



Application for a State Waste Discharge Permit to Discharge Industrial Wastewater to Ground Water by Land Treatment or Application

This application is for a state waste discharge permit as required by Chapter 90.48 RCW and Chapter 173-216 WAC. Permit applications provide Ecology with information on pollutants in the waste stream, materials that may enter the waste stream, the flow characteristics of the discharge, and the site characteristics at the point of discharge.

Ecology may request additional information to clarify the conditions of this discharge. The applicant should reference information previously submitted to Ecology that applies to this application in the appropriate section.

SECTION A. GENERAL INFORMATION

1. Applicant name: Pristine Valley Farms Pickle, LLC
2. Facility name: same as above
(if different from applicant)
3. Applicant mail address: P.O. Box 207
Street
La Conner, WA 98257
City/State Zip
4. Facility location address: 13381 Dodge Valley Road
(if different from above) Street
Mount Vernon, WA 98273
City/State Zip
5. UBI No. 603-334-622
Sometimes called a registration, tax, "C," or resale number, the Unified Business Identifier (UBI) number is a nine-digit number used to identify persons engaging in business activities. The number is assigned when a person completes a Master Business Application to register with or obtain a license from state agencies. The Departments of Revenue, Licensing, Employment Security, Labor and Industries, and the Corporations Division of the Secretary of State are among the state agencies participating in the UBI program.
6. Latitude/longitude of the processing facility as decimal degrees (NAD83/WGS84):
48.375658 / -122.456006

FORECOLOGY USE ONLY

Check One

New/Renewal ☐

Modification ☐

Date application received

Application/Permit no.

Date application accepted

Date fee paid

7. Person to contact who is familiar with the information contained in this application:

Jocelyn Staffanson

Name

Administrative Assistant

Title

360-770-2818

Telephone number

none at this time

Fax number

8. Check One:

☐

Permit renewal (including renewal of temporary permits authorized by RCW 90.48.200)

Does this application request a greater amount of wastewater discharge, a greater amount of pollutant discharge, or a discharge of different pollutants than specified in the last permit application for this facility? ☐ YES ☐ NO

For permit renewals, the current permit is an attachment, by reference, to this application.

☐

Permit modification

☐

**Existing
unpermitted discharge**

☒

Proposed discharge

Anticipated date of discharge: 8/15/14

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and/or imprisonment for knowing violations.

Signature*

Date

President

Title

Alfonso C Cisneros

Printed name

*Applications must be signed as follows: Corporations, by a principal executive officer of at least the level of vice-president; partnership, by a general partner; sole proprietorship, by the proprietor. If these titles do not apply to your organization, the person who makes budget decisions for this facility must sign the application.

The application signatory may delegate signature authority for submittals required by the permit, such as monthly reports, to a suitable employee. You can delegate this authority to a qualified individual or to a position, which you expect to fill with a qualified individual. If you wish to delegate signature authority, please complete the following:

Signature of delegated employee

Date

Title or function at the facility

Printed name

SECTION B. PRODUCT INFORMATION

1. Briefly describe all manufacturing processes and products, and/or commercial activities at this facility. Provide the applicable Standard Industrial Category (SIC) and the North American Industry Classification System (NAICS) Code(s) for each activity (see *North American Industrial Classification System*, 2007 ed.). You can find the 1997 NAICS codes and the corresponding 1987 Standard Industry Category (SIC) codes at (<http://www.census.gov/epcd/naics/frames3.htm>).

Description: Cucumber Pickling Process: receive fresh cucumbers from local farm fields, wash and sort/grade. After grading, cucumbers go either to tank yard fermentation tanks or to production facility to be processed into refrigerated pickles or shipped in bulk containers either fresh or fermented. Fermented cucumbers from tank yard are also processed in production facility into pickle & relish products. NAICS; 311421 Fruit & Vegetable Canning. SIC; 2035 Pickled Fruits & Vegetables, Vegetable Sauces and Seasonings, and Salad Dressings.

Sauerkraut Process: Receive cabbage from local farm fields, wash & shred. Shredded cabbage transported to tank yard fermentation tanks. Finished sauerkraut is packaged in production facility prior to shipping or shipped in bulk containers. NAICS; 311421 Fruit & Vegetable Canning. SIC; 2035 Pickled Fruits & Vegetables, Vegetable Sauces and Seasonings, and Salad Dressings.

ADDITIONAL ATTACHED PAGE FOR SECTION B1: Pepper Pickling Process

2. List raw materials and products:

Type	RAW MATERIALS	Quantity
<i>Potatoes (Example)</i>		<i>20 million tons per year</i>
Cucumbers		Estimated 7,000 tons per year
Cabbage		Estimated 2000 tons per year
Peppers		Estimated 1000 tons per year
Type	PRODUCTS	Quantity
<i>French fries (Example)</i>		<i>10 million pounds per year</i>
Refrigerated Pickles		Estimated 10 million pounds per year
Fermented Pickles & Relish		Estimated 4 million pounds per year
Brined Peppers		Estimated 2 million pounds per year
Sauerkraut		Estimated 4 million pounds per year

SECTION C. PLANT OPERATIONAL CHARACTERISTICS

1. For each process listed in B.1 that generates wastewater, list the process, assign the waste stream a name and ID #, and describe whether it is a batch or continuous flow.

Process	Waste Stream Name	Waste Stream ID#	Batch (B) or Continuous (C) Process
<i>Receiving raw potatoes (Example)</i>	<i>Mud Water</i>	<i>1</i>	<i>C</i>
Cucumber Pickling Process	Grading Line Wash Tank	1	Continuous
Sauerkraut Process	Cabbage Wash Line	2	Continuous
Pepper Pickling Process	Hopper Wash Tank	3	Batch
Anticipated Processing Building	Processing Building	4	Continuous

2. On a separate sheet, produce a schematic drawing showing production processes and water flow through the facility and wastewater treatment devices (*label as attachment C2*). The drawing should indicate the source of intake water and the operations contributing wastewater to the effluent and should label the treatment units. Construct the water balance by showing average flows between intakes, operations, treatment units, and points of discharge to land. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a description of the nature and amount of any sources of water and any collection or treatment measures.

3. What is the highest daily discharge flow from the processing facility:
(Specify the time period for the value given)

Estimated Aug 2015 through Oct 2015 - 16,000 gallons per day 2/9 hr.shifts
(Some days may have 2 shifts if fruit comes fast during harvest)

What is the highest daily discharge flow to the sprayfields/infiltration basin:
(Specify the time period for the value given)

inches/acre/month OR

Estimated Aug 2015 through Oct 2015 - 125,000 (24 hours) (INCLUDES STORMWATER FROM 1 INCH OF RAIN IN 24 HOURS) gallons per day

What is the highest average monthly discharge flow (daily flows averaged over a month) from the processing facility:
(Specify the time period for the value given)

Estimated Aug 2015 through Oct 2015 - 8000 (Some days do not have fresh fruit to run during harvest) gallons/day?

What is the highest average monthly discharge flow to the sprayfields:
(Specify the time period for the value given)

Estimated Aug 2015 through Oct 2015- 3.4 (INCLUDES STORMWATER) inches/acre/month OR

Estimated 15,000 (INCLUDES

STORMWATER) gallons per day

4. Describe any planned wastewater treatment or sprayfield/infiltration improvements and the schedule for the improvements or changes. *(Use additional sheets, if necessary and label as attachment C4.)*

None at this time.

5. If production processes are subject to seasonal variations, provide the following information. List discharge for each wastestream in gallons or million gallons per month. The combined value for each month should equal the estimated total monthly flow. Please indicate the proper unit by checking one of the following boxes:

☐ gallons per day ☒ gallons per month ☐ million gallons per month

Waste Stream ID#	MONTHS											
	J	F	M	A	M	J	J	A	S	O	N	D
#1 (Example)	1000	1000	1000	1000	6000	2000	2000	2000	1000	1000	5000	4000
Cucumber Pickling Process (70%)	105000	105000	105000	105000	105000	105000	136500	168000	168000	168000	105000	105000
Sauerkraut Process (20%)	30000	30000	30000	30000	30000	30000	39000	48000	48000	48000	30000	30000
Pepper Pickling Process (10%)	15000	15000	15000	15000	15000	15000	19500	24000	24000	24000	15000	15000
Anticipated Processing Building - Included in Above Numbers												
Estimated total gallons	150000	150000	150000	150000	150000	150000	195000	240000	240000	240000	150000	150000

6. If this is a discharge from the processing facility to a storage or evaporative lagoon, what is the size of the lagoon (give square footage for the bottom of the lagoon and the total volume of the lagoon at full operating depth). 10,000 square feet; 10 million gallons (Example)
1 million gallons

7. Check the applicable box. Is this a discharge to a sprayfield ☒ or an infiltration bed ☐? Provide the average gallons per acre per day proposed for each month in the following table.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept.	Oct	Nov	Dec
Estimated gallons per acre per day	January 2015: 1153.8	February 2015: 1153.8	March 2015: 1153.8	April 2015: 1153.8	May 2015: 1153.8	June 2015: 1153.8	July 2015: 1500.0	August 2014: 1846.2	Sept. 2014: 1846.2	October 2014: 1846.2	Nov. 2014: 1153.8	Dec. 2014: 1153.8

8. How many hours a day does this facility typically operate? Estimated 8-10
 How many days a week does this facility typically operate? Estimated 5-6
 How many weeks per year does this facility typically operate? Estimated 52
9. List all incidental materials such as oil, paint, grease, solvents, and cleaners that are used or stored on site (list only those with quantities greater than 10 gallons for liquids and 50 pound quantities for solids). For solvents and solvent-based cleaners, include a copy of the material safety data sheet for each material and estimate the quantity used. *Use additional sheets, if necessary and label as attachment C.7.)*

Materials/Quantity Stored: The following products may be used on the site, however there is no planned storage of quantities greater than 10 gallons:

1) NAPA- Antifreeze/Coolant 2) Cenex- QWIKLIFT HTB- 3) SUPERLUBE TMS- Heavy Duty Diesel Engine Oil 4) Wesmar- SAF-GARD Sanitizer (12.5% Sodium Hypochlorite) 5) Wesmar - FRM 63+ (foaming alkaline cleaner containing chlorine)

- | | | Yes | No |
|-----|---|--------------------------|-------------------------------------|
| 10. | Some types of facilities are required to have spill or waste control plans.
Does this facility have: | | |
| a. | A spill prevention, control, and countermeasure plan (40 CFR 112)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| b. | An Oil Spill Contingency Plan (chapter 173-182 WAC)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| c. | An emergency response plan (per WAC 173-303-350)? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| d. | A runoff, spillage, or leak control plan (per WAC 173-216-110(f))? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| e. | Any spill or pollution prevention plan required by local, state or federal authorities? If yes specify: _____ | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| f. | A solid waste control plan? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

SECTION D. WATER CONSUMPTION AND WATER LOSS

1. Potable water source(s):

☒ ☐ Public system (Specify name) Public Utility District #1 of Skagit County (Judy Reservoir 79500E)

☐ ☐ Private well ☐ Surface water (Specify name of water body) _____

a. Water right permit number: _____

b. Legal description of water source:

_____ 1/4S, _____ 1/4S, _____, Section, _____ TWN, _____ R

2. Potable water use

a. Indicate total water use: Gallons per day (average) Estimated: 16,419.87

Gallons per day (maximum) Estimated: 29,870.97 (August)

b. Is water metered? ☒ YES ☐ NO

3. Supplemental Irrigation water source(s):

☐ ☐ Public system or Irrigation District (Specify name) _____

☐ ☐ Private well ☐ Surface water (Specify name of water body) _____

a. Water right permit number: _____

b. Legal description of water source:

_____ 1/4S, _____ 1/4S, _____, Section, _____ TWN, _____ R

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SECTION E. WASTEWATER INFORMATION

1. How are the water intake and effluent flows measured?

Intake: Public Utility District NO. 1 of Skagit County: Water Meter Number to be Assigned

Effluent Estimated

2. Describe the collection method for the samples analyzed below. (*i.e.*, grab, 24-hour composite). Applicants must collect grab samples (not composites) for analysis of pH, temperature, cyanide, total phenols, residual chlorine, oil and grease, fecal coliform (including *E. coli*), and Enterococci (previously known as fecal streptococcus at § 122.26 (d)(2)(iii)(A)(3)), or volatile organics.

