments, predominately derived from the Idaho Batholith, contains minor intercalated tuffs and basalt flows within the earliest deposits. Most of these sediments were placed during the latter part of the Miocene and are predominately of lacustrine origin. Lakes were created within this area as a result of basalt flow impoundments formed to the west along the ancestral Columbia River. Many of the fossil leaf forms uncovered in these lacustrine plain sediments indicate the presence of a wet tropical climate that prevailed at this time.



Early Quaternary age (1.6 million years ago to present) sediments deposited on top of the lacustrine plain were apparently deposited during a time of extremely dry climatic conditions in which little water was present for removal, sorting, and deposition of the debris. With a gradual return to a wetter climate, the surrounding hills again began to erode to their present form. Locally within the City of Ontario, soils generally consist of interbedded clay, silt, sand and gravel. Geologic data for the area indicates bedrock may be encountered at depths of 750 feet or more beneath the soil surface.

## 2.2 General Site Characteristics

The following details regarding site conditions are based on visual observations and review of available geologic and topographic maps and imagery:

- **Current Site Conditions:** The site is approximately 65 acres. An existing gravel pit is present in the southwestern part of the property. The remainder of the site consists of agricultural land.
- **Vegetation:** Vegetation on the site consists primarily of agricultural crop remnants and native weeds and grasses. Mature trees are present along the northern site boundary. Additionally, a grove of trees is present in the east-central portion of the site.
- **Topography:** In the western portion of the site, slopes along the existing gravel pit are approximately 1 foot horizontal to 1 foot vertical (1:1). To the east of the existing pit, the surface slopes gently downwards to the east/northeast. To the south of the site, the surface slopes downwards towards Stanton Boulevard ranging from roughly 4:1 to 2:1. Based on provided topographic information for the site, elevations across the site range from 2,224 to 2,340 feet above mean sea level.
- **Drainage:** Stormwater drainage for the site is achieved by both sheet runoff and percolation through surficial soils. Runoff predominates for the steeper slopes while percolation prevails across the gently sloping and near level areas. The site is situated so that it is unlikely that it will receive any drainage from off-site sources.

## 3. SOILS EXPLORATION

### 3.1 Exploration and Sampling Procedures

Field exploration conducted to determine engineering characteristics of subsurface materials included a reconnaissance of the project site and investigation by soil boring and test pits. Test pit/boring sites were located in the field by means of a Global Positioning System (GPS) device and are reportedly accurate to within ten feet. Borings were advanced by means of a truck-mounted drilling rig equipped with continuous flight hollow-stem augers. At specified depths, samples were obtained using a standard split-spoon sampler, and Standard Penetration Test (SPT) blow counts were recorded. Uncorrected SPT blow counts are provided on logs, which can be found in the [Appendix](#). Water level observations were made in open borings to evaluate groundwater levels. At completion of exploration, borings were backfilled with bentonite holeplug. Upon completion of investigation, each test pit was backfilled with loose excavated materials.

Samples have been visually classified in the field, identified according to test pit/boring number and depth, placed in sealed containers, and transported to our laboratory for additional testing. Subsurface materials have been described in detail on logs provided in the **Appendix**. Results of field and laboratory tests are also presented in the **Appendix**. Atlas recommends that these logs not be used to estimate fill material quantities.

### 3.2 Laboratory Testing Program

Along with our field investigation, a supplemental laboratory testing program was conducted to determine additional pertinent engineering characteristics of subsurface materials. Laboratory tests were conducted in accordance with current specifications. The laboratory testing program for this report included:

- Atterberg Limits Testing – ASTM D4318
- Grain Size Analysis – ASTM C117/C136
- LA Abrasion – AASHTO T96
- Soundness of Aggregate – AASHTO T104
- Oregon Air Degradation – ODOT TM 208

As to date, the LA Abrasion, Soundness of Aggregate, and Oregon Air Degradation test results have not been received and, therefore, have not been included within this report. Atlas will forward the results in the form of an addendum once these test results have been received.

### 3.3 Soil and Sediment Profile

The profile below represents a generalized interpretation for the project site. Note that on site soils strata, encountered between test pit locations, may vary from the individual soil profiles presented in the logs.

**Table 1 – Typical Soil Profiles**

Soil Horizons	Approximate Depths	Soil Types	Consistency/Relative Density
Surficial Soils	0 to 31 feet	Lean Clay, Sandy Silt, Silt, Silty Sand, Silty Sand with Gravel, Silty Gravel with Sand	Stiff to Hard/Loose to Dense
Intermediate Soils	9 to 67 feet	Silty Gravel with Sand, Poorly Graded Gravel with Sand, Poorly Graded Sand with Gravel	Dense to Very Dense
Deeper Soils	21 to 70 feet	Sandy Silt, Silty Sand	Very Stiff to Hard

<sup>1</sup>Soil depths varied with topography across the site.

During excavation, sloughing of test pit sidewalls was observed. In general, fine-grained soils remained stable while more granular sediments readily sloughed. However, moisture contents will also affect wall competency with saturated soils having a tendency to readily slough when under load and unsupported.



#### 4. GRAVEL QUANTITY AND QUALITY

Atlas was provided a topographic survey of the site by Derrick McKrola dated March 7, 2022. GPS coordinates were obtained onsite for the test pit/boring locations, and elevations were assigned to each point from the survey data. The depths where gravels were encountered was converted to elevations with respect to the surface elevation at each point. New surfaces for the top and bottom of the gravel deposit was interpolated through ArcGIS Pro software. These surfaces were used to calculate an approximate volume of gravel across the site. Based on this model, an estimated bank volume of approximately 2,053,700 cubic yards of gravel is present on the site. The quantity analysis is limited to the depths explored. Additionally, variations in subsurface strata should be expected across the site, which may alter the actual volume of gravel present on site.





## 5. REFERENCES

American Society for Testing and Materials (ASTM) (2017). Standard Test Method for Materials Finer than 75- $\mu$ m (No. 200) Sieve in Mineral Aggregates by Washing: ASTM C117. West Conshohocken, PA: ASTM.

American Society for Testing and Materials (ASTM) (2019). Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates: ASTM C136. West Conshohocken, PA: ASTM.

American Society for Testing and Materials (ASTM) (2017). Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System): ASTM D2487. West Conshohocken, PA: ASTM.

American Society for Testing and Materials (ASTM) (2017). Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils: ASTM D4318. West Conshohocken, PA: ASTM.



## APPENDIX I WARRANTY AND LIMITING CONDITIONS

Atlas warrants that findings and conclusions contained herein have been formulated in accordance with generally accepted professional engineering practice in the fields of foundation engineering, soil mechanics, and engineering geology only for the site and project described in this report. These engineering methods have been developed to provide the client with information regarding apparent or potential engineering conditions relating to the site within the scope cited above and are necessarily limited to conditions observed at the time of the site visit and research. Field observations and research reported herein are considered sufficient in detail and scope to form a reasonable basis for the purposes cited above.

### Exclusive Use

**This report was prepared for exclusive use of the property owner(s), at the time of the report, and their retained design consultants (“Client”).** Conclusions and recommendations presented in this report are based on the agreed-upon scope of work outlined in this report together with the Contract for Professional Services between the Client and Materials Testing and Inspection (“Consultant”). Use or misuse of this report, or reliance upon findings hereof, by parties other than the Client is at their own risk. Neither Client nor Consultant make representation of warranty to such other parties as to accuracy or completeness of this report or suitability of its use by such other parties for purposes whatsoever, known or unknown, to Client or Consultant. Neither Client nor Consultant shall have liability to indemnify or hold harmless third parties for losses incurred by actual or purported use or misuse of this report. No other warranties are implied or expressed.

### Report Recommendations are Limited and Subject to Misinterpretation

There is a distinct possibility that conditions may exist that could not be identified within the scope of the investigation or that were not apparent during our site investigation. Findings of this report are limited to data collected from noted explorations advanced and do not account for unidentified fill zones, unsuitable soil types or conditions, and variability in soil moisture and groundwater conditions. To avoid possible misinterpretations of findings, conclusions, and implications of this report, Atlas should be retained to explain the report contents to other design professionals as well as construction professionals.

Since actual subsurface conditions on the site can only be verified by earthwork, note that construction recommendations are based on general assumptions from selective observations and selective field exploratory sampling. Upon commencement of construction, such conditions may be identified that require corrective actions, and these required corrective actions may impact the project budget. Therefore, construction recommendations in this report should be considered preliminary, and Atlas should be retained to observe actual subsurface conditions during earthwork construction activities to provide additional construction recommendations as needed.

Since geotechnical reports are subject to misinterpretation, **do not** separate the soil logs from the report. Rather, provide a copy of, or authorize for their use, the complete report to other design



professionals or contractors. Locations of exploratory sites referenced within this report should be considered approximate locations only. For more accurate locations, services of a professional land surveyor are recommended.

This report is also limited to information available at the time it was prepared. In the event additional information is provided to Atlas following publication of our report, it will be forwarded to the client for evaluation in the form received.

### **Environmental Concerns**

Comments in this report concerning either onsite conditions or observations, including soil appearances and odors, are provided as general information. These comments are not intended to describe, quantify, or evaluate environmental concerns or situations. Since personnel, skills, procedures, standards, and equipment differ, a geotechnical investigation report is not intended to substitute for a geoenvironmental investigation or a Phase II/III Environmental Site Assessment. If environmental services are needed, Atlas can provide, via a separate contract, those personnel who are trained to investigate and delineate soil and water contamination.