Not in operation yet. No wastewater to sample.

3. Has the effluent been analyzed for any other parameters than those identified in question E.4.? ☐ YES ☒ NO
If yes, attach results and label as attachment E.4. This data must clearly show the date, method and location of sampling. (*Note: Ecology may require additional testing.*)

4. Provide measurements or range of measurements for treated wastewater prior to discharge to the POTW for the parameters with an "X" in the left column. If you obtain the application from the internet, contact Ecology's regional office to see if testing for a subset of these parameters is permissible. All analyses (except pH) must be conducted by a laboratory registered or accredited by Ecology (WAC 173-216-125). If this is an application for permit renewal, provide data for the last year for those parameters that are routinely measured. For parameters measured only for this application, place the values under "Maximum." Report the values with units as specified in the parameter name or in the detection level.

The Permittee must use the specified analytical methods, detection limits (DLs) and quantitation levels (QLs) in the following table unless Ecology approves an alternate method or the method used produces measurable results in the sample and EPA has listed it as an EPA approved method in 40 CFR Part 136. If the Permittee uses an alternative method as allowed above, it must report the test method, DL, and QL on the discharge monitoring report or in the required report.

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19 th , 20 th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	BOD (5 day)	259 mg/L	1352 mg/L	795.3 mg/L	11	SM 5210 B	/2 mg/l
	COD					SM 5220 D	/10 mg/l
	Total suspended solids	46 mg/L	100 mg/L	63.1 mg/L	11	SM 2540 D	/5 mg/l
	Fixed Dissolved Solids					SM 2540 E	
	Total dissolved solids	2806 mg/L	5512 mg/L	4761.9 mg/L	11	SM 2540 C	
	Conductivity (micromhos/cm)					SM 2510 B	
	Ammonia-N as N	3.62 mg/L	26.9 mg/L	16.6 mg/L	11	SM 4500-NH ₃ C	/0.3 mg/L
	pH	4.2 mg/L	6.6 mg/L	5.1 mg/L	12	SM 4500-H	0.1 standard units
	Fecal coliform (organisms/100 mL)					SM 9221 E or 9222 D	
	Total coliform (organisms/100 mL)					SM 9221 B or 9222 B	
	Dissolved oxygen					SM 4500-O C/G	
	Nitrate + nitrite-N as N	0.018 mg/L	1.08 mg/L	0.244 mg/L	11	SM 4500-NO ₃ E	100 µg/L
	Total kjeldahl N as N	18.9 mg/L	47.2 mg/L	33.2 mg/L	11	SM 4500-N _{org} C/E/FG	300 µg/l
	Ortho-phosphate-P as P					SM 4500-P E/F	10 µg/l
	Total-phosphorous-P as P	3.29 mg/L	7.92 mg/L	5.48 mg/L	11	SM 4500-P E/P/F	10 µg/l
	Total Oil & grease	0	0	0	12	EPA 1664A	1.4/5 mg/l
	NWTPH - Dx					Ecology NWTPH Dx	250/250 µg/l
	NWTPH - Gx					Ecology NWTPH Gx	250/250 µg/l
	Calcium					EPA 200.7	10 µg/l
	Chloride	1405 mg/L	2918 mg/L	2424.4 mg/L	11	SM 4500-Cl C	0.15 µg/l
	Fluoride					SM 4500-F E	.025/0.1 mg/l
	Magnesium					EPA 200.7	10/50 µg/l
	Potassium					EPA 200.7	700/ µg/l

X	Parameter	Measurement Values			Number of Analyses	Analytical Method Std. Methods 19 th , 20 th edition or EPA	Detection Limit/Quantitation Level
		Minimum	Maximum	Average			
	Sodium					EPA 200.7	29/ µg/l
	Sulfate					SM 4500-SO ₄ C/D	/200 µg/l
	Alkalinity as CaCO ₃					SM 2320 B	/5 mg/L as CaCO ₃
	Arsenic(total)					EPA 200.8	0.1/0.5 µg/l
	Barium (total)					EPA 200.8	0.5/2 µg/l
	Cadmium (total)					EPA 200.8	.05/.25 µg/l
	Chromium (total)					EPA 200.8	0.2/1 µg/l
	Copper (total)	0.012 mg/L	0.036 mg/L	0.021 mg/L	11	EPA 200.8	0.4/2 µg/l
	Iron (total)					EPA 200.7	12.5/50 µg/l
	Lead (total)					EPA 200.8	0.1/.5 µg/l
	Manganese (total)					EPA 200.8	0.1/0.5 µg/l
	Mercury (total) pg/L					EPA 1631E	0.2/0.5 pg/l
	Molybdenum(total)					EPA 200.8	0.1/0.5 µg/l
	Nickel(total)					EPA 200.8	0.1/0.5 µg/l
	Selenium (total)					EPA 200.8	1/1 µg/l
	Silver (total)					EPA 200.8	.04/.2 µg/l
	Zinc (total)	0.065 mg/L	0.241 mg/L	0.134 mg/L	11	EPA 200.8	0.5/2.5 µg/l

Detection level (DL) or detection limit means the minimum concentration of an analyte (substance) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero as determined by the procedure given in 40 CFR part 136, Appendix B.

Quantitation Level (QL) also known as Minimum Level of Quantitation (ML) – The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. It is equivalent to the concentration of the lowest calibration standard, assuming that the lab has used all method-specified sample weights, volumes, and cleanup procedures. The QL is calculated by multiplying the MDL by 3.18 and rounding the result to the number nearest to $(1, 2, \text{ or } 5) \times 10^n$, where n is an integer. (64 FR 30417).

ALSO GIVEN AS:

The smallest detectable concentration of analyte greater than the Detection Limit (DL) where the accuracy (precision & bias) achieves the objectives of the intended purpose. (Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs Submitted to the US Environmental Protection Agency December 2007).

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5. Does this facility use any of the following chemicals as raw materials in production, produce them as part of the manufacturing process, or are they present in the wastewater? (*The number following the chemical name is the Chemical Abstract Service (CAS) reference number to aid in identifying the compound.*) ☐ YES ☒ NO

If yes, specify how the chemical is used and the quantity used or produced (*Use additional sheets, if necessary and label as attachment E5.*):

Acrylamide/79-06-1
Acrylonitrile/107-13-1
Aldrin/309-00-2
Aniline/62-53-3
Aramite/140-57-8
Arsenic/7440-38-2
Azobenzene/103-33-3
Benzene/71-43-2
Benzidine/92-87-5
Benzo(a)pyrene/50-32-8
Benzotrichloride/98-07-7
Benzyl chloride/100-44-7
Bis(chloroethyl)ether/111-44-4
Bis(chloromethyl)ether/542-88-1
Bis(2-ethylhexyl) phthalate/ 117-81-7
Bromodichloromethane/75-27-4
Bromoform/75-25-2
Carbazole/86-74-8
Carbon tetrachloride/56-23-5
Chlordane/57-74-9
Chlorodibromomethane/124-48-1
Chloroform/67-66-3
Chlorthalonil/1897-45-6
2,4-D/94-75-7
DDT/50-29-3
Diallate/2303-16-4
1,2 Dibromoethane/106-93-4
1,4 Dichlorobenzene/106-46-7
3,3' Dichlorobenzidine/91-94-1
1,1 Dichloroethane/75-34-3
1,2 Dichloroethane/107-06-2

Nitrofurazone/59-87-0
N-nitrosodiethanolamine/ 1116-54-7
N-nitrosodiethylamine/55-18-5
N-nitrosodimethylamine/62-75-9
N-nitrosodiphenylamine/86-30-6
N-nitroso-di-n-propylamine/ 621-64-7
N-nitrosopyrrolidine/930-55-2
N-nitroso-di-n-butylamine/ 924-16-3
N-nitroso-n-methylethylamine/
10595-95-6
PAH/NA
PBBs/NA
PCBs/1336-36-3
1,2 Dichloropropane/78-87-5
1,3 Dichloropropene/542-75-6
Dichlorvos/62-73-7
Dieldrin/60-57-1
3,3' Dimethoxybenzidine/119-90-4
3,3 Dimethylbenzidine/119-93-7
1,2 Dimethylhydrazine/540-73-8
2,4 Dinitrotoluene/121-14-2
2,6 Dinitrotoluene/606-20-2
1,4 Dioxane/123-91-1
1,2 Diphenylhydrazine/122-66-7
Endrin/72-20-8
Epichlorohydrin/106-89-8
Ethyl acrylate/140-88-5
Ethylene dibromide/106-93-4
Ethylene thiourea/96-45-7
Folpet/133-07-3
Furmecyclohex/60568-05-0

Heptachlor/76-44-8
Heptachlor epoxide/1024-57-3
Hexachlorobenzene/118-74-1
Hexachlorocyclohexane (alpha)/
319-84-6
Hexachlorocyclohexane (tech.)/
608-73-1
Hexachlorodibenzo-p-dioxin,
mix/19408-74-3
Hydrazine/hydrazine sulfate/ 302-01-2
Lindane/58-89-9
2 Methylaniline/100-61-8
2 Methylaniline hydrochloride/
636-21-5
4,4' Methylene bis(N,N-
dimethyl)aniline/101-61-1
Methylene chloride
(dichloromethane)/75-09-2
Mirex/2385-85-5
O-phenylenediamine/106-50-3
Propylene oxide/75-56-9
2,3,7,8-Tetrachlorodibenzo-p-dioxin/
1746-01-6
Tetrachloroethylene/127-18-4
2,4 Toluenediamine/95-80-7
o-Toluidine/95-53-4
Toxaphene/8001-35-2
Trichloroethylene/79-01-6
2,4,6-Trichlorophenol/88-06-2
Trimethyl phosphate/512-56-1
Vinyl chloride/75-01-4

6. Are any other pesticides, herbicides, or fungicides used at this facility? ☒ YES ☐ NO

If yes, specify the material and quantity used.

Round Up; less than 5 gallons/year.

7. Are there other pollutants that you know of or believe to be present? ☐ YES ☐ NO

If yes, specify the pollutants and their concentration if known (attach laboratory analyses if available). Please see attached explanation labeled Attachment E7. The explanation would not fit in this field. ☒ DON'T KNOW

SECTION F. GROUND WATER INFORMATION

Provide available data measurements or range of measurements from monitoring wells or supply wells in the area of discharge. Provide the analytical method and detection limit, if known. Provide the location of each well on the map required in G.3 below. Attach well logs when available. Copy this page as necessary for each well. Provide the latitude and longitude in decimal format.