# Vicinity Map

# Figure 1



### MAP NOTES:

- ESRI World Topographic Map
- Not to Scale

### LEGEND

Approximate Site Location 

### Gerulf Gravel Pit Expansion

4553 Hyline Road  
Ontario, OR

Modified from ESRI by: CCW  
May 16, 2023  
Drawing: B230399g



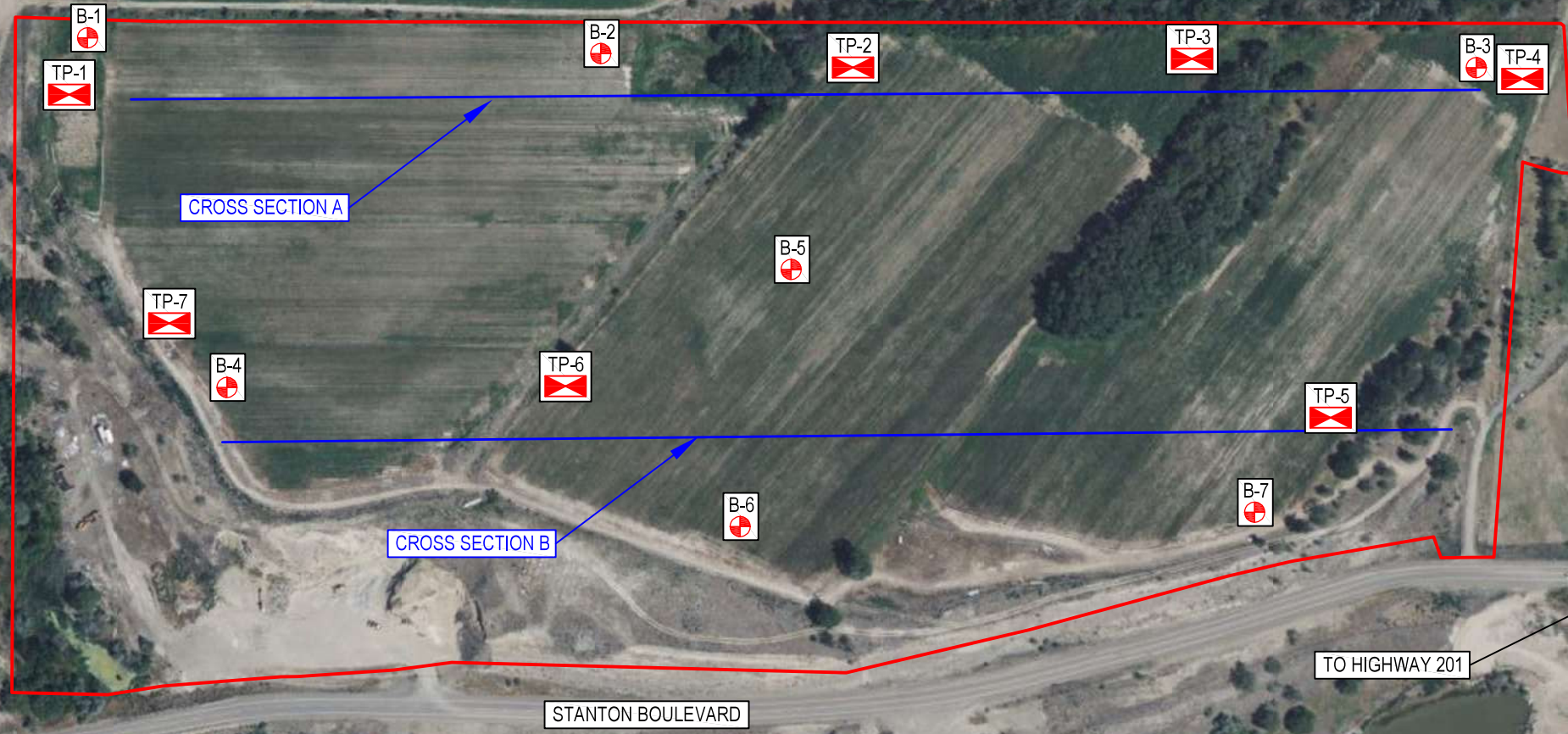
2791 S. Victory View Way Phone: (208) 376-4748  
Boise, ID 83709 Fax: (208) 322-6515  
Web: [oneatlas.com](http://oneatlas.com)

Applicant Exhibit 1 - Page 11 of 31



# Site Map

Figure 2







Applicant Exhibit 1 - Page 12 of 31

**NOTES:**

- Not to Scale

**LEGEND**

Approximate Site Boundary		Approximate Atlas Boring Location	
Approximate Atlas Test Pit Location		Approximate Atlas Cross Section Location	

**Gerulf Gravel Pit Expansion**

4553 Hyline Road  
Ontario, OR

Modified by: CCW  
May 16, 2023  
Drawing: B230399g

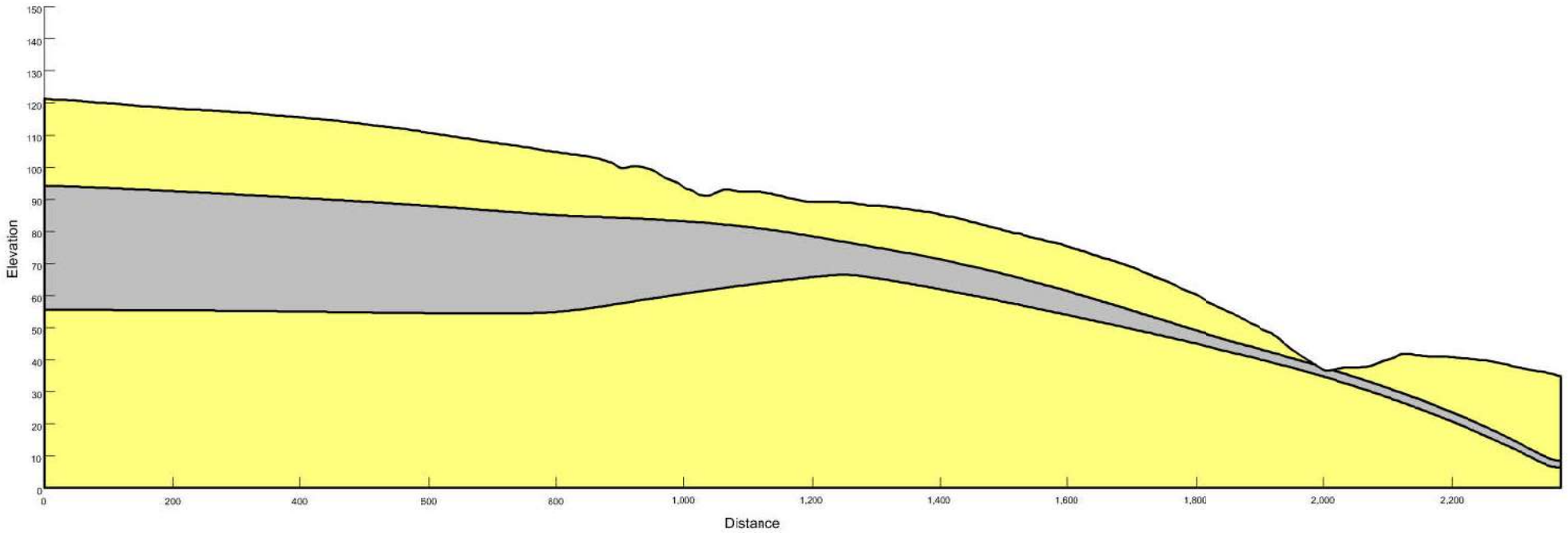


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Web: oneatlas.com

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# Cross Section A

Figure 3

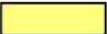
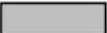


Applicant Exhibit 1 - Page 13 of 31

### NOTES:

- Not to Scale

### LEGEND

- Soil 
- Gravel 

### Gerulf Gravel Pit Expansion

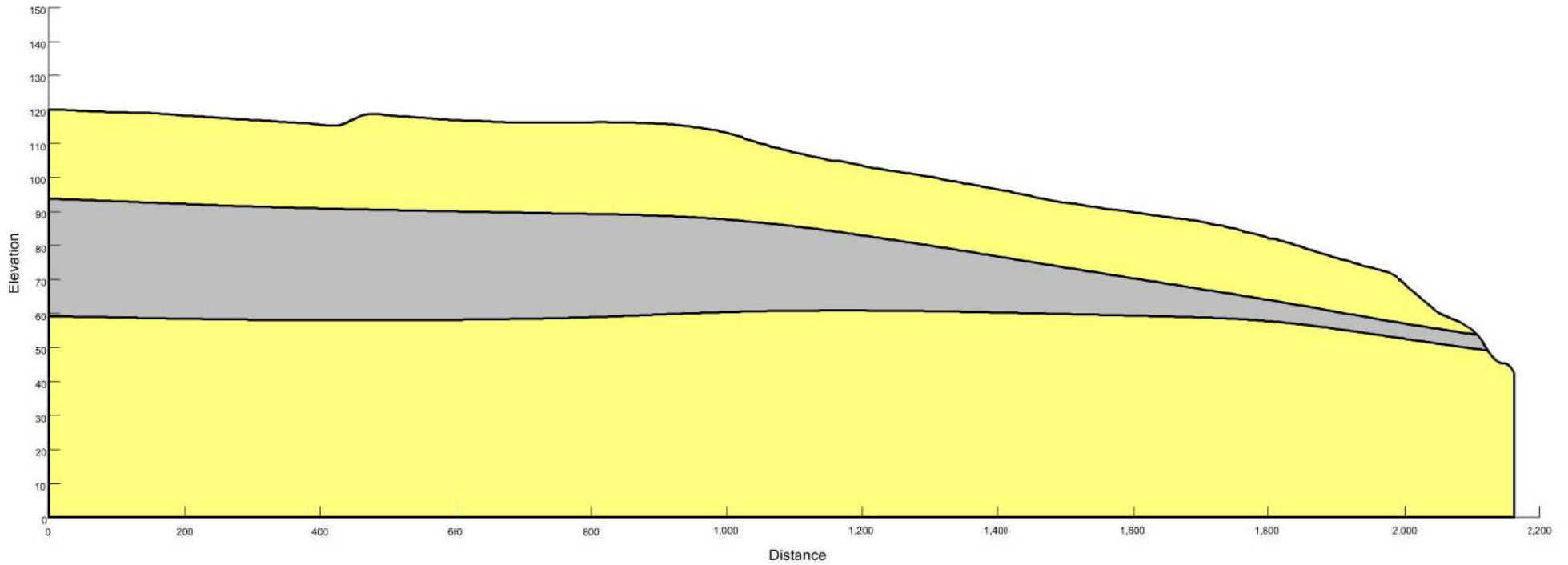
4553 Hyline Road  
Ontario, OR

Modified by: CCW  
May 16, 2023  
Drawing: B230399g



2791 S. Victory View Way Phone: (208) 376-4748  
Boise, ID 83709 Fax: (208) 322-6515  
Web: oneatlas.com

# Cross Section B

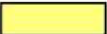



Applicant Exhibit 1 - Page 14 of 31

**NOTES:**

- Not to Scale

**LEGEND**

- Soil 
- Gravel 

**Gerulf Gravel Pit Expansion**

4553 Hyline Road  
Ontario, OR

Modified by: CCW  
May 16, 2023  
Drawing: B230399g



2791 S. Victory View Way Phone: (208) 376-4748  
Boise, ID 83709 Fax: (208) 322-6515  
Web: [oneatlas.com](http://oneatlas.com)



## APPENDIX VI GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-1

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.085946

**Longitude:** -116.994515

**Depth to Water Table:** Not Encountered

**Total Depth:** 25.0 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-24.0	Sandy Silt (ML): Brown to light brown, slightly moist, very stiff to hard, with fine to medium-grained sand. --Moderate to strong cementation encountered from 2.5 to 6.0 feet bgs. --Weak to moderate induration encountered throughout.			2.5-4.5+	
24.0-25.0	Poorly Graded Gravel with Sand (GP): Brown, slightly moist, very dense, with fine to coarse-grained sand, fine to coarse gravel, and 8-inch minus cobbles.				

**Notes:** See Site Map for test pit location.





## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-2

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.085901

**Longitude:** -116.989488

**Depth to Water Table:** Not Encountered

**Total Depth:** 16.5 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-10.5	Sandy Silt (ML): Brown to tan, dry to slightly moist, stiff to hard, with fine-grained sand. --Plow zone noted to 1.0 foot bgs. --Weak to strong cementation encountered from 3.0 to 10.5 feet bgs.			2.0-4.5+	
10.5-16.5	Poorly Graded Gravel with Sand (GP): Light brown, dry to slightly moist, dense, with fine to coarse-grained sand, fine to coarse gravel, and 4-inch minus cobbles.				

**Notes:** See Site Map for test pit location.



## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-3

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.085924

**Longitude:** -116.987235

**Depth to Water Table:** Not Encountered

**Total Depth:** 30.0 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-1.9	Lean Clay (CL): Brown, slightly moist, stiff to very stiff. --Organics and plow zone noted to 1.1 feet bgs.			1.5-2.0	
1.9-6.0	Silt (ML): Tan, dry to slightly moist, very stiff to hard. --Weak induration encountered throughout.				
6.0-8.5	Poorly Graded Gravel with Sand (GP): Brown, dry to slightly moist, dense, with fine to coarse-grained sand, fine to coarse gravel, and 6-inch minus cobbles.	GS	6.0-8.5		A
8.5-30.0	Sandy Silt (ML): Light brown, slightly moist, hard, with fine to medium-grained sand. --Moderate induration encountered throughout.				

**Notes:** See Site Map for test pit location.

Lab Test ID	LL	PI	Sieve Analysis (% Passing)					
			3/4"	#4	#10	#40	#100	#200
A	NP	NP	50	31	27	13	5	3.2



## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-4  
**Date Advanced:** March 28, 2023  
**Excavated by:** Client Supplied Excavator  
**Logged by:** Colby Meyer, GIT

**Latitude:** 44.085921  
**Longitude:** -116.985063  
**Depth to Water Table:** 24.0 feet bgs  
**Total Depth:** 24.5 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-2.0	Lean Clay (CL): Brown, slightly moist, very stiff. --Organics and plow zone noted to 1.3 feet bgs.			2.5	
2.0-8.8	Silt (ML): Light brown, dry to slightly moist, hard. --Weak to moderate induration encountered throughout.				
8.8-11.7	Silty Gravel with Sand (GM): Light brown, slightly moist, dense, with fine to coarse-grained sand and fine to coarse gravel.				
11.7-21.0	Sandy Silt (ML): Light brown, slightly moist, very stiff to hard, with fine-grained sand. --Weak induration encountered throughout.				
21.0-24.5	Poorly Graded Gravel with Sand (GP): Brown, slightly moist to saturated, very dense, with fine to coarse-grained sand, fine to coarse gravel, and 8-inch minus cobbles.	GS			

**Notes:** See Site Map for test pit location.



## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-5

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.084106

**Longitude:** -116.986162

**Depth to Water Table:** Not Encountered

**Total Depth:** 21.0 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-11.5	Silt (ML): Light brown, dry to slightly moist, stiff to hard. --Moderate induration encountered from 5.8 to 11.5 feet bgs.			1.5-4.5+	
11.5-13.5	Silty Gravel with Sand (GM): Light brown, slightly moist, dense, with fine to coarse-grained sand and fine to coarse gravel.				
13.5-21.0	Silty Sand (SM): Brown, slightly moist, dense, with fine to medium-grained sand. --Moderate induration encountered throughout.				

**Notes:** See Site Map for test pit location.



## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-6

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.084488

**Longitude:** -116.991195

**Depth to Water Table:** Not Encountered

**Total Depth:** 28.0 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-15.0	Silt (ML): Brown to light brown, slightly moist, stiff to hard. --Organic material encountered to 0.2 foot bgs. --Plow zone encountered to 1.0 foot bgs. --Moderate induration encountered from 6.5 to 12.0 feet bgs. --Moderate to strong cementation encountered from 12.0 to 19.0 feet bgs.			1.5 (Upper Zone)	
15.0-22.0	Sandy Silt (ML): Brown, slightly moist, very stiff to hard, with fine to medium-grained sand.				
22.0-28.0	Poorly Graded Gravel with Sand (GP): Brown, slightly moist, dense, with fine to coarse-grained sand, fine to coarse gravel, and 6-inch minus cobbles.				

**Notes:** See Site Map for test pit location.



## GEOTECHNICAL INVESTIGATION TEST PIT LOG

**Test Pit Log #:** TP-7

**Date Advanced:** March 28, 2023

**Excavated by:** Client Supplied Excavator

**Logged by:** Colby Meyer, GIT

**Latitude:** 44.084750

**Longitude:** -116.994194

**Depth to Water Table:** Not Encountered

**Total Depth:** 30.0 feet bgs

Depth (feet bgs)	Field Description and USCS Soil and Sediment Classification	Sample Type	Sample Depth (feet bgs)	Qp	Lab Test ID
0.0-13.5	Silt (ML): Brown to light brown, slightly moist, very stiff to hard. --Organic material encountered to 0.3 foot bgs. --Plow zone encountered to 1.0 foot bgs. --Weak to moderate induration encountered throughout.				
13.5-30.0	Sandy Silt (ML): Brown, slightly moist, very stiff to hard, with fine to medium-grained sand. --Moderate induration encountered from 13.5 to 23.0 feet bgs.				

**Notes:** See Site Map for test pit location.



# FIELD BORING LOG

**BORING NO.:** B-1  
**TOTAL DEPTH:** 71.5'  
**GROUNDWATER DEPTH:** 57.7'

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Wyatt Wolfe, EI

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 30, 2023  
**LATITUDE/LONGITUDE:** 44.086030, -116.994333

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0									
0 - 21.5	SANDY SILT (ML)	Brown to light brown, dry to slightly moist, very stiff to hard, with fine-grained sand. --Calcium carbonate cementation encountered from 10 to 21.5 feet bgs.					21,26,34	0	30
21.5 - 30							6,12,14	0	30
30 - 35	POORLY GRADED SAND WITH GRAVEL (SP)	Light brown to brown, dry, dense to very dense, with fine to coarse-grained sand and fine gravel.					11,15,18	0	30
35 - 40							12,19,32	0	30
40 - 45			12.2	NP	70	6.9	8,11,18	0	30
45 - 50	POORLY GRADED SAND WITH GRAVEL (SP)	Light brown to brown, dry, dense to very dense, with fine to coarse-grained sand and fine gravel.					11,22,20	0	30
50 - 55							44,40,30	0	30
55 - 60	POORLY GRADED GRAVEL WITH SAND (GP)	Light brown, dry to saturated, very dense, with fine to coarse-grained sand and fine to coarse gravel. *Sieve results skewek due to limited sample size.					14,34,43	0	30
60 - 65							46,50 for 4"	0	30
65 - 70							50 for 5"	0	30
70 - 71.5	SANDY SILT (ML)	Brown, saturated, hard, with fine-grained sand.					30,50 for 1"	0	30
							20,34,30	0	30
							40,50 for 1"	0	30
							20,50 for 1"	0	30



# FIELD BORING LOG

**BORING NO.:** B-2  
**TOTAL DEPTH:** 56.3'  
**GROUNDWATER DEPTH:** 48.2'

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Colby Meyer, GIT

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 31, 2023  
**LATITUDE/LONGITUDE:** 44.085960, -116.991198

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0		SANDY SILT (ML): Brown, slightly moist, hard, with fine-grained sand.							
5								0	30
10								0	30
15		POORLY GRADED GRAVEL WITH SAND (GP): Brown to light brown, slightly moist, very dense, with fine to coarse-grained sand and fine to coarse gravel.						40, 50 for 3"	0
20		SANDY SILT (ML): Brown, slightly moist, hard, with fine-grained sand.						11, 32, 50 for 1"	0
25		POORLY GRADED GRAVEL WITH SAND (GP): Brown, slightly moist, very dense, with fine to coarse-grained sand and fine to coarse gravel.						50 for 4"	0
30			2.2	NP	50	4.3		36, 50 for 4"	0
35								18, 50 for 3"	0
40								26, 50 for 3"	0
45		POORLY GRADED SAND WITH GRAVEL (SP): Tan, slightly moist to saturated, very dense, with fine to coarse-grained sand and fine to coarse gravel.						30, 50 for 5"	0
50								6, 40, 50 for 3"	0
55		SILTY SAND (SM): Brown, saturated, very dense, with fine to medium-grained sand.						15, 40, 50 for 4"	0





# FIELD BORING LOG

**BORING NO.:** B-3  
**TOTAL DEPTH:** 31.5'  
**GROUNDWATER DEPTH:** 26.6'

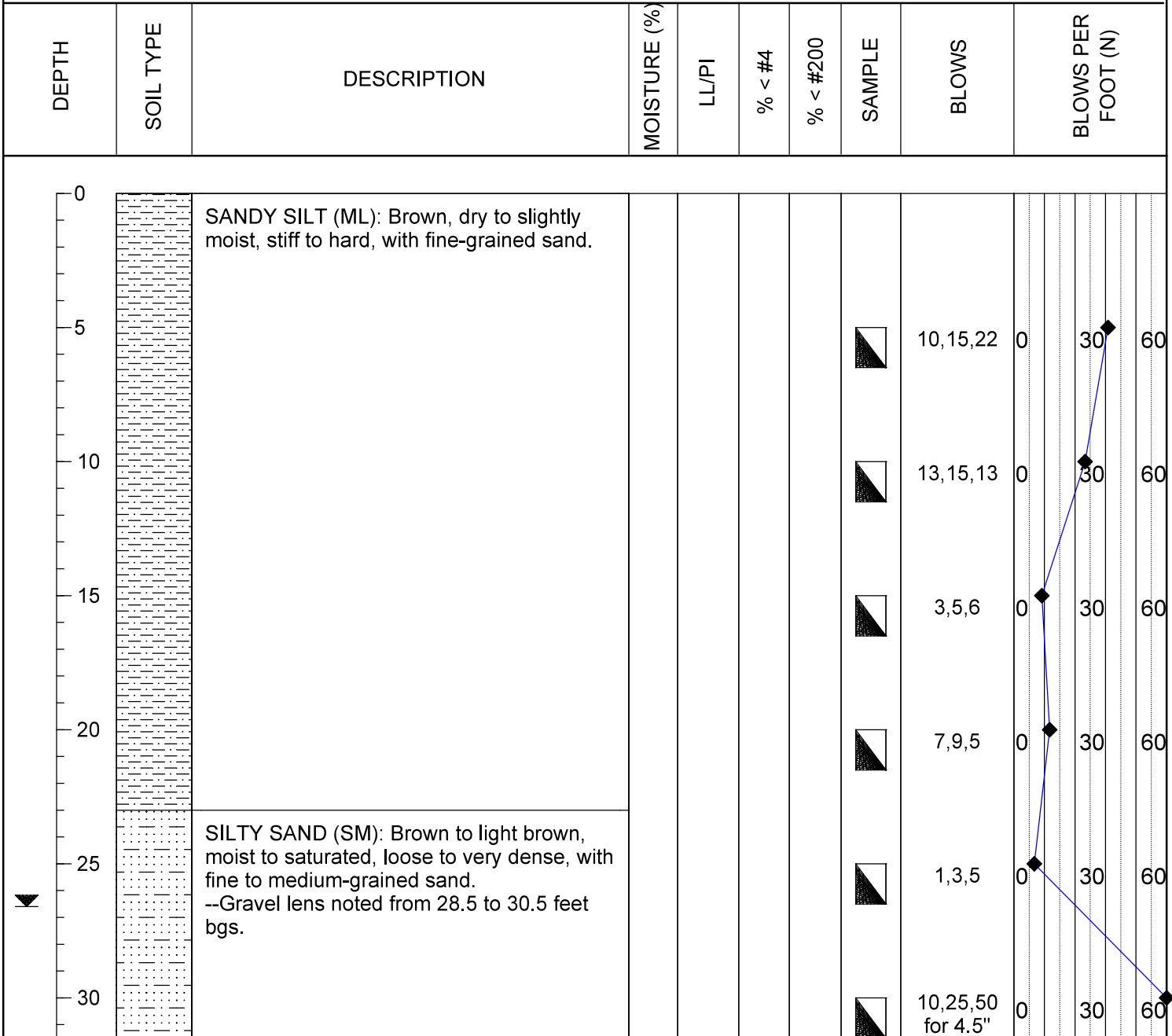
## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Wyatt Wolfe, EI

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 29, 2023  
**LATITUDE/LONGITUDE:** 44.085880, -116.985256

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler





# FIELD BORING LOG

**BORING NO.: B-4**  
**TOTAL DEPTH: 71.5'**  
**GROUNDWATER DEPTH: 57.5'**

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Wyatt Wolfe, EI

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 30, 2023  
**LATITUDE/LONGITUDE:** 44.084413, -116.993620