Ecology Well Tag ID # NO WELLS
(*example AAB123*)

Well ID # _____ (*example MW-1*)

Latitude: _____

Longitude: _____

Well Elevation (to the nearest 0.01 feet) _____ Check the appropriate box; the elevation measurement is relative to: the NAVD88 standard ☐ mean sea level ☐

Parameter	Units	Range of Measurements	Number of Analyses	Analytical Method	Detection Limit
BOD (5 day)	mg/L				
COD	mg/L				
Total organic carbon	mg/L				
Total dissolved solids	mg/L				
Dissolved Fixed Solids	mg/L				
pH	Standard units				
Conductivity	(micromhos/cm)				
Alkalinity	mg/L as CaCO ₃				
Total hardness	mg/L				
Fecal coliform	organisms/100mL				
Total coliform	organisms/100mL				
Dissolved oxygen	mg/L				
Ammonia-N	mg/L				
Nitrate + nitrite-N, nitrate as N	mg/L				
Total kjeldahl N as N	mg/L				
Ortho-phosphate-P as P	mg/L				
Total-phosphate-P as P	mg/L				
Total Oil and Grease	mg/L				
Total petroleum hydrocarbon	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Calcium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Chloride	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Fluoride	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Magnesium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Potassium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Sodium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Sulfate	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Barium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Cadmium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Chromium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Copper	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Iron	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Lead	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				

Parameter	Units	Range of Measurements	Number of Analyses	Analytical Method	Detection Limit
Manganese	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Mercury	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Selenium	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Silver	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Zinc	<input type="checkbox"/> mg/L <input type="checkbox"/> µg/l				
Depth to water level (to the nearest .01 feet)					

SECTION G. SITE ASSESSMENT

The local library and local city or county planning offices may be helpful in providing the information required in this section. You may consult the Department of Ecology Water Resources Program to help identify wells within one mile of your site.

1. Land Application Sites: Provide the information below for each land application site. Provide the latitude/longitude (approximate center of the site; NAD83/WGS84 reference datum.) Attach a copy of the contract(s) authorizing use of any private land(s) used for each treatment site. Add table rows as necessary.

Legal Description (section/township/range) 48.372332, -122.456703, S 8 - T 33N - R3E, 16 acres,			
Latitude	Longitude	Acreage	Owner
Legal Description (section/township/range) OWNER Emerald Partners LLC, Melanie Bruch as Trustee of the Melanie Bruch Living Trust dated July 17, 2002, Christopher Sheafe as his separate property and Keith and Nancy Storey as Trustees of the Storey Family Living Trust dated February 29, 1984, a Washington State Living Trust			
Latitude	Longitude	Acreage	Owner
Legal Description (section/township/range)			
Latitude	Longitude	Acreage	Owner
Legal Description (section/township/range)			
Latitude	Longitude	Acreage	Owner

2. If this is a new discharge, list all environmental control permits or approvals needed for this project; for example, SEPA review, engineering reports, hydrogeologic reports, , , or air emissions permits.

This has been a land application site for this same type of discharge for many years until September 3, 2013 and functioned very well.

3. Attach an original United States Geological Survey (USGS) 7.5 minute topographic map and aerial photograph(s) from an internet mapping site that shows the processing facility and sprayfield site(s). **USGS topographical maps are available from the Department of Natural Resources (360 902-1234), Metsker Maps (206 588-5222), some local bookstores, and internet sites.** Show the following on this map:
 - a. Location and name of internal and adjacent streets.
 - b. Surface water drainage systems within ¼ mile of the site.
 - c. All wells within 1 mile of the site.
 - d. Wastewater discharge points.
 - e. Land uses and zoning adjacent to the wastewater application site.
 - f. Groundwater gradient.
4. Describe the soils on the site using information from local soil survey reports. **Soils information is available from your local County Conservation District or from information contained in the sites hydrogeologic report.** *(Submit on separate sheet and label as attachment G.4.)*
5. Describe the local geology and hydrogeology within one mile of the site. Include any groundwater quality data. **The local library or local Soil Conservation Service may have this information.** *(Submit on separate sheet and label as attachment G.5.)*
6. List the names and addresses of contractors or consultants who provided information and cite sources of information by title and author.

WSDOE Website -

<https://fortress.wa.gov/ecy/waterresources/map/WCLSWebMap/WellConstructionMapSearch.aspx>

Latlong.net

USDA- Natural Resources Conservation Service/Web Soil Survey/National Cooperative Soil Survey

The USGS Store

Local geology & hydrogeology copied from Cascade Ag Services; 2003 State Waste Discharge Permit Application Packet - Permit Number ST7439

SECTION H. STORMWATER

1. Do you have coverage under the Washington State Industrial Stormwater NPDES General permit? ☐ YES ☒ NO
If yes, please list the permit number here. _____

If no, have you applied for coverage under the Washington State Industrial Stormwater NPDES general permit? ☒ YES ☐ NO

Note: If you answered "no" to both questions above, complete the following questions 2 through 8.

2. Describe the size of the stormwater collection area.
- a. Unpaved area 131,400 sq.ft.
 - b. Paved area 34,700 sq.ft.
 - c. Other collection areas (roofs) 27,840 sq.ft.
3. Does your facility's stormwater discharge to: *(Check all that apply)*
- ☐ Storm sewer system; name of storm sewer system *(operator)*: _____
 - ☐ Sanitary sewer
 - ☐ Directly to surface waters of Washington State *(e.g., river, lake, creek, estuary, ocean)*.
Specify waterbody name _____
 - ☐ Indirectly to surface waters of Washington State *(i.e., flows over adjacent properties first)*.
 - ☐ Directly to ground waters of Washington State via:
 - ☐ Dry well
 - ☐ Drainfield
 - ☒ Other
4. Areas with industrial activities at facility: *(check all that apply)*
- ☒ Manufacturing building
 - ☒ Material handling
 - ☒ Material storage
 - ☐ Hazardous waste treatment, storage, or disposal *(refers to RCRA, Subtitle C facilities only)*
 - ☐ Waste treatment, storage, or disposal
 - ☒ Application or disposal of wastewaters
 - ☒ Storage and maintenance of material handling equipment
 - ☒ Vehicle maintenance
 - ☐ Areas where significant materials remain

☒ ☐ Access roads and rail lines for shipping and receiving

☐ ☐ Other _____

5. Material handling/management practices

a. Types of materials handled and/or stored outdoors: *(check all that apply)*

☐ ☐ Solvents

☐ ☐ Hazardous wastes

☒ ☐ Scrap metal

☒ ☐ Acids or alkalies

☒ ☐ Petroleum or petrochemical products

☒ ☐ Paints/coatings

☐ ☐ Plating products

☐ ☐ Woodtreating products

☒ ☐ Pesticides

☐ ☐ Other *(please list)*: _____

b. Identify existing management practices employed to reduce pollutants in industrial storm water discharges: *(check all that apply)*

☒ ☐ Oil/water separator

☐ ☐ Detention facilities

☒ ☐ Containment

☐ ☐ Infiltration basins

☒ ☐ Spill prevention

☒ ☐ Operational BMPs

☐ ☐ Surface leachate collection

☒ ☐ Vegetation management

☐ ☐ Overhead coverage

☐ ☐ Other *(please list)*: _____

6. Attach a map showing stormwater drainage/collection areas, disposal areas and discharge points. This may be a hand drawn map if no other site map is available. Label this as attachment H.8.

SECTION I. OTHER INFORMATION

1. Describe liquid or solid wastes generated that are not disposed of in the waste stream(s) and describe the method of disposal. For each type of waste, provide type of waste, name, address, and phone number of hauler.

Solid Wastes- paper, plastics, glass and misc. garbage picked up 1x/week; and taken to a Waste Management facility. Organic Wastes- cucumbers & cabbage spread on farmland as recycled organic matter by PVFP.

Liquid Wastes- laboratory chemicals stored for recycling

2. Describe any storage areas used for raw materials, products, and wastes.

Garbage Receptacles - Plastic garbage cans with lids secured by bungee cords.

Summary of attachments that may be required for this application:

(Please check those attachments that are included)

- ☒ C.2. Production schematic flow diagram and water balance
- ☐ C.4. Wastewater treatment improvements
- ☐ C.7. Additional incidental materials
- ☐ E.4. Additional results of effluent testing
- ☒ G.1. Copies of land use contracts
- ☒ G.3. USGS topographical map
- ☒ G.4. Soils description
- ☒ G.5. Local geology and hydrology
- ☒ H.8. Stormwater drainage map

If you need this document in a format for the visually impaired, call the Water Quality Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Pristine Valley Farms Pickle
13381 Dodge Valley Road
Mount Vernon, WA 98273
State Waste Discharge Permit Application

Attachment: H8 Stormwater Drainage Map—Application Site—REVISED

Processing Effluent: Shown by Green →

Stormwater: Shown by Turquoise →

Ditches: Shown by Blue Line

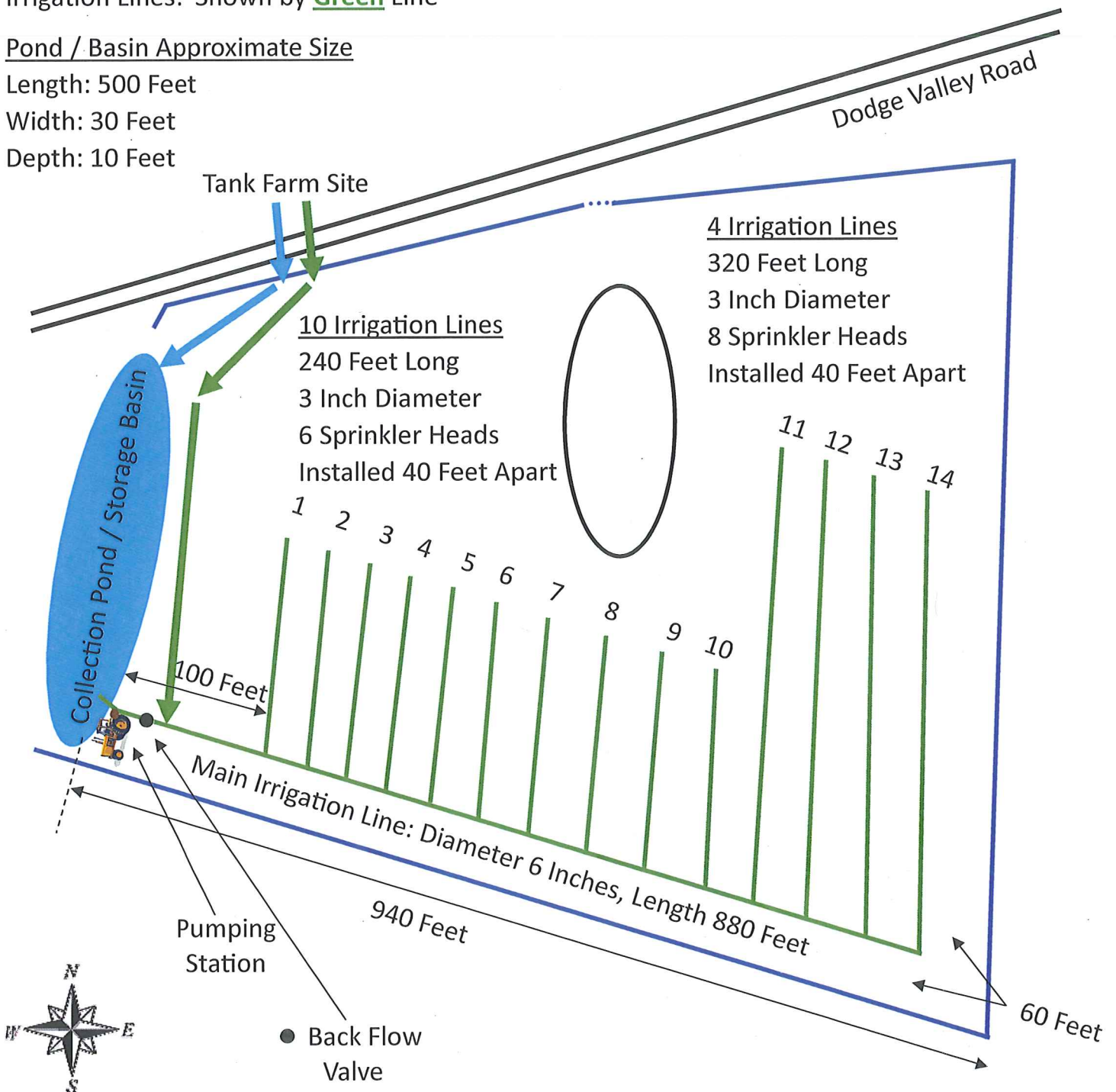
Irrigation Lines: Shown by Green Line

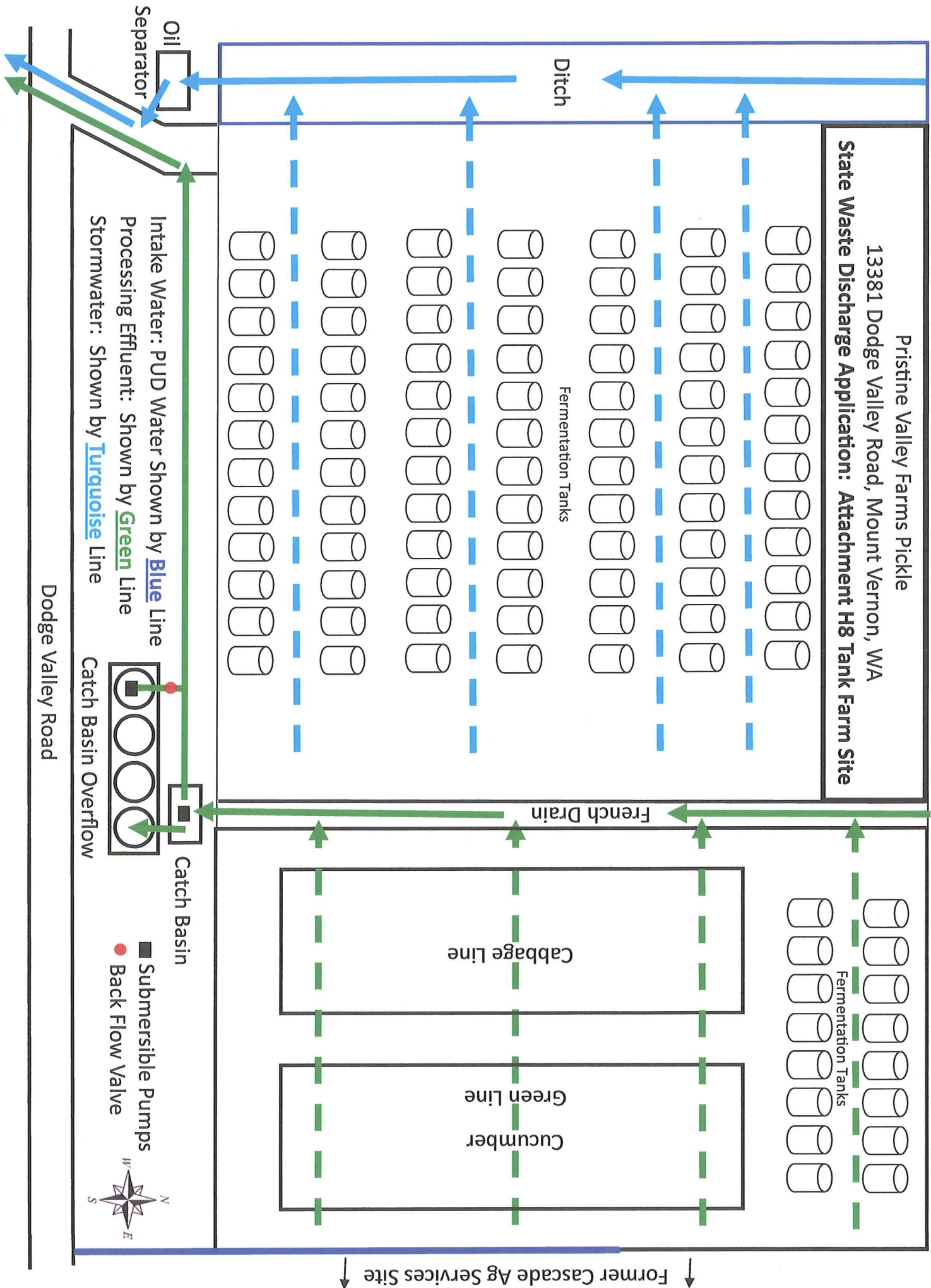
Pond / Basin Approximate Size

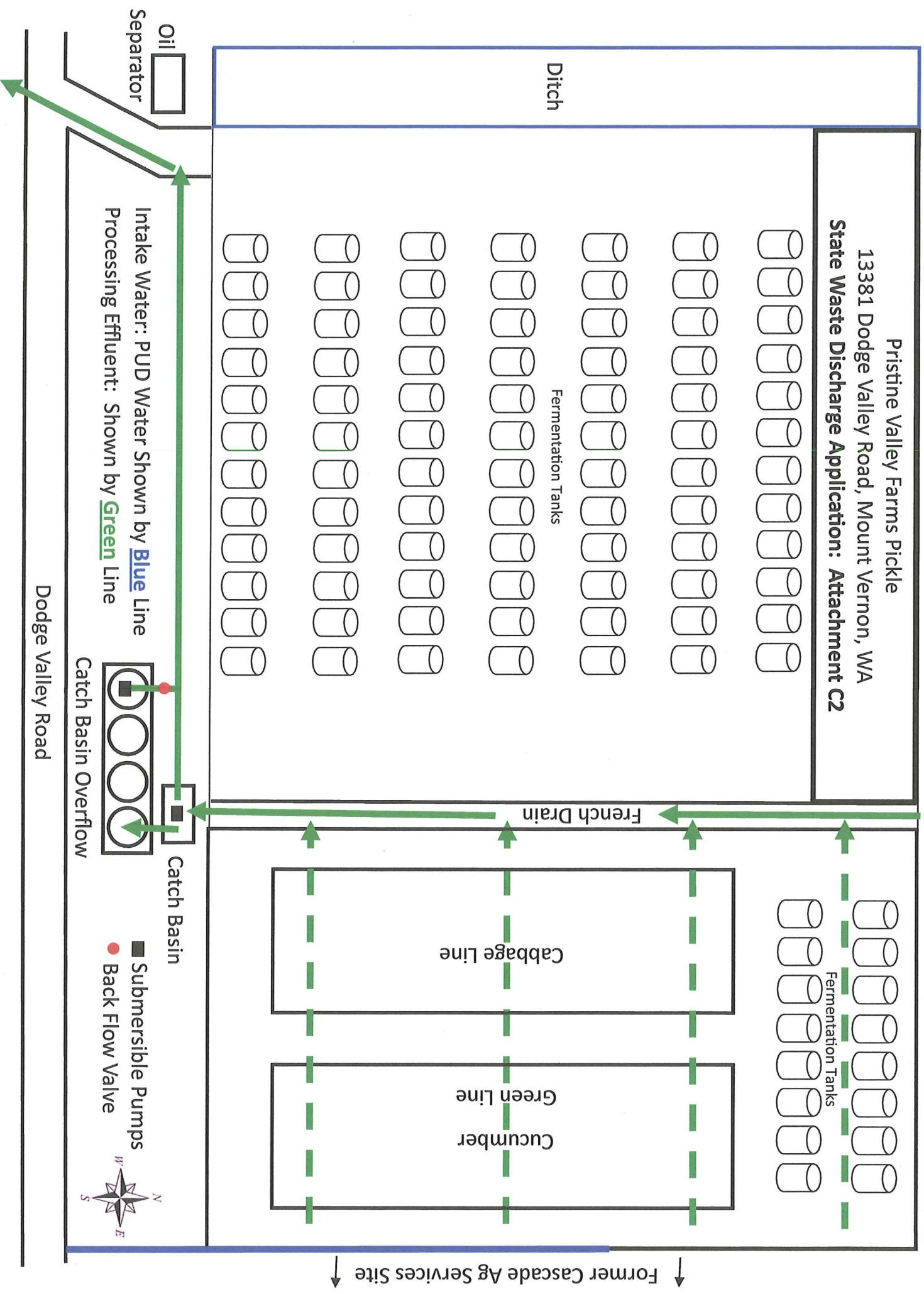
Length: 500 Feet

Width: 30 Feet

Depth: 10 Feet









United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Skagit County Area, Washington**

PVFP Land Application Site

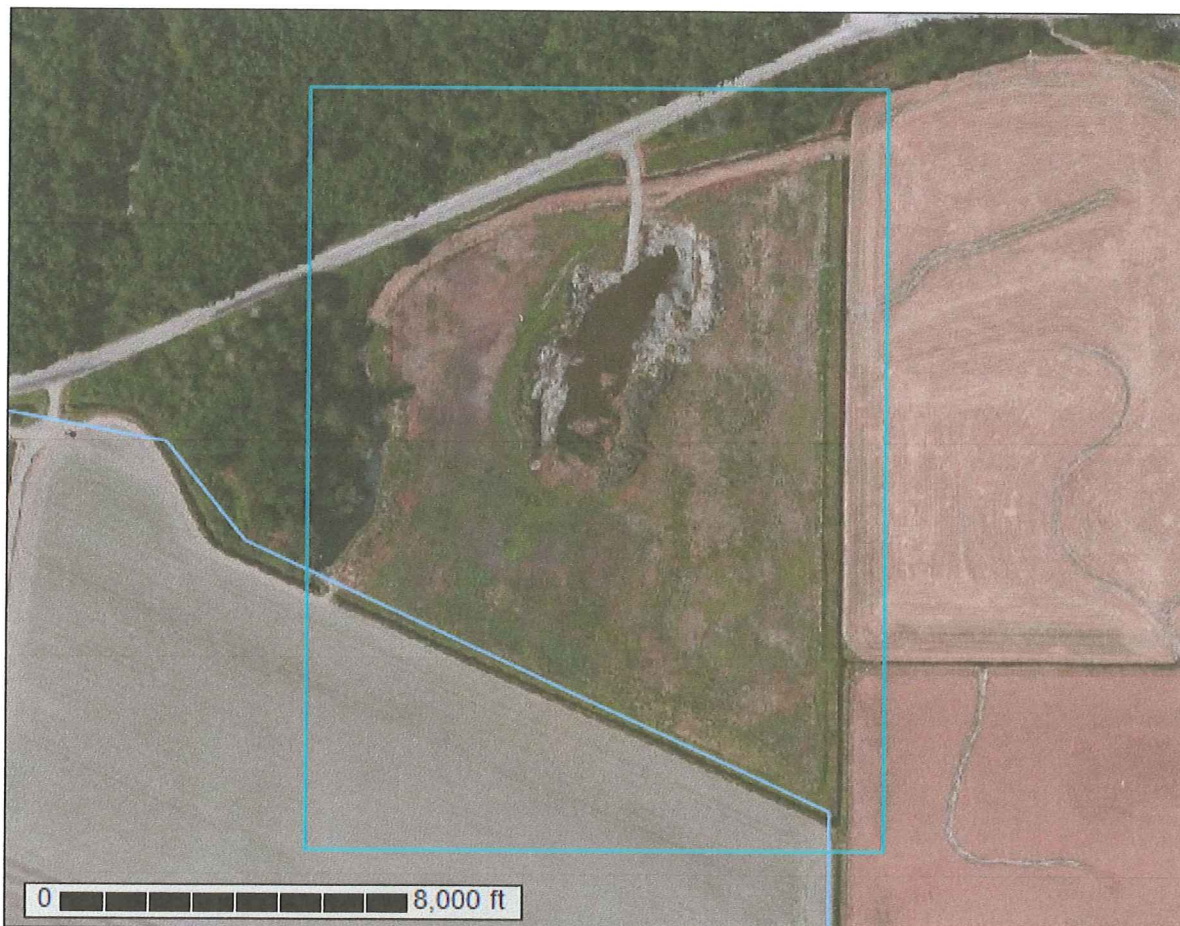
Pristine Valley Farms Pickle

13381 Dodge Valley Road

Mount Vernon, WA 98273

State Waste Discharge Permit Application

Attachment G4: Soils Description



June 19, 2014

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<http://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