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0									
0-10		SANDY SILT (ML): Brown to light brown, dry to slightly moist, very stiff to hard, with fine-grained sand.					4,8,10	0	30
10-15							24,50 for 4"	0	30
15-20							6,8,11	0	30
20-25		POORLY GRADED SAND WITH GRAVEL (SP): Light brown to brown, dry, dense, with fine to coarse-grained sand and fine gravel.					23,50 for 5"	0	30
25-30							10,20,23	0	30
30-35		POORLY GRADED GRAVEL WITH SAND (GP): Light brown, dry to saturated, very dense, with fine to coarse-grained sand and fine to coarse gravel.					6,30,50 for 5"	0	30
35-40							16,45,50 for 3"	0	30
40-45							50 for 5.5"	0	30
45-50		*Sieve results skewek due to limited sample size.	4.6	NP	55	5.8	40,50 for 2"	0	30
50-55							47,50 for 2"	0	30
55-60							35,50 for 4"	0	30
60-65		SANDY SILT (ML): Brown, saturated, hard, with fine-grained sand.					39,44,50 for 3"	0	30
65-70							50 for 5"	0	30
70							16,25,38	0	30



# FIELD BORING LOG

**BORING NO.: B-5**  
**TOTAL DEPTH: 46.4'**  
**GROUNDWATER DEPTH: None**

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Colby Meyer, GIT

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 31, 2023  
**LATITUDE/LONGITUDE:** 44.084905, -116.989886

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0 - 14	SANDY SILT (ML)	Brown, slightly moist, hard, with fine-grained sand.							
14 - 46.4	POORLY GRADED GRAVEL WITH SAND (GP)	Brown to light brown, slightly moist, very dense, with fine to coarse-grained sand and fine to coarse gravel. *Sieve results skewed due to limited sample size.	3.9	22/5	54	7.8			
14 - 15							50 for 5.5"	0	30 60
19 - 20							35, 50 for 4"	0	30 60
24 - 25							50 for 4"	0	30 60
29 - 30							50 for 5.5"	0	30 60
34 - 35							13, 37, 37	0	30 60
39 - 40							50, 50 for 1"	0	30 60
44 - 45	SILTY SAND (SM)	Brown, slightly moist, very dense, with fine to medium-grained sand.					11, 30, 50 for 4"	0	30 60



# FIELD BORING LOG

**BORING NO.: B-6**  
**TOTAL DEPTH: 71.5'**  
**GROUNDWATER DEPTH: None**

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Wyatt Wolfe, EI

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 29, 2023  
**LATITUDE/LONGITUDE:** 44.083786, -116.990608

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)	
0										
5		SANDY SILT (ML): Brown, dry to slightly moist, hard, with fine-grained sand. --Calcium carbonate cementation encountered from 10 to 11.5 feet bgs.						10,17,20	0	30
10								14,28,41	0	30
15								29,50 for 4"	0	30
20		POORLY GRADED GRAVEL WITH SAND (GP): Light brown to brown, dry to slightly moist, very dense, with fine to coarse-grained sand and fine to coarse gravel. --Minor clay content noted from 35 to 36 feet bgs.						6,15,19	0	30
25								12,22,30	0	30
30								7,17,27	0	30
35								15,50 for 5.5"	0	30
40								27,50 for 1"	0	30
45								47,50 for 1"	0	30
50								42,50 for 2"	0	30
55								30,50 for 3"	0	30
60								50 for 5"	0	30
65			SANDY SILT (ML): Brown, dry to slightly moist, hard, fine-grained sand.						13,30,50 for 5"	0
70								12,37,50	0	30



# FIELD BORING LOG

**BORING NO.:** B-7  
**TOTAL DEPTH:** 51.5'  
**GROUNDWATER DEPTH:** None

## PROJECT INFORMATION

**PROJECT:** Gerulf Gravel Pit Expansion  
**LOCATION:** 4553 Hyline Road  
 Ontario, OR  
**JOB NO.:** B230399g  
**LOGGED BY:** Wyatt Wolfe, EI

## DRILLING INFORMATION

**DRILLING CO.:** Haztech Drilling, Inc.  
**METHOD OF DRILLING:** 6" Hollow Stem Auger  
**SAMPLING METHODS:** Split Spoon  
**DATES DRILLED:** March 29, 2023  
**LATITUDE/LONGITUDE:** 44.083719, -116.986694

Water level during drilling    
 Standard Split Spoon    
 Auger Sample    
 California Sampler

DEPTH	SOIL TYPE	DESCRIPTION	MOISTURE (%)	LL/PI	% < #4	% < #200	SAMPLE	BLOWS	BLOWS PER FOOT (N)
0		SANDY SILT (ML): Brown, dry to slightly moist, very stiff to hard, with fine-grained sand.							
5								5,8,8	0
10		SILTY SAND WITH GRAVEL (SM): Light brown to brown, dry to slightly moist, very dense, with fine to coarse-grained sand and fine to coarse gravel.						12,29,34	0
15								17,43,50 for 5.5"	0
20		POORLY GRADED GRAVEL WITH SAND (GP): Light brown, dry, very dense, with fine to coarse-grained sand and fine to coarse gravel.						16,27,36	0
25		SANDY SILT (ML): Brown, dry, hard, with fine-grained sand.						11,34,50 for 5"	0
30								11,35,50 for 4.5"	0
35								13,33,50 for 5"	0
40								12,32,50 for 5.5"	0
45								13,32,50 for 5"	0
50								12,24,41	0

## APPENDIX VIII GEOTECHNICAL GENERAL NOTES

Unified Soil Classification System			
Major Divisions		Symbol	Soil Descriptions
Coarse-Grained Soils < 50% passes No.200 sieve	Gravel & Gravelly Soils < 50% coarse	GW	Well-graded gravels; gravel/sand mixtures with little or no fines
		GP	Poorly-graded gravels; gravel/sand mixtures with little or no fines
		GM	Silty gravels; poorly-graded gravel/sand/silt mixtures
		GC	Clayey gravels; poorly-graded gravel/sand/clay mixtures
	Sand & Sandy Soils > 50% coarse fraction	SW	Well-graded sands; gravelly sands with little or no fines
		SP	Poorly-graded sands; gravelly sands with little or no fines
		SM	Silty sands; poorly-graded sand/gravel/silt mixtures
Fine-Grained Soils > 50% passes No.200 sieve	Sils & Clays LL < 50	SC	Clayey sands; poorly-graded sand/gravel/clay mixtures
		ML	Inorganic silts; sandy, gravelly or clayey silts
		CL	Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays
	Sils & Clays LL > 50	OL	Organic, low-plasticity clays and silts
		MH	Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
		CH	Fat clays; high-plasticity, inorganic clays
Highly Organic Soils		OH	Organic, medium to high-plasticity clays and silts
		PT	Peat, humus, hydric soils with high organic content

Relative Density and Consistency Classification	
Coarse-Grained Soils	SPT Blow Counts (N)
Very Loose:	< 4
Loose:	4-10
Medium Dense:	10-30
Dense:	30-50
Very Dense:	> 50
Fine-Grained Soils	
	SPT Blow Counts (N)
Very Soft:	< 2
Soft:	2-4
Medium Stiff:	4-8
Stiff:	8-15
Very Stiff:	15-30
Hard:	> 30

Moisture Content and Cementation Classification	
Description	Field Test
Dry	Absence of moisture, dry to touch
Slightly Moist	Damp, but no visible moisture
Moist	Visible moisture
Wet	Visible free water
Saturated	Soil is usually below water table
Moisture Content and Cementation Classification	
Description	Field Test
Weak	Crumbles or breaks with handling or slight finger pressure
Moderate	Crumbles or breaks with considerable finger pressure
Strong	Will not crumble or break with finger pressure

Particle Size	
Boulders:	> 12 in.
Cobbles:	12 to 3 in.
Gravel:	3 in. to 5 mm
Coarse-Grained Sand:	5 to 0.6 mm
Medium-Grained Sand:	0.6 to 0.2 mm
Fine-Grained Sand:	0.2 to 0.075 mm
Sils:	0.075 to 0.005 mm
Clays:	< 0.005 mm

Acronym List	
GS	grab sample
LL	Liquid Limit
M	moisture content
NP	non-plastic
PI	Plasticity Index
Q <sub>p</sub>	penetrometer value, unconfined compressive strength, tsf
V	vane value, ultimate shearing strength, tsf



# Important Information about This

# Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

**The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.**

## Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

## Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer

will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

## Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

## You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

### Most of the “Findings” Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site’s subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual site-wide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

### This Report’s Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

### This Report Could Be Misinterpreted

Other design professionals’ misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals’ plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

### Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note*

*conspicuously that you’ve included the material for information purposes only.* To avoid misunderstanding, you may also want to note that “informational purposes” means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

### Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled “limitations,” many of these provisions indicate where geotechnical engineers’ responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

### Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a “phase-one” or “phase-two” environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

### Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer’s services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer’s recommendations will not of itself be sufficient to prevent moisture infiltration.* Confront the risk of moisture infiltration by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*



Telephone: 301/565-2733

e-mail: [info@geoprofessional.org](mailto:info@geoprofessional.org) [www.geoprofessional.org](http://www.geoprofessional.org)

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APPLICANT EXHIBIT 2  
Atlas Quality Analysis

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June 12, 2023

Atlas No. B230399g

Chad Gerulf  
Steve's Backhoe Service  
618 Railroad Avenue  
Ontario, OR 97914

**Subject: Addendum #1 – Gravel Quality Analysis  
Gerulf Gravel Pit Expansion  
4553 Hyline Road  
Ontario, OR**

Dear Chad Gerulf:

This addendum report presents test results unavailable at the time of the previously issued Atlas Geotechnical Engineering Report (B230399g). Descriptions of general site characteristics and the proposed project are available in the previous report. Unless otherwise noted in this addendum, all initial recommendations, limitations, and warranties expressed in the previous report must be adhered to.

Laboratory tests were conducted in accordance with current applicable Oregon Department of Transportation (ODOT) and American Association of State Highway and Transportation Officials (AASHTO) specifications, and results of these tests are included as **Attachments**. The laboratory testing program for this report included: Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine Testing – AASHTO T 96, Soundness of Aggregate by Use of Sodium Sulfate – AASHTO T 104, and Oregon Air Aggregate Degradation – ODOT TM 208.

Based on the reported test pit/sample locations, the test samples can be expected to be generally representative of the aggregates at the overall site and associated subsurface conditions. Test results, included with this report, of the samples indicate that the materials appear to meet the requirements of Oregon Standard Specifications for Construction, 2018, Base Aggregate, 02630.1 (c) Durability section.



If you have any questions, please call us at (208) 376-4748.