Custom Soil Resource Report

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

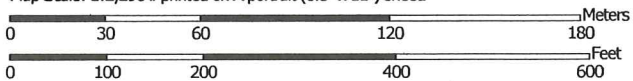
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map







































Map Scale: 1:2,290 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	 Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	 Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
Sandy Spot	
Severely Eroded Spot	
Sinkhole	
Slide or Slip	
Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: <http://websoilsurvey.nrcs.usda.gov>
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: Skagit County Area, Washington
Survey Area Data: Version 9, Dec 10, 2013

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

Date(s) aerial images were photographed: Jul 9, 2010—Aug 28, 2011

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

Skagit County Area, Washington (WA657)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
17	Bow gravelly loam, 3 to 8 percent slopes	1.0	3.7%
123	Skagit silt loam	23.8	84.5%
137	Swinomish gravelly loam, 0 to 8 percent slopes	2.8	9.9%
140	Swinomish-Fidalgo-Rock outcrop complex, 3 to 30 percent slopes	0.5	1.9%
Totals for Area of Interest		28.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic

Custom Soil Resource Report

classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Skagit County Area, Washington

17—Bow gravelly loam, 3 to 8 percent slopes

Map Unit Setting

Elevation: 50 to 400 feet

Mean annual precipitation: 20 to 40 inches

Mean annual air temperature: 48 to 50 degrees F

Frost-free period: 170 to 220 days

Map Unit Composition

Bow and similar soils: 95 percent

Minor components: 5 percent

Description of Bow

Setting

Landform: Terraces, hillslopes

Parent material: Volcanic ash, glaciolacustrine deposits, and glacial drift

Typical profile

H1 - 0 to 7 inches: neutral, gravelly ashy loam

H2 - 7 to 17 inches: neutral, very gravelly ashy loam

H3 - 17 to 31 inches: neutral, clay loam

H4 - 31 to 60 inches: neutral, silty clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 18 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 10.4 inches)

Interpretive groups

Farmland classification: Prime farmland if drained

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6w

Hydrologic Soil Group: C/D

Other vegetative classification: Unnamed (G002XN202WA)

Minor Components

Bellingham

Percent of map unit: 5 percent

Landform: Depressions

123—Skagit silt loam

Map Unit Setting

Elevation: 0 to 50 feet

Mean annual precipitation: 25 to 45 inches

Mean annual air temperature: 50 to 52 degrees F

Frost-free period: 160 to 210 days

Map Unit Composition

Skagit and similar soils: 80 percent

Minor components: 20 percent

Description of Skagit

Setting

Landform: Flood plains, deltas

Parent material: Alluvium and volcanic ash

Typical profile

H1 - 0 to 12 inches: slightly acid, silt loam

H2 - 12 to 50 inches: slightly acid, silt loam

H3 - 50 to 60 inches: slightly acid, very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Natural drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)

Depth to water table: About 6 to 24 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: High (about 12.0 inches)

Interpretive groups

Farmland classification: Prime farmland if drained

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D

Other vegetative classification: Unnamed (G002XN102WA)

Minor Components

Field

Percent of map unit: 5 percent

Mt. vernon

Percent of map unit: 5 percent

Skagit

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Flood plains

Tacoma

Percent of map unit: 5 percent

Landform: Flood plains

137—Swinomish gravelly loam, 0 to 8 percent slopes

Map Unit Setting

Elevation: 100 to 1,200 feet

Mean annual precipitation: 23 inches

Mean annual air temperature: 50 degrees F

Frost-free period: 160 to 210 days

Map Unit Composition

Swinomish and similar soils: 85 percent

Minor components: 15 percent

Description of Swinomish

Setting

Landform: Ridges

Parent material: Volcanic ash and glacial drift

Typical profile

H1 - 0 to 3 inches: neutral, gravelly ashy loam

H2 - 3 to 20 inches: neutral, gravelly ashy loam

H3 - 20 to 31 inches: neutral, very gravelly fine sandy loam

H2 - 31 to 60 inches: moderately acid, very gravelly sandy loam

Properties and qualities

Slope: 0 to 8 percent

Depth to restrictive feature: 25 to 40 inches to densic material

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 20 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Farmland classification: All areas are prime farmland

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: C

Other vegetative classification: Unnamed (G002XN202WA)

Minor Components

Bow

Percent of map unit: 5 percent

Custom Soil Resource Report

Landform: Terraces

Laconner

Percent of map unit: 5 percent

Coveland

Percent of map unit: 5 percent

Landform: Depressions

140—Swinomish-Fidalgo-Rock outcrop complex, 3 to 30 percent slopes

Map Unit Setting

Elevation: 100 to 1,000 feet

Mean annual precipitation: 18 to 30 inches

Mean annual air temperature: 48 to 52 degrees F

Frost-free period: 160 to 210 days

Map Unit Composition

Swinomish and similar soils: 40 percent

Fidalgo and similar soils: 30 percent

Rock outcrop: 15 percent

Minor components: 15 percent

Description of Swinomish

Setting

Landform: Ridges, mountain slopes

Landform position (two-dimensional): Footslope

Parent material: Volcanic ash and glacial drift

Typical profile

H1 - 0 to 3 inches: neutral, gravelly ashy loam

H2 - 3 to 20 inches: neutral, gravelly ashy loam

H3 - 20 to 31 inches: neutral, very gravelly fine sandy loam

H2 - 31 to 60 inches: moderately acid, very gravelly sandy loam

Properties and qualities

Slope: 3 to 30 percent

Depth to restrictive feature: 25 to 40 inches to densic material

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: About 20 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Custom Soil Resource Report

Other vegetative classification: Unnamed (G002XN302WA)

Description of Fidalgo

Setting

Landform: Ridges, mountain slopes

Landform position (two-dimensional): Foothslope

Parent material: Volcanic ash, and colluvium from glacial drift, argillite, and argillitic residuum

Typical profile

H1 - 0 to 3 inches: neutral, gravelly ashy loam

H2 - 3 to 25 inches: neutral, very gravelly ashy fine sandy loam

H3 - 25 to 29 inches: neutral, extremely gravelly loamy sand

H4 - 29 to 33 inches: , unweathered bedrock

Properties and qualities

Slope: 3 to 30 percent

Depth to restrictive feature: 20 to 40 inches to lithic bedrock

Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)

Depth to water table: About 19 to 36 inches

Frequency of flooding: None

Frequency of ponding: None

Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: C

Other vegetative classification: Unnamed (G002XN302WA)

Description of Rock Outcrop

Properties and qualities

Slope: 3 to 30 percent

Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Farmland classification: Not prime farmland

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8s

Minor Components

Coveland

Percent of map unit: 5 percent

Landform: Depressions

Bow

Percent of map unit: 5 percent

Landform: Terraces

Laconner

Percent of map unit: 5 percent

Custom Soil Resource Report

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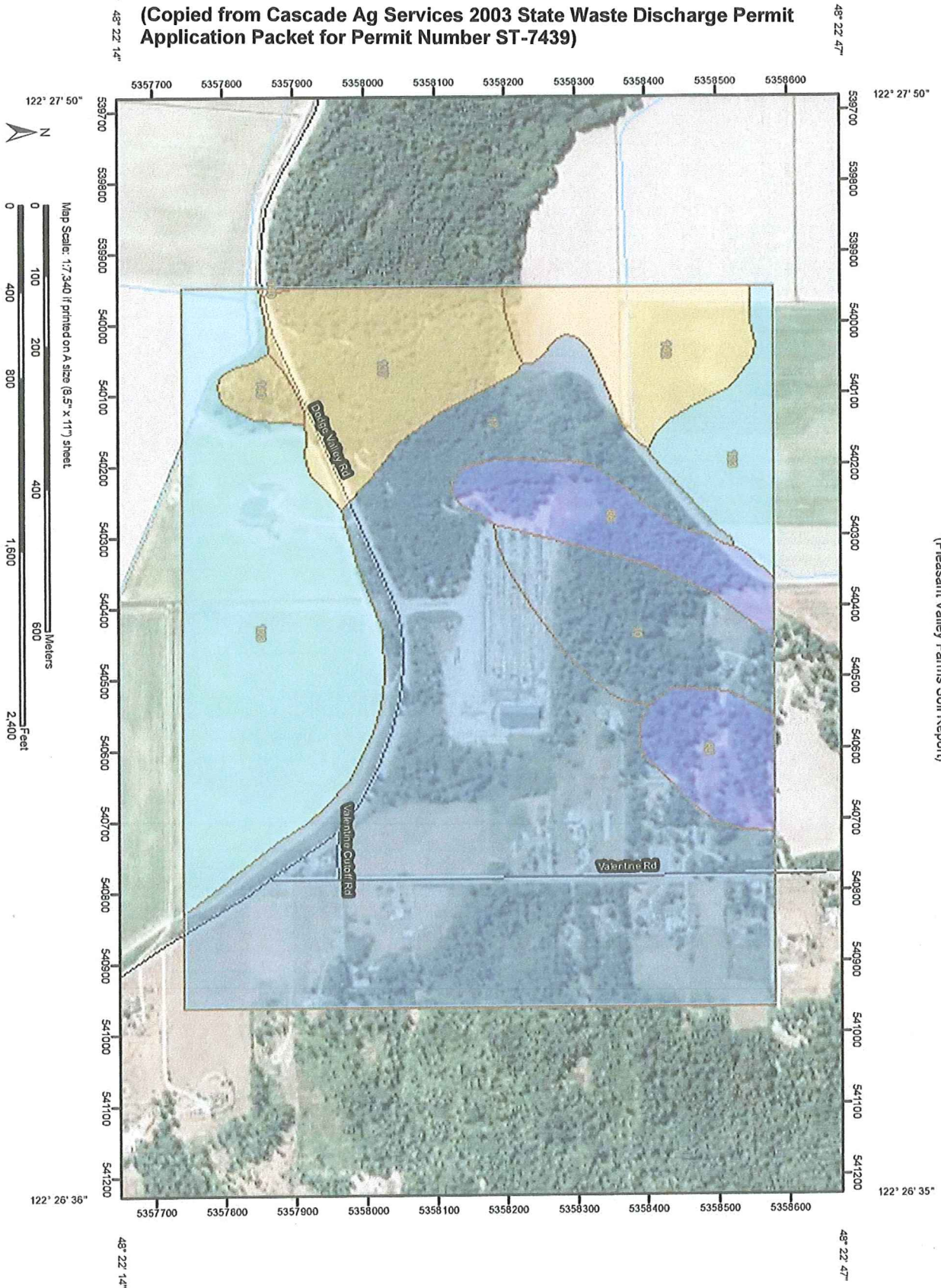
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Pristine Valley Farms Pickle
13381 Dodge Valley Road
Mount Vernon, WA 98273
State Waste Discharge Permit Application

Attachment G5: Local Geology & Hydrology

(Copied from Cascade Ag Services 2003 State Waste Discharge Permit Application Packet for Permit Number ST-7439)

Hydrologic Soil Group—Skagit County Area, Washington
(Pleasant Valley Farms Soil Report)



MAP LEGEND

- Area of Interest (AOI)
Area of Interest (AOI)
- Soils
Soil Map Units
- Soil Ratings
A
A/D
B
B/D
C
C/D
D
Not rated or not available
- Political Features
Cities
- Water Features
Streams and Canals
- Transportation
++
Rails
Interstate Highways
US Routes
Major Roads
Local Roads

MAP INFORMATION

Map Scale: 1:7,340 if printed on A size (8.5" x 11") sheet.
The soil surveys that comprise your AOI were mapped at 1:24,000.

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 accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: UTM Zone 10N NAD83

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

Soil Survey Area: Skagit County Area, Washington
Survey Area Data: Version 8, Jun 29, 2012

Date(s) aerial images were photographed: 7/21/2006

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.

Hydrologic Soil Group

Hydrologic Soil Group— Summary by Map Unit — Skagit County Area, Washington (WA657)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
10	Bellingham silt loam	C/D	13.9	6.6%
17	Bow gravelly loam, 3 to 8 percent slopes	C/D	98.5	46.8%
85	Laconner very gravelly loamy sand, 0 to 8 percent slopes	B	7.2	3.4%
86	Laconner very gravelly loamy sand, 8 to 15 percent slopes	B	10.4	5.0%
123	Skagit silt loam	B/D	49.0	23.3%
137	Swinomish gravelly loam, 0 to 8 percent slopes	C	17.2	8.2%
140	Swinomish-Fidalgo-Rock outcrop complex, 3 to 30 percent slopes	C	2.1	1.0%
142	Tacoma silt loam, drained	C	12.1	5.8%
Totals for Area of Interest			210.4	100.0%



Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.


Rating Options

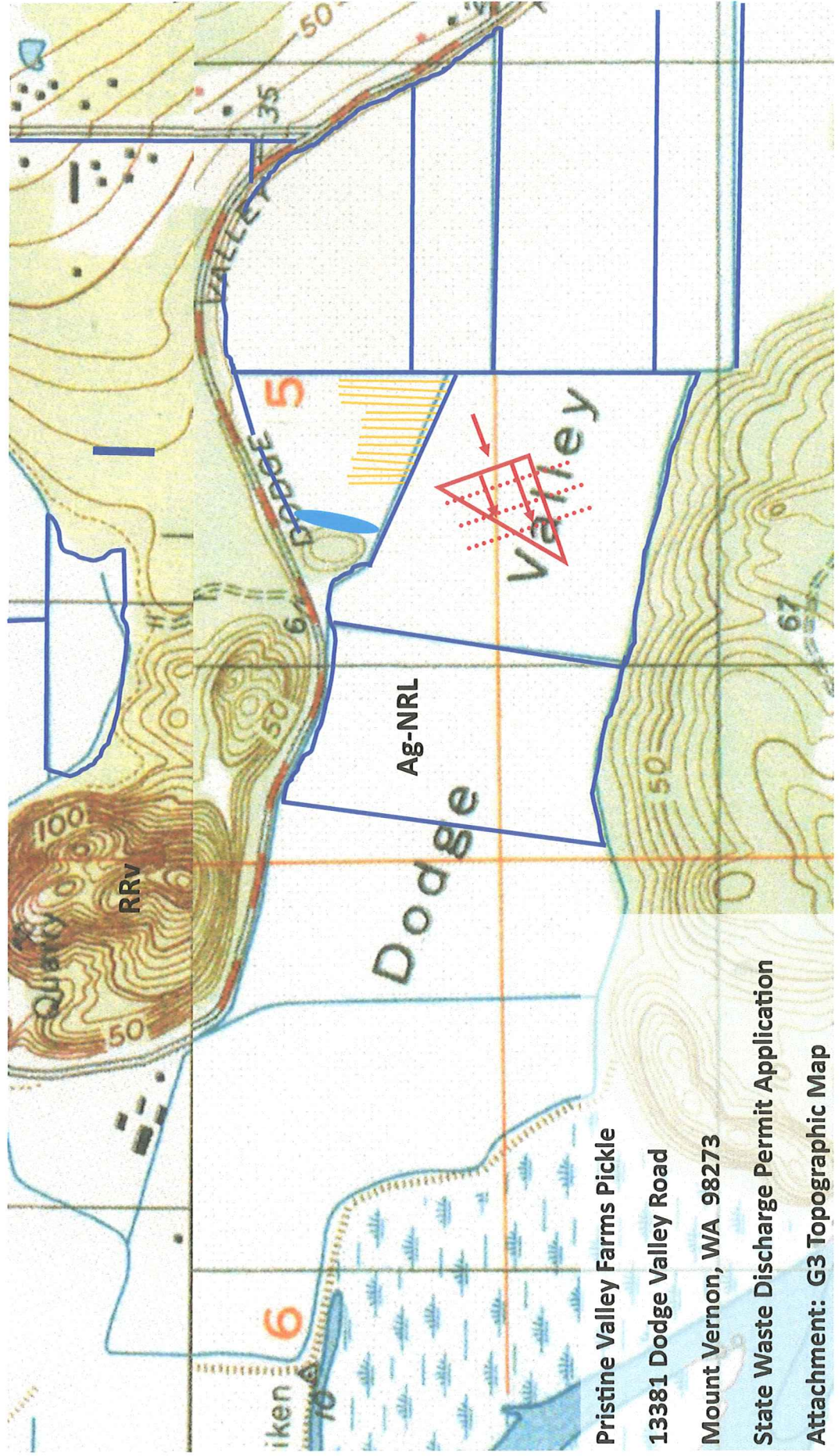
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



- a. Location: 13381 Dodge Valley Road, Mount Vernon, WA Adjacent Street Names: Dodge Valley Road
 - b. Surface Water Drainage Systems within 1/4 Mile of Site: Shown in Blue Lines
 - c. Wells within 1 Mile of the Site: See Attached Well Log Map
 - d. Wastewater Discharge Points: Shown in Yellow Lines in the Spray Field with 8 sprinkler heads on each of 4 long irrigation pipes, 6 sprinkler heads on each of 10 shorter Irrigation Pipes
 - e. Land Uses and Zoning Adjacent to Application Site: Farm Land Zoning is Agricultural —Natural Resource Lands (Ag-NRL) Use is Farm Land, Hill Ground Zoning is Rural Reserve (RRv) Use is Residential
 - f. Groundwater Gradient: Shown by Red Graph, Flow is From Pleasant Ridge Towards the South and West
- Collection Pond / Storage Basin: Shown by Turquoise Oval 



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Attachment: G3 Aerial Photograph



- Location: 13381 Dodge Valley Road, Mount Vernon, WA Adjacent Street Names: Dodge Valley Road
- Surface Water Drainage Systems within 1/4 Mile of Site: Shown in Blue Lines
- Wells within 1 Mile of the Site: See Attached Well Log Map
- Wastewater Discharge Points: Shown in Yellow Lines in the Spray Field with 8 sprinkler heads on each of 4 long irrigation pipes, 6 sprinkler heads on each of 10 shorter Irrigation Pipes
- Land Uses and Zoning Adjacent to Application Site: Farm Land Zoning is Agricultural — Natural Resource Lands (Ag-NRL) Use is Farm Land, Hill Ground Zoning is Rural Reserve (RRv) Use is Residential
- Groundwater Gradient: Shown by Red Graph, Flow is From Pleasant Ridge Towards the South and West

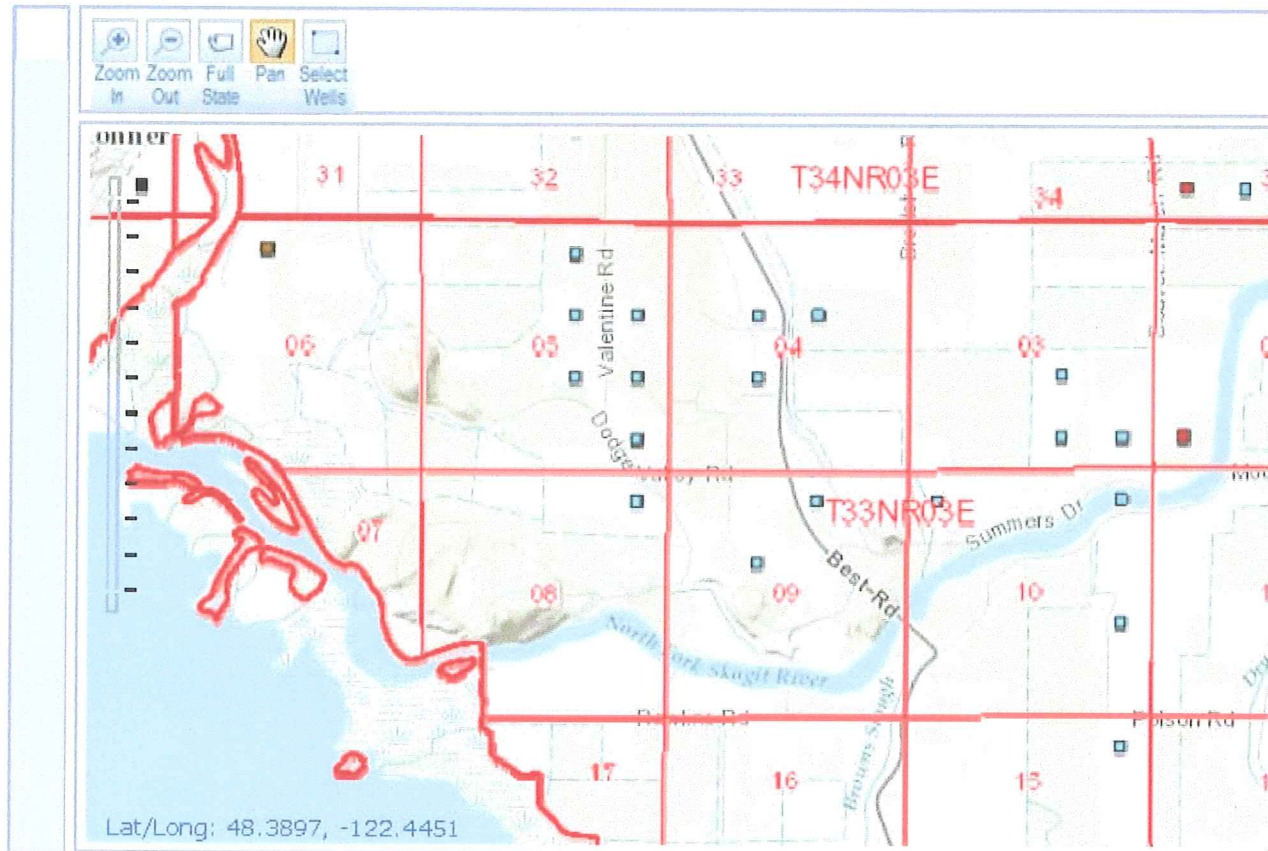
Collection Pond / Storage Basin: Shown by Turquoise Oval



Well Logs



[Home](#) [Map Search](#) [Text Search](#) [Forms](#) [Site Info](#) [Contact Us](#) [Water Portal](#)