Respectfully submitted,

Clinton Wyllie, PG (ID)  
Staff Geologist

Attachments: Abrasion Test Results  
Soundness Test Results  
Oregon Air Degradation Test Results

Distribution: Lisa Reeser, LR Consulting (PDF Copy)

*Elizabeth Brown*  
Elizabeth Brown, PE OREGON  
Geotechnical Services Manager  
MAY 10, 2023  
EXPIRES: 12/31/2025



## ABRASION TEST RESULTS – AASTHO T96

<b>Source:</b>	Existing Gravel Pit Sidewall						
<b>Date Obtained:</b>	April 18 <sup>th</sup> , 2023						
<b>Sample ID:</b>	23-0226						
<b>Sampling and Preparation:</b>	ASTM D75:	X	AASHTO T2:		ASTM D421:	X	AASHTO T87:
<b>Test Standard:</b>	ASTM C535:	X	AASHTO T96:				

Nominal Maximum Size of Aggregate	2"
Grading Designation	2
Loss by Abrasion (%)	20.17

**Specification: 35% maximum**

<b>Source:</b>	TP-3: 6.0'-8.5', Poorly Graded Gravel with Sand						
<b>Date Obtained:</b>	April 18 <sup>th</sup> , 2023						
<b>Sample ID:</b>	23-0227						
<b>Sampling and Preparation:</b>	ASTM D75:	X	AASHTO T2:		ASTM D421:	X	AASHTO T87:
<b>Test Standard:</b>	ASTM C535:	X	AASHTO T96:				

Nominal Maximum Size of Aggregate	3"
Grading Designation	2
Loss by Abrasion (%)	18.38

**Specification: 35% maximum**



## SOUNDNESS TEST RESULTS – AASTHO T104

<b>Source:</b>	Existing Gravel Pit Sidewall							
<b>Date Obtained:</b>	April 18 <sup>th</sup> , 2023							
<b>Sample ID:</b>	23-0226							
<b>Sampling and Preparation:</b>	ASTM D75:	X	AASHTO T2:		ASTM D421:	X	AASHTO T87:	
<b>Test Standard:</b>	ASTM C88:	X	AASHTO T104:					
<b>Solution:</b>	Sodium:	X	Magnesium:		Fresh Prepared:		Previously Used:	X

### Coarse Aggregate

Sieve Size		Weight of Test Fraction Before Test	% Passing Designated Sieve After Test	Weighted % Loss
Passing	Retained			
2.5"	2.0"	3020.3	2.8	0.5
2.0"	1.5"	2073.1		
1.5"	1.0"	1022.9	1.4	0.3
1.0"	¾"	522.5		
¾"	½"	662.1	1.6	0.3
½"	3/8"	325.3		
3/8"	#4	298.9	4.0	0.5
			Total	1.6

**Specification: 12% maximum**

### Coarse Aggregate Examination

Sieve Size		Splitting		Crumbling		Cracking		Flaking		# of Particles Before Test
Passing	Retained	No.	%	No.	%	No.	%	No.	%	
2.5"	1.5"			2						13

### Fine Aggregate

Sieve Size		Weight of Test Fraction Before Test	% Passing Designated Sieve After Test	Weighted % Loss
Passing	Retained			
#4	#8	100.0	2.7	0.2
#8	#16	N/A*	N/A*	0.4*
#16	#30	100.0	6.8	0.5
#30	#50	100.0	9.1	0.8
			Total	1.9

**Specification: 12% maximum**



## SOUNDNESS TEST RESULTS – AASTHO T104

<b>Source:</b>	TP-3: 6.0'-8.5', Poorly Graded Gravel with Sand							
<b>Date Obtained:</b>	April 18 <sup>th</sup> , 2023							
<b>Sample ID:</b>	23-0227							
<b>Sampling and Preparation:</b>	ASTM D75:	X	AASHTO T2:		ASTM D421:	X	AASHTO T87:	
<b>Test Standard:</b>	ASTM C88:	X	AASHTO T104:					
<b>Solution:</b>	Sodium:	X	Magnesium:		Fresh Prepared:		Previously Used:	X

### Coarse Aggregate

Sieve Size		Weight of Test Fraction Before Test	% Passing Designated Sieve After Test	Weighted % Loss
Passing	Retained			
3.5"	3.0"	6252.3	0.1	0.0
2.5"	2.0"	3050.0	2.3	0.5
2.0"	1.5"	2013.0		
1.5"	1.0"	992.2	0.4	0.1
1.0"	¾"	486.8		
¾"	½"	664.4	0.4	0.0
½"	3/8"	332.2		
3/8"	#4	299.9	2.8	0.2
Total				0.8

**Specification: 12% maximum**

### Coarse Aggregate Examination

Sieve Size		Splitting		Crumbling		Cracking		Flaking		# of Particles Before Test
Passing	Retained	No.	%	No.	%	No.	%	No.	%	
2.5"	1.5"			1						11

### Fine Aggregate

Sieve Size		Weight of Test Fraction Before Test	% Passing Designated Sieve After Test	Weighted % Loss
Passing	Retained			
#4	#8	N/A*	N/A*	0.2*
#8	#16	N/A*	N/A*	1.0*
#16	#30	100.0	15.6	1.0
#30	#50	100.0	9.3	1.0
Total				3.2

**Specification: 12% maximum**



## OREGON AIR DEGRADATION – ODOT TM 208

<b>Source and Description:</b>	Existing Gravel Pit Sidewall						
<b>Date Obtained:</b>	April 28, 2023						
<b>Sampling and Preparation:</b>	ASTM D75:		AASHTO T2:		AASHTO T146:	X	ASTM D421/D2217:
<b>Test Standard:</b>	ODOT TM208	X					

Nominal Maximum Size of Aggregate	#10	Specifications
Sediment Height In Inches:	0.3	3.0" Max
Percent Passing No. 20 Sieve:	6.1	30% Max

<b>Source and Description:</b>	TP-3: 6.0'-8.5', Poorly Graded Gravel with Sand						
<b>Date Obtained:</b>	April 28, 2023						
<b>Sampling and Preparation:</b>	ASTM D75:		AASHTO T2:		AASHTO T146:	X	ASTM D421/D2217:
<b>Test Standard:</b>	ODOT TM208	X					

Nominal Maximum Size of Aggregate	#10	Specifications
Sediment Height In Inches:	0.2	3.0" Max
Percent Passing No. 20 Sieve:	5.2	30% Max

Specifications: ODOT Section 02690.20(d)

Note: Water used for testing was distilled, and at a controlled temperature of 23 degrees Celsius.



APPLICANT EXHIBIT 3  
Topographical Map

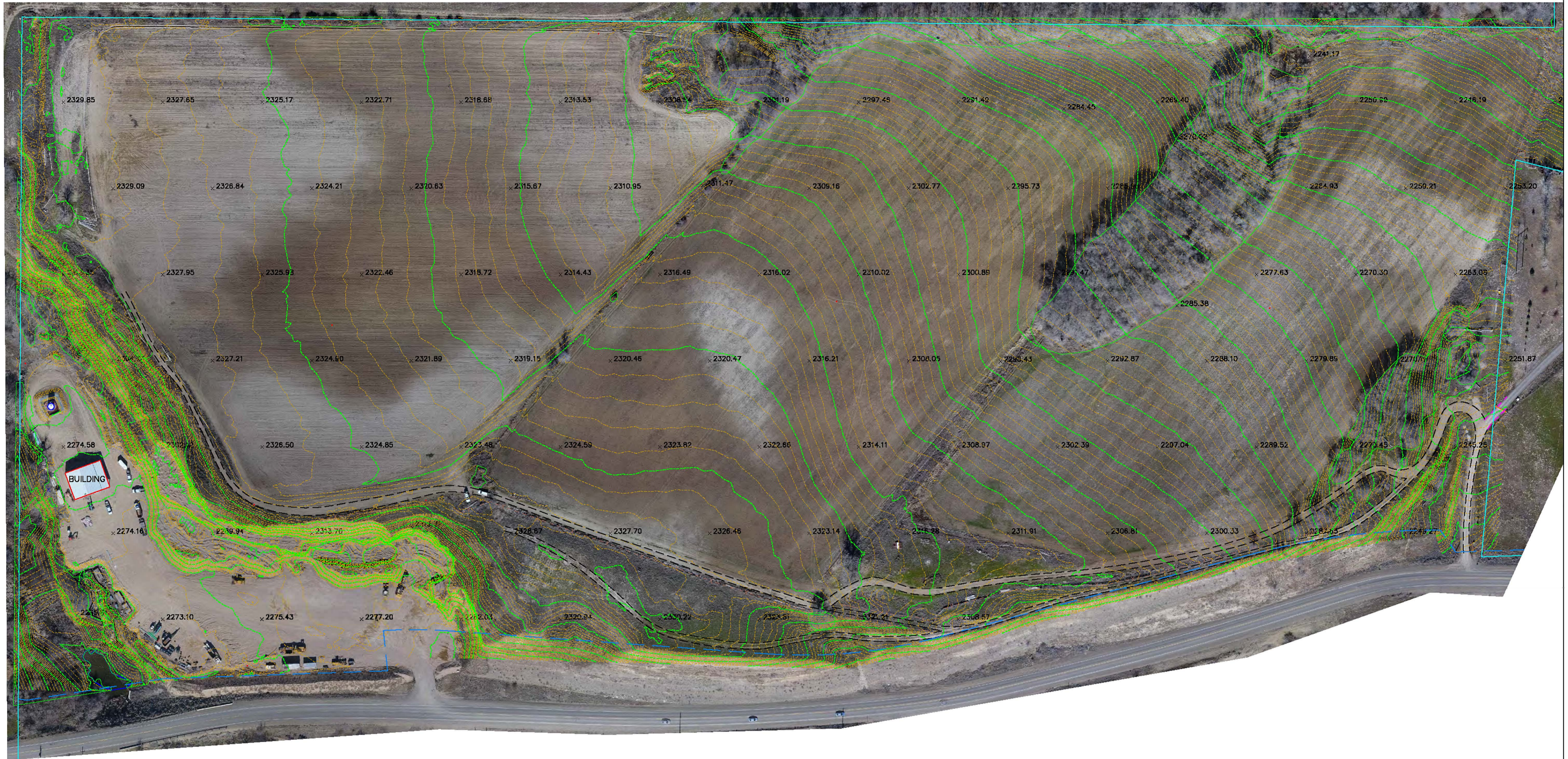
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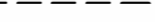


# TOPOGRAPHY MAP

WITHIN THE S1/2SE1/4 OF SECTION 17, TOWNSHIP 17 NORTH, RANGE 47 WEST  
OF THE WILLAMETTE MERIDIAN IN MALHEUR COUNTY, OREGON

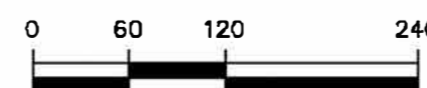


## LEGEND

-  BOUNDARY LINE
-  ROAD RIGHT OF WAY
-  EXISTING FENCE
-  ROAD
-  SPOT ELEVATIONS



SCALE: 1" = 120'



Derrick  
McKrola

Digitally signed by Derrick  
McKrola  
Date: 2022.03.28  
08:30:00 -0700

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

DIGITALLY SIGNED

OREGON  
MAY 10, 2011  
DERRICK MCKROLA  
80085

EXPIRES: 12/31/2022

TOPOGRAPHY MAP FOR:

**GERULF GRAVEL PIT**

**DERRICK MCKROLA**  
LAND SURVEYOR

**3811 BIRCH RD, VALE, OR 97918**  
mckrola@gmail.com 541.668.3344

DRAWING FILE: 11-05DW6 FIELD DATE: 3/27/2022

JOB NO. 11-05

SHEET 1 OF 1

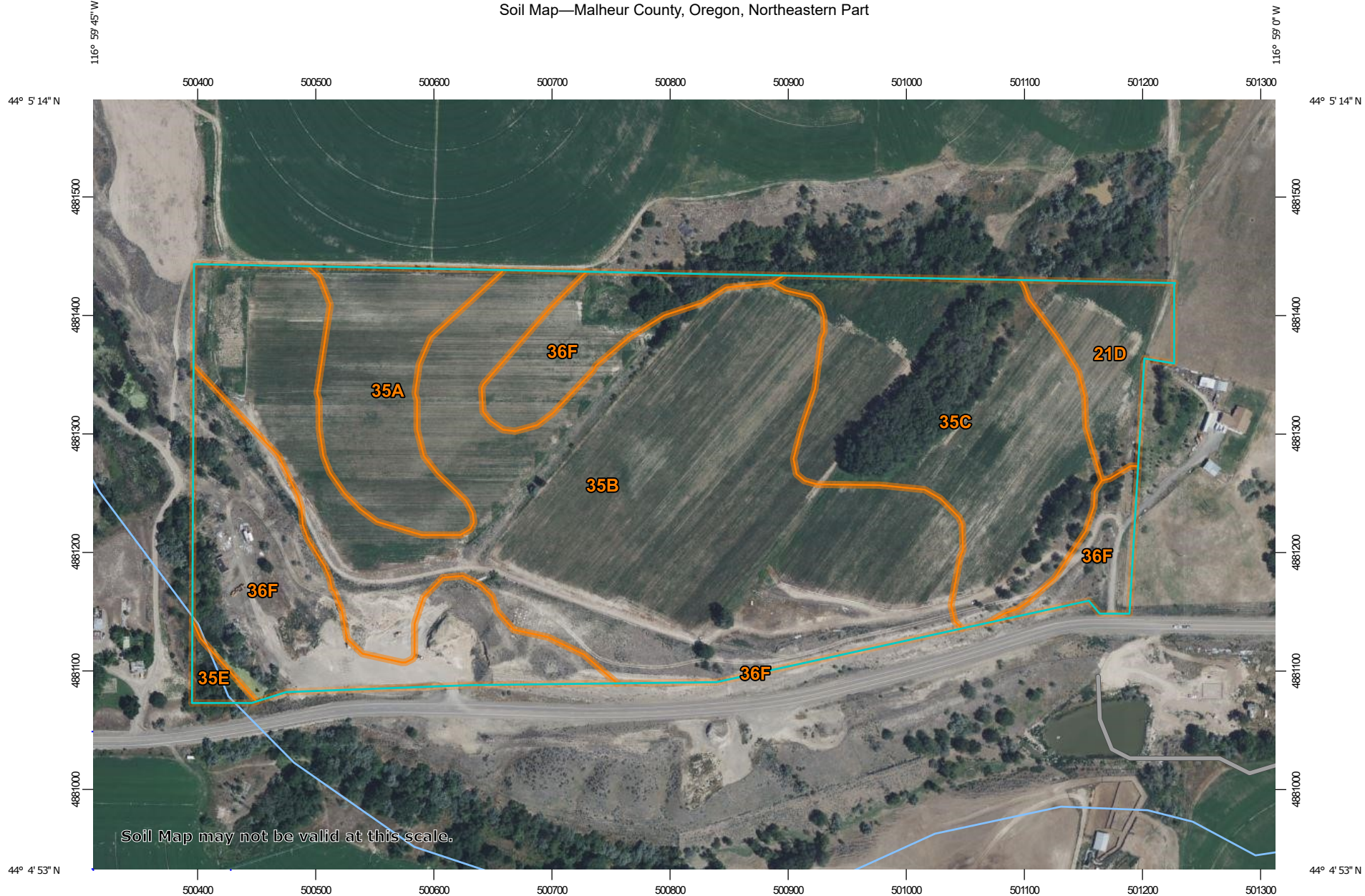


APPLICANT EXHIBIT 4  
Soil Map

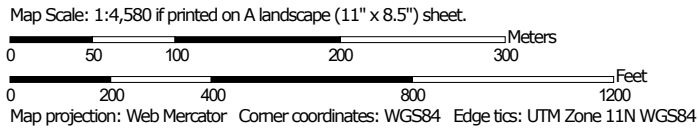
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Soil Map—Malheur County, Oregon, Northeastern Part




Soil Map may not be valid at this scale.



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)




















**Soils**





 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Malheur County, Oregon, Northeastern Part  
 Survey Area Data: Version 19, Sep 11, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 25, 2020—Jul 26, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21D	Nyssa silt loam, 8 to 12 percent slopes	2.9	4.4%
35A	Virtue silt loam, 0 to 2 percent slopes	5.3	7.9%
35B	Virtue silt loam, 2 to 5 percent slopes	32.3	48.8%
35C	Virtue silt loam, 5 to 8 percent slopes	12.3	18.6%
35E	Virtue silt loam, 12 to 20 percent slopes	0.4	0.7%
36F	Xeric Torriorthents, very steep	13.0	19.6%
<b>Totals for Area of Interest</b>		<b>66.3</b>	<b>100.0%</b>

APPLICANT EXHIBIT 5  
Current Deed

---







I, Gayle V. Trotter, County Clerk for Malheur County,  
Oregon certify that the instrument identified herein was  
recorded in the Clerk records.  
Gayle V. Trotter - County Clerk

*Return Document & Tax Statements To:*  
Steven Gerulf & Barbar Gerulf, Trustees  
618 Railroad Ave  
Ontario, OR 97914

**BARGAIN AND SALE DEED**  
(Property Line Adjustment)

STEVEN GERULF AND BARBARA GERULF, Trustees of the Steven and Barbara Gerulf trust, u/a/d 12-8-09, Grantor, grants, bargains, sells, and conveys to STEVEN GERULF AND BARBARA GERULF, Trustees of the Steven and Barbara Gerulf trust, u/a/d 12-8-09, Grantee, the following real property, situated in Malheur County, Oregon to-wit:

See **Exhibit A** attached hereto  
And by this reference incorporated herein.

This Deed is granted to effect a property line adjustment as defined in ORS 92.010 (12) and required by ORS 92.190 (4), descriptions of the adjusted parcels are as follows:

- (1) A description of Grantors remaining parcel, as adjusted after this property line adjustment deed, is described in **Exhibit B**, attached hereto.
- (2) A description of Grantees remaining parcel, as adjusted after this property line adjustment deed, is described in **Exhibit C**, attached hereto.

No new parcels are created by this deed.

The true consideration for this conveyance is \$ 0. (ORS 93.030)

“BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON’S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.”

The original parcels are described by the following Instruments:

Grantor (Tax Lot 500, Map 17S47E); Warranty Deed Instrument No. 2018-4153 recorded November 7, 2018, records of Malheur County.

Grantee (Tax Lot 100; Map 17S47E20); Warranty Deed Instrument No. 2018-4153 recorded November 7, 2018, records of Malheur County.

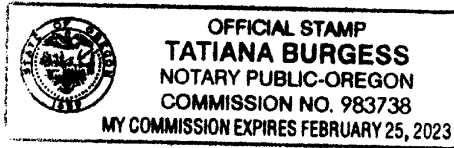
Grantor(s):

Steven Gerulf  
Steven Gerulf, Trustee

Barbara Gerulf  
Barbara Gerulf, Trustee

State of OREGON )  
                          )ss  
County of MALHEUR)

On this 19<sup>th</sup> day of JANUARY 2021, personally appeared STEVEN GERULF AND BARBARA GERULF, Trustees of the Steven and Barbara Gerulf trust, u/a/d 12-8-09, being duly sworn, provided to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.



[Signature]  
NOTARY FOR  
My Commission Expires: 02-25-2023

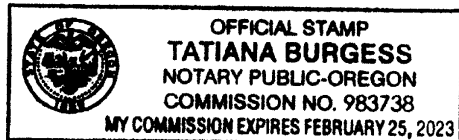
Grantee(s):

Steven Gerulf  
Steven Gerulf, Trustee

Barbara Gerulf  
Barbara Gerulf, Trustee

State of OREGON )  
                          )ss  
County of MALHEUR)

On this 19<sup>th</sup> day of JANUARY 2021, personally appeared STEVEN GERULF AND BARBARA GERULF, Trustees of the Steven and Barbara Gerulf trust, u/a/d 12-8-09, being duly sworn, provided to me on the basis of satisfactory evidence to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.



[Signature]  
NOTARY FOR  
My Commission Expires: 02-25-2023

**Exhibit A**

**Boundary Description of Adjustment Parcel**

(A portion of Tax Lot 500, Map 17S47E to be conveyed to Tax Lot 100, Map 17S47E20)

Land in Malheur County, Oregon, as follows:

In Township 17 South, Range 47 East, Willamette Meridian:

The SW1/4SW1/4 of Section 16 and the S1/2SE1/4 of Section 17 lying south of the centerline of Stanton Boulevard and lying west of the State Highway 201 right of way.

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Derrick McKrola*

OREGON  
MAY 10, 2011  
DERRICK McKROLA  
80085

EXPIRES: 12/31/2022

**Exhibit B**  
**Grantor's Resulting Parcel**  
(A Portion of Tax Lot 500, Map 17S47E)

Land in Malheur County, Oregon, as follows:

In Twp. 17 S., R. 47 E., W.M.:

Portions of the W1/2 SW1/4 of Sec. 16, and the S1/2 SE1/4 of Sec. 17, more particularly described as follows:

Unsurveyed Parcel No. 1, of Partition Plat 2007-24, recorded November 7, 2007, as instrument No. 2007-8243, records of Malheur County, Oregon,

EXCEPTING THEREFROM the following described:

Unit No. 1: A portion of land in the NW1/4 SW1/4, of said Sec. 16, described as follows:

Beginning at the intersection of the South line of the County Road in the East line of the NW1/4 SW1/4 of Sec. 16, said point being 2390.05 feet North and 1316.81 feet East of the Southwest corner of said Sec. 16;

thence S. 0° 16' E., along the East line, 262.7 feet;

thence S. 70° 08' 30" W., 159.2 feet;

thence N. 0° 16' W., 312.4 feet to the South line of the County Road;

thence N. 88° 20' 30" E., along the South line, 150 feet to the Point of Beginning.

Unit No. 2: That portion as conveyed to Malheur County by Deed recorded Apr. 15, 1921, Book 19, Page 236 for a strip 60 feet wide across the SW1/4 of Sec. 16.

Unit No. 3: That portion as conveyed to the State Highway Commission by deed recorded May 12, 1950, Book 82, Inst. No. 5055, across the NW1/4 SW1/4 of Sec. 16.

Unit No. 4: A parcel of land in the NW1/4 SW1/4, of said Sec. 16, described as follows:  
Parcel No. 3 of Partition Plat 2007-24, recorded November 7, 2007, as instrument No. 2007-8243, records of Malheur County, Oregon.

**FURTHER EXCEPTING THEREFROM** the following described:

The SW1/4SW1/4 of Section 16 and the S1/2SE1/4 of Section 17 lying south of the centerline of Stanton Boulevard and lying west of the State Highway 201 right of way.

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Derrick McKrola*

OREGON  
MAY 10, 2011  
DERRICK McKROLA  
80085

**Exhibit C**

**Grantee's Resulting Parcel**

(Tax Lot 100, Map 17S47E20 and a portion of Tax Lot 500, Map 17S47E)

Land in Malheur County, Oregon, as follows:

In Twp. 17 S., R. 47 E., W.M.:

Sec. 20: A parcel of land in the NE1/4 NE1/4, more particularly described as follows:

Beginning at the Northeast corner of said NE1/4 NE1/4;  
thence South, along the East boundary thereof, 75 feet;  
thence West, parallel with the North boundary of the NE1/4 NE1/4, 300 feet;  
thence Northwesterly in a straight line to a point on the North boundary of the NE1/4 NE1/4,  
said point being 545 West of the point of beginning;  
thence Southwesterly in a straight line to a point on the West boundary of the NE1/4 NE1/4,  
said point being 258 feet South of the Northwest corner thereof;  
thence North, along the West boundary of the NE1/4 NE1/4, 258 feet;  
thence East, along the North boundary thereof, to the Point of Beginning.