Pristine Valley Farms Pickle

13381 Dodge Valley Road

Mount Vernon, WA 98273

State Waste Discharge Permit Application

Attachment G3: Well Log—Wells within 1 Mile of Processing and Spray Field Sites

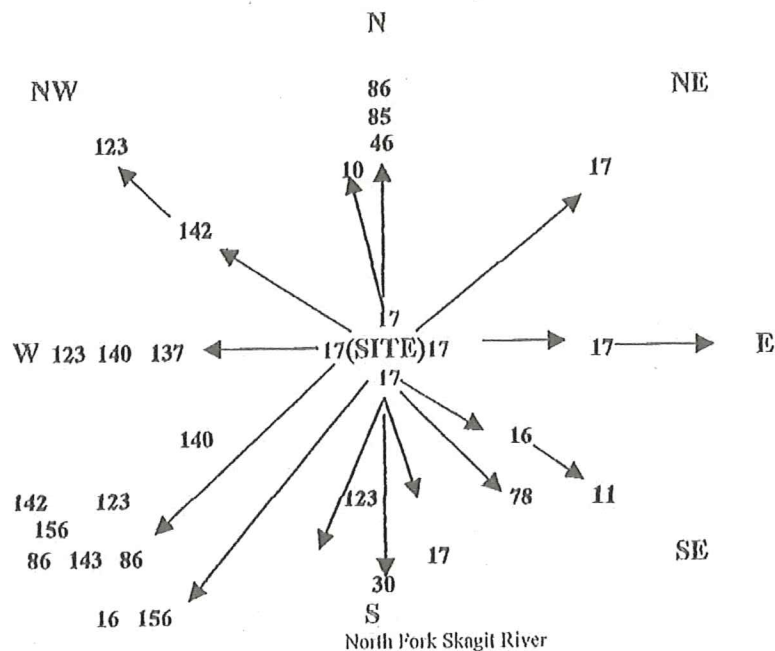
Pristine Valley Farms Pickle
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Attachment G5: Local Geology & Hydrology

(Copied from Cascade Ag Services 2003 State Waste Discharge Permit Application Packet for Permit Number ST-7439)

Soils/geology listed in Soil Survey of Skagit County Area, Washington, as illustrated on attached US Department of Agriculture, Washington State Department of Natural Resources Soil Map.

Connective Soil Maps 49 and 54, soil legend numbers within one mile radius of site:



Soil Legend, Clockwise beginning NORTH of SITE:

NORTH:

- (46) Dystric Xerochrepts, 45 to 70 percent slopes. These moderately deep to very deep, well-drained soils are on escarpments. They formed in glacial till and colluvium derived from rocks of mixed mineralogy. The native vegetation is mainly conifers and mixed hardwoods. Elevation is 50 to 1,300 feet. The average annual precipitation is about 50 inches, the average annual air temperature is about 50 degrees F and the average frost-free season is 170-190 days.

No single profile is representative of these soils, but one commonly observed in the survey area is covered with a mat of needles, leaves and twigs about 1 inch thick. The surface layer is dark brown gravelly loam 4 inches thick. The substratum to a depth of 60 inches or more is light olive brown very gravelly sandy loam. Texture, the content of rock fragments and depth to dense glacial till vary widely within short distances. In some small areas these soils have a clayey or sandy subsoil and substratum.

Included in this unit are small areas of tokul soils on hills and Barneston and Indianola soils on terraces.

Permeability of these Dystric Xerochrepts is moderate. Available water capacity is very low to moderate. Effective rooting depth is 20 to 60 inches or more. Runoff is medium and the hazard of water erosion is moderate. This unit is used as woodland.

- (85) LaConner very gravelly loamy sand, 0 to 8 percent slopes. This moderately deep, moderately well drained soil is on hills and terraces. It formed in glacial drift and an admixture of volcanic ash. The native vegetation is mainly conifers and shrubs. Elevation is 100 to 400 feet. The average annual precipitation is about 22 inches, the average annual air temperature is about 50 degrees F and the average frost-free season is 160 to 210 days.

Typically, the surface is covered with a mat of needles, leaves and twigs less than 1 inch thick. The surface layer, where mixed to a depth of 6 inches, is dark brown very gravelly loamy sand. The subsoil is dark brown and very yellowish brown very gravelly loamy sand 13 inches thick. The upper 13 inches of the substratum is dark grayish brown very gravelly loamy sand. The next 17 inches is grayish brown, dense glacial till that crushes to very gravelly fine sandy loam. Below this to a depth of 60 inches or more is light olive brown very gravelly loamy sand. Depth to dense glacial till ranges from 25 to 40 inches. In some areas the surface layer is gravelly loam or gravelly sandy loam and in some areas the profile is more than 40 inches deep to dense glacial till.

Included in this unit are small areas of Coveland soils in upland swales, Bow soils on glaciated remnant terraces and Swinomish soils on ridges of hills.

Permeability of this LaConner soil is rapid above the dense glacial till and very slow through the till. Available water capacity is very low to low. Effective rooting depth is 25 to 40 inches. Runoff is slow and the hazard of water erosion is slight. A perched water table fluctuates between depths of 24 and 36 inches from November to April.

This unit is used mainly as woodland. A few areas are used as hayland, pastureland and homesites. Douglas fir is the main woodland species on this unit.

- (86) LaConner very gravelly loamy sand, 8 to 15 percent slopes. This moderately deep, moderately well drained soil is on hills and terraces. It formed in glacial drift an admixture of volcanic ash. The native vegetation is mainly conifers and shrubs. Elevation is about 22 inches, the average annual air temperature is about 50 degrees F and the average frost-free season is 160-210 days.

Typically, the surface is covered with a mat of needles, leaves and twigs less than 1 inch thick. The surface layer, where mixed to a depth of 6 inches, is very dark brown very gravelly loamy sand. The subsoil is dark brown and dark yellowish brown very gravelly loamy sand 13 inches thick. The upper 13 inches of the substratum is dark grayish brown very gravelly loamy sand and the lower 6 inches is light olive brown very gravelly loamy sand. The next 17 inches is grayish brown, dense glacial till that crushes to very gravelly fine sandy loam. Below this to a depth of 60 inches or more is light olive brown very gravelly loamy sand. Depth to dense glacial till ranges from 25 to 40 inches. In some areas the surface layer is gravelly loam, in some areas the subsoil is very gravelly sandy loam and in some areas dense glacial till is at a depth of more than 40 inches.

Included in this unit are small areas of Coveland soils in swales on hills, Bow soils on glaciated remnant terraces and LaConner soils that have slope of more than 15 percent.

Permeability of the LaConner soil is rapid above the dense glacial till and very slow through of the till. Available water capacity is very low to low. Effective rooting depth is 25 to 40 inches from November to April.

This unit is used mainly as woodland. A few areas are used as hayland, pastureland and homesites.

Douglas fir is the main woodland species on this unit.

NORTHEAST and EAST:

- (17) Bow gravelly loam, 3 to 8 percent slopes. This is same as site location. This very deep, somewhat poorly drained soil is on glaciated terraces and undulating till plains. It formed in glaciolacustrine material and gravelly glacial drift mantled with volcanic ash. The vegetation in areas not cultivated is mainly confers. Elevation is 50 to 400 feet. The average annual precipitation is about 30 inches, the average annual air temperature is about 50 degrees F and the average frost-free season is 170 to 220 days.

Typically, the surface layer is dark brown gravelly loam 7 inches thick. The upper 10 inches of the subsoil is dark brown very gravelly loam, the next 14 inches is grayish brown clay loam, olive gray silty clay and light olive gray silt loam, and the lower part to a depth of 60 inches or more is olive gray silty clay. In some areas the surface layer is gravelly silt loam or black gravelly loam about 9 inches thick, and in some areas the subsoil is loamy.

Included in this unit are small areas of Catla and Clallam soils on knolls and Swinomish soils on ridges of hills.

Permeability of this Bow soil is slow. Available water capacity is high. Effective rooting depth is limited by a perched water table that is at a depth of 6 to 18 inches from November to May. Runoff is medium and the hazard of water erosion is slight.

This unit is used as hayland, pastureland, woodland and homesites. If adequately drained, the unit is suited to climatically adapted cultivated crops.

Douglas fir is the main woodland species on this unit. Among trees of limited extent are red alder, western redcedar and western hemlock. Common forest understory plants are salal, trailing blackberry, evergreen huckleberry, western swordfern, creambush oceanspray and northern twinflower.

SOUTHEAST:

- (16) Bow gravelly loam, 0 to 3 percent slopes. This very deep, somewhat poorly drained soil is on glaciated terraces and undulating till plains. It formed in glaciolacustrine material and gravelly glacial drift mantled with volcanic ash. The vegetation in areas not cultivated is mainly conifers and shrubs. Elevation is 50 to 400 feet. The average annual precipitation is about 30 inches, the average annual air temperature is about 50 degree F and the average frost-free season is 170 to 220 days.

Typically, the surface layer is dark brown gravelly loam 7 inches thick. The upper 10 inches of the subsoil is dark brown very gravelly loam, the next 14 inches is grayish brown clay loam, olive gray silty clay and light olive gray silt loam, and the lower part to a depth of 60 inches or more is olive gray silty clay. In some areas the surface layer is gravelly silt loam or black gravelly loam about 9 inches thick, and in some area the subsoil is loamy.

Included in this unit are small areas of Bellingham soils in west depressional areas and along drainageways and Catla and Clallam soils on knolls.

Permeability of this Bow soil is slow. Available water capacity if high. Effective rooting depth is limited by a perched water table that is at a depth of 6 to 18

inches from November to May. Runoff is slow and the hazard of water erosion is slight.

This unit is used as hayland, pastureland, woodland and homesites. If adequately drained, the unit is suited to climatically adapted cultivated crops. The main limitation for hay and pasture is seasonal wetness. The water table limits the use of this unit to grasses and shallow-rooted legumes.

Douglas fir is the main woodland species on this unit. Among the trees of limited extent are red alder, western redcedar and western hemlock. Common forest understory plants are salal, trailing blackberry, evergreen huckleberry, western swordfern, creambush oceanspray and northern twinflower.

- (11) This very deep, poorly drained soil is in depressional areas. It formed in alluvial and lacustrine material. Slope is 0 to 2 percent. The native vegetation is mainly mixed hardwoods and conifers. Elevation is near sea level to 450 feet. The average annual precipitation is about 40 inches, the average annual air temperature is about 51 degrees F, and the average frost-free season is 170 to 210 days.

Typically, the surface layer is very dark gray mucky silt loam 9 inches thick. The upper 12 inches of the subsoil is gray silty clay. The substratum to a depth of 60 inches or more is dark bluish gray silty clay. In some small areas gravel is in the profile, the surfacelayer is thin, or strata of fine sand are in the substratum.

Included in this unit are small area of Norma soils along drainageways, Skipopa soils on terraces and Mulilteo soils and Terric Mediasaprists in depressional areas.

Permeability of this Bellingham soil is slow. Available water capacity is high. Effective rooting depth is limited by a perched water table that is at or above the surface from November to April. This soils is subject to ponding during the rainy season. Runoff is ponded and the hazard of water erosion is slight.

This unit is used as woodland and wildlife habitat.

Red alder is the main woodland species on this unit. Among the trees of limited extent are western redcedar and western hemlock. Common forest understory plants are western swordfern, salmonberry and other perennial forbs and shrubs.