**TOGETHER WITH** the following described:

The SW1/4SW1/4 of Section 16 and the S1/2SE1/4 of Section 17 lying south of the centerline of Stanton Boulevard and lying west of the State Highway 201 right of way.

REGISTERED  
PROFESSIONAL  
LAND SURVEYOR

*Derrick McKrola*

OREGON  
MAY 10, 2011  
DERRICK McKROLA  
80085

EXPIRES: 12/31/2022

APPLICANT EXHIBIT 6  
Gravel Pit Boundary

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## Exhibit A

(A Portion of Tax Lot 500, Map 17S47E)

Land in Malheur County, Oregon:

In Township 17 South, Range 47 East, Willamette Meridian:

That portion of the Unsurveyed Parcel No. 1 of Partition Plat 2007-24, recorded November 7, 2007, as instrument No. 2007-8243, records of Malheur County Clerk lying within the S1/2SE1/4 of Section 17, more particularly described as follows:

BEGINNING at the Northwest corner of said S1/2SE1/4;  
thence South 00°18'56" East, along the west boundary of said S1/2SE1/4, a distance of 1198.66 feet to a point on the northerly right of way of Stanton Boulevard;  
thence along said northerly right of way of Stanton Boulevard the following courses:

thence South 82°40'48" East, a distance of 15.29 feet;  
thence North 81°06'26" East, a distance of 243.79 feet;  
thence North 88°00'27" East, a distance of 393.95 feet;  
thence North 06°01'14" West, a distance of 71.11 feet;  
thence South 88°23'14" East, a distance of 111.87 feet;  
thence South 85°52'23" East, a distance of 552.73 feet to a 910.00-foot radius curve to the left;  
thence along said curve, arc distance of 301.64 feet, through a central angle of 18°59'30", and being subtended by a chord which bears, North 84°37'52" East, a distance of 300.26 feet;  
thence North 75°08'07" East, a distance of 571.78 feet to a 1290.00-foot radius curve to the right;  
thence along said curve, arc distance of 337.72 feet, through a central angle of 15°00'00", and being subtended by a chord which bears, North 82°38'07" East, a distance of 313.26 feet;  
thence South 35°11'02" East, a distance of 47.49 feet;  
thence North 88°10'00" East, a distance of 44.21 feet to the west boundary of Parcel No. 2 of said Partition Plat 2007-24;

thence leaving said right of way, North 04°57'34" East, along said west boundary of Parcel No.2, a distance of 691.88 feet;  
thence South 76°04'07" East, along the north boundary of said Parcel No.2, a distance of 68.86 feet to the east boundary of said S1/2SE1/4;  
thence North 00°08'19" East, along said east boundary of said S1/2SE1/4, a distance of 249.15 feet to the Northeast corner of said S1/2SE1/4;  
thence North 89°35'46" West, along the north boundary of said S1/2SE1/4, a distance of 2696.43 feet to the POINT OF BEGINNING.



APPLICANT EXHIBIT 7  
Operations Plan

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SBS Sand & Gravel Operations Plan  
Gravel Pit Location: XXX Stanton Blvd, Ontario, Oregon, 97914

**Resource Description:**

The mine is located at the above referenced address. The mine is approximately 63.81 acres of tax lot 500 on Malheur County Assessor's Map: 17S47ED001. The mining area contains approximately 2,053,700 cubic yards of gravel. This will be an open pit mine.

**General Description of Mining and Processing Activity:**

Activities on the proposed site location will include excavation, stockpiling, and crushing via a mobile crusher. Stockpiling of overburden for noise, visual, and dust abatement will occur at the proposed location. The Applicant is not requesting an asphalt batch plant at the site. All portions of the parcel not being excavated will remain in farm use, and as part of the reclamation plan, all mined portions will be reclaimed as farmland.

As with most mining operations noise will be generated in the mining area. An earthen berm, at least ten (10) feet in height, will be used to mitigate this noise. Earthen berms are a cost-effective way to mitigate noise pollution from gravel pits. Studies have shown that earth berms reduce noise levels to a greater extent than noise barriers due to absorption and edge effects. In addition to the berm, trees will be planted along the top of the berm to further reduce any noise. Planting trees on earthen berms offers a long-term, sustainable approach to noise mitigation for gravel pits. While the decibel reduction is difficult to quantify precisely, it can be a significant improvement, especially when combined with the noise reduction from the berm itself. In addition, the berm will improve the visual appeal of the berm, creating a more natural and visually pleasing landscape.

Reclamation will occur as the mining operations migrates. The land will be reclaimed as improved farmland, as the project will level the ground and create a more farmable area. As part of this project a five-tower pivot will be installed. The overburden will be overlaid on the mined portions and the land will be recontoured to minimize draining issues and aesthetically fit the surrounding natural landscape. Decompaction and reseedling of the soil will occur and be monitored by Oregon Department of Geology and Mineral Industries.

**Haulage Plan:**

This site will use an existing access to Stanton Boulevard. Most of the product will be hauled down Stanton Boulevard to Highway 201.

**Hours of Operation:**

Normal Hours of Operation will be Monday through Friday 7:00am – 5:00pm. They could also run approximately one Saturday per month with the same hours.

Approximately one (1) time per calendar year, typically somewhere during February or March, a portable rock crusher will be brought into process gravel. The crushers hours of operation will be 7 days per week for a two-week period, 8:00am – 4:00pm.

## **Additional Information for Operation Plan (employees and restrooms)**

### **Our Workforce and Amenities**

Our gravel operation will employ a team of 3-6 people to manage the gravel pit. This includes 3 full time at the gravel pit, and we may utilize up to 3 gravel delivery trucks.

### **Restroom Facilities**

The site is equipped with permanent restroom facilities that meet all regulatory requirements. This onsite wastewater treatment system, permitted by Malheur County Environmental Health (permit number 235750) on February 24, 2023, has a capacity of 150 gallons per day. According to Oregon Administrative Rules, this capacity comfortably accommodates our planned staffing (150 gallons/day capacity / 15 gallons per employee = 10 employees). Therefore, there's no need for portable toilets.

### **Safety Measures**

For enhanced employee safety, the restroom facility also includes a readily accessible safety shower in case of accidental contact with hazardous materials.

### **Setbacks to Residences**

Our mining operations will be conducted at least 200 feet away from all residences.

APPLICANT EXHIBIT 8  
Reclamation Plan

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**OREGON DEPARTMENT OF GEOLOGY & MINERAL INDUSTRIES  
MINED LAND RECLAMATION**

**Operating and Reclamation Plans For Non-Metal and Placer Mines**

23-0157

Applicant: RILEY HILL GENERAL CONTRACTOR

**ALL LANDOWNER(S) WITHIN THE PERMIT AREA**  
(Attach a separate piece of paper if more space is required.)

Name	<u>JOE STIRM</u>	Name	_____
Address	<u>4553 HYLIN ROAD</u>	Address	_____
City/ST/Zip	<u>ONTARIO OREGON 97914</u>	City/ST/Zip	_____
Phone	<u>(541) 889-5777</u>	Phone	_____

**ALL MINERAL RIGHT OWNERS (IF DIFFERENT FROM LANDOWNER(S))**  
(Attach a separate piece of paper if more space is required.)

Name	_____	Name	_____
Address	_____	Address	_____
City/ST/Zip	_____	City/ST/Zip	_____
Phone	_____	Phone	_____

**A. PRE-MINE CONDITIONS**

- |                                 |   |
|---------------------------------|---|
| 1. Current land use             | <u>Dry Rangeland</u>                    |
| 2. Depth of topsoil             | <u>12" approximately</u>                |
| 3. Type & density of vegetation | <u>Sparce - sage &amp; native grass</u> |

**B. OPERATING PLAN**

1. Mining method(s) to be employed (circle all that apply):

- |   |                   |  |
|---|-------------------|--|
| <input checked="" type="checkbox"/> a. Single Bench | b. Multiple Bench | <input checked="" type="checkbox"/> c. Side Hill Cut |
| d. Pond Excavation                                  | e. Placer Mine    | f. Other _____                                       |

- |   |  |
|---|--|
| 2. Disposition of removed vegetation                                    | <u>Incorporate into Topsoil stockpile</u>    |
| 3. Topsoil salvage depth  | <u>12"</u>                                   |
| 4. Overburden removal depth   | <u>48"</u>                                   |
| 5. Will overburden spoil piles or waste dumps be created during mining? | <input checked="" type="checkbox"/> Yes / No |

If yes, what is/are the estimated volume(s)? 5000 yd<sup>3</sup>  
**ADDITIONAL INFORMATION MAY BE REQUIRED FOR LARGE DUMPS  
OR THOSE LOCATED ON STEEP TERRAIN.**

RECEIVED

FEB 17 1998

*Steven G. Gentry*

6-5-19

MLR



6. Ground Water Information

- a. Approximate depth: MINE 50' GROUNDWATER should be the same elevation as stream or below stream
- b. What is the ground water depth estimate based on? (Wells within the permit area must be shown on the map.)

The owner estimates ground water to be at least 80'

7. List types of equipment to be used for mining and processing.

- a. Mining equipment: Dozer, Loader, Portable Crushing & Screening
- b. Type of processing (Check One):
- 1) Wash water will be discharged off-site.
  - 2) Wash water will be contained in a closed system.  
Source of water? \_\_\_\_\_
  - 3) Dry processing.
  - 4) No on-site processing.
  - 5) Other. Explain \_\_\_\_\_

C. POST-MINING LAND USE

What will be the planned post-mining beneficial use of the permit area? The use must be compatible with the post-mining landform and the local land use requirements. Please be specific.

Grazing pasture

D. RECLAMATION TIMING

Oregon State law requires that reclamation be completed within three years following completion of mining.

Reclamation will begin \_\_\_\_\_ days after mining is completed.

-- OR --

If reclamation will be concurrent with mining, please explain the procedure for concurrent reclamation.

Some stockpiling of soil will have to take place until enough staging room is gained by mining, then reclamation can follow as production can follow as production area moves forward.



**E. SURFACE WATER MANAGEMENT**

1. Will mine site dewatering be necessary?

Yes  No

Explain the procedure and where the water will be disposed.

**A PERMIT MAY BE REQUIRED FROM WATER RESOURCE DEPT.  
FOR DEWATERING ACTIVITY.**

2. Will waste water or storm water be contained on-site in a pond?  
Will waste water or storm water be discharged off site?

Yes/No  
Yes  No

Explain discharges or containment procedures.

Berms will be erected on perimeter and floor of pit shall slope  
toward mining face so any runoff will be contained on site.

**A PERMIT FROM THE DEPT. OF ENVIRONMENTAL QUALITY  
IS REQUIRED WHERE POINT SOURCE DISCHARGES ARE MADE FROM THE SITE.**

3. Will any drainages or streams be relocated?  
IF YES, SECTION M-4 MUST BE COMPLETED.

Yes  No

4. What will be the minimum undisturbed setback of the operation from any stream or drainage?  
State name of stream or drainage and distance.

5. Describe methods employed to control erosion and sedimentation in the permit area. Be  
specific, i.e., seeding and mulching stockpiles and bare areas, contour ditching, waterbars, etc.

Berms - around perimeter

6. Will settling ponds or dams be constructed?

Yes  No

a. Please state size of the impoundment(s) and how they will be built. Will the pond be  
excavated or will berms be constructed?

b. If a dam will be constructed, how high will it be? \_\_\_\_\_  
**IF A DAM IS HIGHER THAN 10 FEET OR STORES MORE THAN 9.2 ACRE FEET OF WATER, APPROVAL FROM THE WATER RESOURCES DEPT. IS REQUIRED.**

- c. If berms or a dam will be constructed, please describe construction details and attach a sketch showing construction methods.
- d. How deep will the impoundments be? \_\_\_\_\_
- e. If the impoundments are to be removed upon completion of mining, how will the ponds be drained or filled?  
\_\_\_\_\_  
\_\_\_\_\_

- f. Are settling ponds, wetlands, or a water impoundment to be left upon final reclamation?  
**IF YES, SEE SECTION K.**

Yes /  No

#### F. VISUAL AND NOISE SCREENING

Screening can be very effectively employed to isolate sites from public notice.

1. Does a natural landform or vegetative screen presently exist along the permit boundary?

Yes / No

If yes, what screen width will be maintained during mining? Adjacent property is approx

2. Will a berm and/or vegetation be established to develop a visual screen for the operation?  
200'

Yes /  No

If yes, please describe the height and width of the berms and/or the type and density of vegetation and show the location on the mine map. (Crushed rock stockpiles, although not permanent, can also be used as effective screens.)  
\_\_\_\_\_  
\_\_\_\_\_

#### G. EQUIPMENT AND STRUCTURES REMOVED

Upon final reclamation, will all structures, equipment, and refuse be removed from the site?

Yes / No

If not, please explain what structures will be left.

Equipment only not debris presently on site

#### H. MAP OR AERIAL PHOTO REQUIREMENTS

A mine map is required. It can be based on an aerial photograph, an engineered drawing, a properly scaled hand drawing, or an enlargement of a USGS topographic map. The department can often supply a topographic base map.

1. Map requirements include, but are not limited to:  
a. scale (1" = 100' to 500')  
b. north arrow

Map showing largest area to be mined

- c. appropriate legal description(s) and, if practical, tax lot numbers, etc.
- d. boundary of the area to be permitted
- e. location of plant, office, and maintenance facilities
- f. locations of all intermittent water courses, perennial streams, springs, wetlands, and wells
- g. present mine areas and future mining blocks
- h. areas for topsoil and overburden storage or spoil locations, including berms
- i. location of all proposed access roads
- j. all property lines within 500' of the permit boundary
- k. location of mine, processing, and stockpile areas plus visual and sound berms or screens
- l. setbacks from property lines, streams, etc.
- m. utility poles, gas line rights-of-way, etc.
- n. date of map preparation and the name of the person preparing map

2. Pre- and post-mining cross-sections of the land surface may also be required.

**I. RECLAMATION PROCEDURES**

1. Land Shaping

- a. What will be the steepest above-water excavated slopes left after mining? (1-1/2:1 is the general maximum.)
- b. What will be the steepest above-water fill slopes left after mining? (2:1 is the general maximum.)
- c. What will be done to ensure their stability?

Not to exceed

1-1/2 : 1

Not to exceed

2 : 1

Excavated Slopes

Fill Slopes

Grasses planted  
\_\_\_\_\_  
\_\_\_\_\_

Grasses planted & perhaps  
some gentler slopes  
\_\_\_\_\_

2. Reclamation techniques.

- a. What will be done with any oversized rock not used during mining?

We foresee no oversized rock

- b. How and where will soil or subsoils be stored for reclamation?

On site in stockpile

- c. What measures will be taken to reduce compaction and prevent water and wind erosion of the topsoil stockpiles?

Stockpiles will be placed inside bermed area

- d. What will be the average depth of soil replaced on the area to be reclaimed?

12"

**IF LESS THAN 12" OF TOPSOIL IS AVAILABLE,  
A SUBSTITUTE MATERIAL MAY BE REQUIRED.**



e. Will additional material be utilized as a soil substitute to complete the revegetation?  
If yes, please specify type(s), amount(s), and source.

Yes / No

f. Will any waste products, such as tailings, crusher rejects, etc., be generated during mining?  
If yes, what will be done with them?

Yes / No

g. Describe seedbed preparation methods prior to planting.

Machine graded & prepared for seed drill

h. List species to be seeded and/or planted by type and amount.

Intermediate wheat and crested wheat. Drill on at 6-6 lbs/acre

i. Describe planting method and the time of year for the planned planting.

Drill, spring or fall

j. List types and amounts of fertilizer, mulch, and lime to be used to supplement the seeding.

None

Vegetative survival equal to the density of original ground cover will normally be considered acceptable. This may take three or more years to complete.

3. How will the processing and stockpile sites be reclaimed? If they are to be revegetated, explain the procedures which will be employed to decompact the area prior to topsoiling and seeding.

4. If applicable, what provisions have been made for stream channel and bank stabilization and rehabilitation?

**A DIVISION OF STATE LANDS' PERMIT IS REQUIRED  
FOR RELOCATION OF ALL PERENNIAL  
AND SOME INTERMITTANT WATER COURSES.**

5. What provisions will be made to control surface water runoff and erosion through the permit area upon completion of mining?

6. POND DECOMMISSIONING

- a. Will dewatering be required to complete reclamation? Yes  No
- b. Will backfilling a water filled excavation pit or pond be necessary during reclamation? Yes  No
- c. How will settling ponds be stabilized and revegetated?

- 7. Will off-site materials be imported to complete the backfilling of ponds or other excavations? Yes  No

If yes, how will quality of imported backfill be monitored to protect groundwater quality? Monitoring or testing may be required to ensure groundwater protection.

J. OTHER PERMITS IF APPLICABLE

	<u>No. &amp; Type</u>	<u>Date Issued</u>
Division of State Lands	_____	_____
Dept. of Environmental Quality Air discharge	AQCDP97-0581	02/27/97
Land Use Permit Conditional Use	#98-1-15-1	1-16-98
Water Rights	_____	_____
Other (Identify)	_____	_____

K. POST-MINING WATER IMPOUNDMENTS

- 1. Number of impoundments \_\_\_\_\_
- 2. Use of Impoundment \_\_\_\_\_

- 3. Total surface area in acres 10 total but 3 acres in mine process
- 4. Average depth 25'

5. What will be the steepest and flatest in-water slopes left after mining? \_\_\_\_\_  
(Generally 3:1 in-water slopes are the steepest allowable.)

6. Will any shallow ponds, shorelines, or other areas conducive to wetland plant development be left after mining? Yes/No No

7. What will be the water source for the impoundment \_\_\_\_\_

8. What will be done for wildlife and fish enhancement?  
(Islands, peninsulas, irregular shorelines, fish structures)  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9. If wetlands are to be constructed, explain the methods and final configuration.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

L. LANDOWNER CONSENT

As surface or mineral rights owner, I concur with the proposed subsequent use for any mining operation and with the operating and reclamation plan as submitted. I also agree to provide access to the State Department of Geology and Mineral Industries or their contractor for reclamation of the mine site if it is declared abandoned by the Department of Geology and Mineral Industries.

APPROPRIATE SIGNATURES ARE NEEDED FOR EACH LAND PARCEL.

I CONCUR (Surface Rights)

Name \_\_\_\_\_ Signature Joseph E. Stirm  
Title \_\_\_\_\_ Date 2-13-98

I CONCUR (Mineral Rights):

Name \_\_\_\_\_ Signature Joseph E. Stirm  
Title \_\_\_\_\_ Date 2-13-98

M. APPLICANT'S ACCEPTANCE:

Name Riley Hill General Contractor Inc Signature [Signature]  
Title President Date 2/13/98

APPLICANT EXHIBIT 9  
Impact Area

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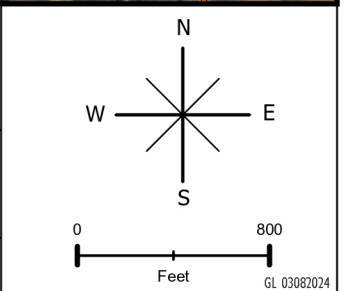






<b>Legend</b>	
	1500 ft Radius
	Sections
	Township and Range
	Gerulf Gravel Pit

<h1>1500 ft Radius Map</h1>	
GERULF, STEVEN & BARBARA Gravel Pit	17S47ED001, 500 Reference# 6908
<i>Map is prepared for assessment purposes only</i>	



APPLICANT EXHIBIT 10  
Earth Berm Study

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**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

<b>Name(s)</b> <b>Ryan D. Yoon</b>	<b>Project Number</b> <b>J2136</b>
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**Project Title**  
**Noise Barrier Efficiency: Concrete Wall vs. Earth Berm**

**Abstract**

**Objectives/Goals**  
The purpose of this experiment is to research and decide which material would work best as a noise barrier to prevent noise pollution. The materials that will be tested include earth mounds, concrete walls and without any noise barriers.

**Methods/Materials**  
The materials include: three Extech 407730 Decibel Meter, Decibel Calibrator ND9B, a 30 meter tape measure, and a stop watch. To test the noise barrier, arrive along a highway with the noise barrier being tested; concrete wall and earth berm. Calibrate decibel meters and set up the three decibel meter at their designated locations, in front of the noise barrier, 1m behind the noise barrier, and 5m behind the noise barrier. Record the noise level in decibels on a data sheet every 30 seconds for 10 minutes for each decibel meter simultaneously. Repeat steps 1 to 7 for each noise barrier.

**Results**  
The earth berm noise barrier proved to be the most effective by reducing an averaged total of 19.31815 decibels and the concrete noise barrier reduced an averaged total of 17.10903 decibels. The highway alone without any noise barrier reduced an average total of 9.18185 decibels.

**Conclusions/Discussion**  
The reason why the design of an earth berm worked better than a concrete wall is mostly because of the angle that it is at. If an earth berm is steeper than approximately 22 degrees, it will work efficiently. Wall. Concrete walls are based on their height. For every meter added to the height of the noise barrier, 1.5 decibels will be reduced. Because it's easier to make an earth berm slightly steeper than it is to add a meter of concrete, earth berms are in general much more efficient. Another reason is because of the material. The earth berm is made of loosely packed soil so therefore, when sound waves make contact, it is not able to vibrate because there is so much air in between. Because the concrete is a much more rigid material with very little air, the sounds waves can easily vibrate and transmit through to the other side.

**Summary Statement**  
By testing the decibel level of several locations by highways with different noise barriers and observing the results, we can see which noise barrier is the most effective.

**Help Received**  
Mother helped by providing transportation to different testing locations



APPLICANT EXHIBIT 11  
Decibel Level Chart

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## *Decibel Level Comparison Chart*

<b>Environmental Noise</b>	<i>dB</i> A
Jet engine at 100'	140
<b>Pain Begins</b>	<i>125</i>
Pneumatic chipper at ear	120
Chain saw at 3'	110
Power mower	107
Subway train at 200'	95
Walkman on 5/10	94
<i>Level at which sustained exposure may result in hearing loss</i>	<i>80-90</i>
City Traffic	85
Telephone dial tone	80
Chamber music, in a small auditorium	75-85
Vacuum cleaner	75
Normal conversation	60-70
Business Office	60-65
Household refrigerator	55
Suburban area at night	40
Whisper	25
Quiet natural area with no wind	20
Threshold of hearing	0

Note: dBA = Decibels, A weighted

APPLICANT EXHIBIT 12  
Water Rights Map

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500

501

Stanton Blvd