- (78) Keystone loamy sand, 0 to 8 percent slopes.
This very deep, excessively drained soil is on kames, moraines, and outwash plains. It formed in sandy glacial drift. The native vegetation is mainly conifers. Elevation is near sea level to 300 feet. The average annual precipitation is about 23 inches, the average annual air temperature is about 51 degrees F, and the average frost free season is 180 to 220 days.

Typically, the surface is covered with a mat of needles, leaves and twigs 1 inch thick. The surface layer, where mixed to a depth of 7 inches is dark brown loamy sand. The subsoil is dark yellowish brown loamy sandy 8 inches thick. The substratum to a depth of 60 inches or more is light olive brown, grayish brown, and olive brown sand. In some areas the surface layer is sandy loam to a depth of 10 inches, in some areas the profile is 15 to 35 percent rock fragments and in some areas dense glacial till is at a depth of 40 to 60 inches.

Included in this unit are small areas of soils that have a sandy loam subsoil and soils that have properties associated with weathered volcanic ash. Also included are small areas of Bow soils on glaciated remnant terraces and Clallam soils on glaciated uplands.

Permeability of this Keystone soil is rapid. Available water capacity is low to moderate. Effective rooting depth is 60 inches or more. Runoff is slow and the hazard of erosion is slight.

Most areas of this unit are used as woodland. A few areas are pastureland, hayland and homesites.

Douglas fir is the main woodland species on this unit. Among the trees of limited extent are grand fir and western redcedar. Common forest understory plants are Indian plum, stinging nettle, Oregon grape, western swordfern, rose and bedstraw.

This unit is well suited for year-round logging. The droughtiness of the surface layer increases the mortality rate of seedlings. The main limitations for pasture and hay are droughtiness and low soil fertility. This unit is well suited for homesites.

SOUTH:

(17) SEE NORTHEAST

(123) Skagit Silt Loam.

This very deep, poorly drained soil is on flood plains and deltas. Drainage has been altered by use of tile and open ditches. This soil is partially protected from flooding. It formed in recent alluvium and volcanic ash. Slope is 0 to 1 percent. The vegetation in areas not cultivated is mainly hardwoods and conifers. Elevation is 0 to 50 feet. The average annual precipitation is about 32 inches, the average annual air temperature is about 51 degrees F and the average frost-free season is 160 to 210 days.

Typically, the surface layer is very dark grayish brown and dark brown silt loam about 12 inches thick. The upper 8 inches of the underlying material is gray silt

Permeability of the Whistle soil is moderate. Available water capacity is moderate to high. Effective rooting depth is 40 to 60 inches. Runoff is medium and the hazard of water erosion is moderate.

The Fidalgo soil is moderately deep and moderately well drained. It formed in colluvium, glacial till and residuum derived dominantly from argillite. Typically, the surface is covered with a mat of needles, leaves and twigs 1 inch thick. The surface layer is very dark brown gravelly loam 3 inches thick. The upper 15 inches of the subsoil is dark brown very gravelly fine sandy loam and the lower 7 inches is dark brown very gravelly sandy loam. The substratum is very dark brown extremely gravelly loamy sand 4 inches thick. Argillite is at a depth of 29 inches. Depth to argillite ranges from 20 to 40 inches.

Permeability of Fidalgo soil is moderate. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate. A perched water table fluctuates between depths of 24 and 36 inches from December to March.

Rock outcrop consists of exposures of hard and mostly unweathered argillite. It occurs as steep cliffs and irregular formations.

This unit is used as woodland and watershed.

Douglas fir is the main woodland species on the Whistle soil, and Fidalgo soil. Among the trees of limited extent are western redcedar, lodgepole pine, western hemlock and grand fir. Common forest understory plants are Pacific madrone, Oregongrape, trailing blackberry, rose, broadleaf starflower, creambush, oceanspray, currant and Indian plum.

The areas of Rock outcrop make up about 15 percent of this unit and limit yields accordingly.

(16) See SOUTHEAST

(86) See NORTH

(143) Terric Mediasaprists, 0 to 2 percent slopes.

These deep, poorly drained soils are in back swamps of flood plains and in depressional areas on till plains. The soils formed in decomposed organic matter over mineral material. The vegetation is mainly shrubs and water-tolerant conifers. Elevation is 10 to 650 feet. The average annual precipitation is about 40 inches, the average annual air temperature is about 50 degrees F, and the average frost-free season is 150 to 190 days.

No single profile is representative of these soils, but one commonly observed in the survey area has a surface layer of black muck about 17 inches thick. The

inches of the subsoil is dark brown very gravelly fine sandy loam, and the lower 7 inches is dark brown very gravelly sandy loam. The substratum is very dark brown extremely gravelly loamy sand 4 inches thick over hard argillite. Depth to argillite ranges from 20 to 40 inches.

Permeability of the Fidalgo soil is moderate. Available water capacity is low to moderate. Effective rooting depth is 20 to 40 inches. Runoff is medium and the hazard of water erosion is moderate. A seasonal high water table fluctuates between depths of 24 and 36 inches from December to March.

Rock outcrop consists of exposures of hard and mostly unweathered argillite. It occurs as steep cliffs and irregular formations.

This unit is used as woodland.

Douglas fir is the main woodland species on the Swinomish soil. Among the trees of limited extent are grand fir, western redcedar and western hemlock. Common forest understory plants are western swordfern, trailing blackberry, twinflower, vine maple, currant and rose.

Douglas fir is the main woodland species on the Fidalgo soil. Among the trees of limited extent are western redcedar, lodgepole pine, western hemlock and grand fir. Common forest understory plants are Pacific madrone, Oregon grape, trailing blackberry, rose, broadleaf starflower, creambush oceanspray, current and Indian plum.

The areas of Rock outcrop make up about 15 percent of this unit and limit yields accordingly.

WEST:

(137) Swinomish gravelly loam, 0 to 8 percent slopes.

This moderately deep, moderately well drained soil is on ridges of hills; it formed in glacial till with an admixture of loess and volcanic ash. The native vegetation is mainly conifers and shrubs. Elevation is 100 to 1,200 feet. The average annual precipitation is about 23 inches, the average annual air temperature is about 50 degrees F, and the average frost-free season is 160 to 210 days.

Typically, the surface is covered with a mat of needles, leaves and twigs 1 inch thick. The surface layer is dark brown gravelly loam 3 inches thick. The upper 17 inches of the subsoil is strong brown gravelly loam and the 4 inches is yellowish brown very gravelly fine sandy loam. The upper 5 inches of the substratum is light olive brown very gravelly fine sandy loam and the lower 2 inches is light olive brown very gravelly sandy loam. Dense glacial till ranges from 25 to 40 inches. In some areas the soil does not have properties associated with weathered volcanic ash, and in some areas it is moderately deep to bedrock.

**Pristine Valley Farms Pickle, LLC
Mount Vernon, WA 98273
State Waste Discharge Permit Application**

Attachment- C2 Production Processes and Water Balance

Industrial Processes

Pristine Valley Farms Pickle, LLC ("PVFP") currently processes cabbage into sauerkraut at a Port of Skagit County facility located at 539 North 3rd Street, La Conner. PVFP would like to move its sauerkraut operation to a facility located at 13381 Dodge Valley Road, Mount Vernon. PVFP operations at the Dodge Valley Road site will include processing cabbage into sauerkraut, processing cucumbers and peppers into pickles. Cucumbers generally arrive from local farms from July through October while cabbage arrives typically in October and November. The following provides an overview of the production processes for the three product lines.

The intake of the public utility water is located on Dodge Valley Road. From the road the water line runs north to the tank farm.

In the tank yard the water is utilized to fill the brine tanks as fluid evaporates from the tanks. There is naturally a higher rate of evaporation during the summer months on hot days. Depending on the outside temperature, it is estimated that 75 gallons of water evaporate from each tank. During the harvest months water is also used to make salt stock brine to ferment the fresh cucumbers for future manufacturing.

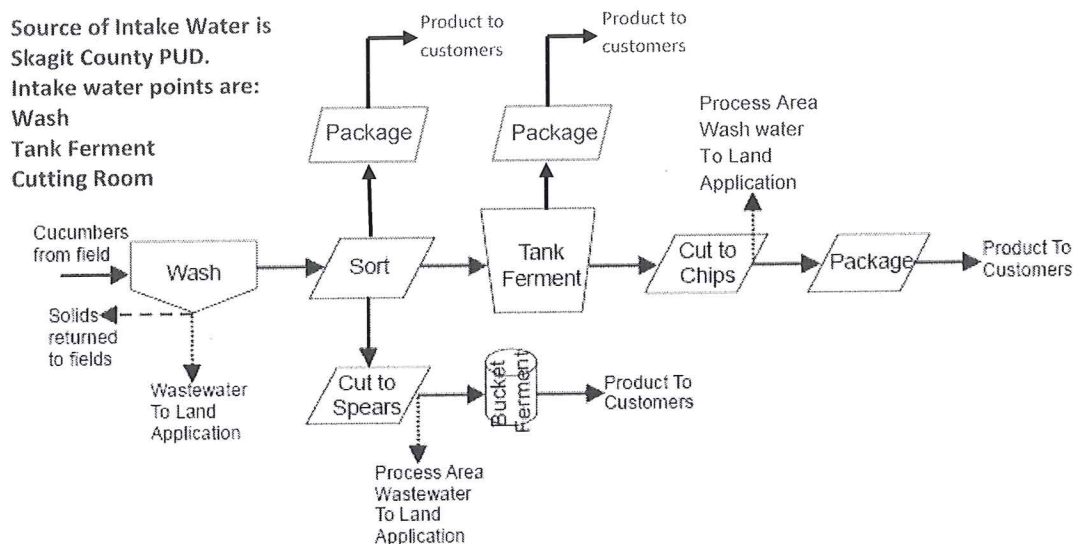
In the future production facility the water supply will be utilized for brine making as well as wash down operations. In each 5 gallon pail of pickles, the production team uses approximately 17-25 pounds of water, i.e. cover brine. The future production facility will be cleaned and washed down at the end of each production day. During the harvest months water is also used for the wash tanks on the fresh cucumber grading line and the cabbage line for sauerkraut.

All wash down water from the future production room will be collected in underground holding tanks. In the holding tanks the organic solids settle to the bottom of the tank and the liquid flows from the holding tanks through the effluent line under Dodge Valley Road where the effluent water is applied to the spray field.

Rain water is collected in the ditch on the west end of the tank farm and then flows to the oil separator. From the oil separator the line runs under Dodge Valley Road to the spray field holding pond.

Cucumber Pickling Process:

Cucumbers are trucked in from local fields and unloaded into a wash tank. Clean cucumbers are conveyed to the sorting system and placed into bins by size. After sorting, the cucumbers will follow one of four process routes. One route will send the cucumbers to the cutting room (future construction on this site or leased on adjacent site) where they are cut into various sizes and shapes before being placed into shipping containers with flavors, spices, and brine for pickling. In the second process route, whole cucumbers are placed in 8,000 – 10,000 gallon vats filled with brine for pickling. Pickled cucumbers are later removed and sent to the cutting room where they are cut into various shapes and sizes before being placed into shipping containers with flavors, spices and brine as orders arrive. In the third process route, pickled cucumbers are placed whole into shipping containers. In the fourth process route, whole fresh cucumbers are placed in shipping containers and sent to customers without any pickling. The following illustrates the general process used for pickling cucumbers and shipping fresh cucumbers.



Sauerkraut Process

Cabbages arrive from local farm fields via truck and unloaded into a wash tank. Cleaned cabbage heads are conveyed to shredders and corers in the main process area. The shredded, cored cabbage is then transported to 8,000 – 10,000 gallon fermentation tanks for pickling. Finished product is packaged in various sized containers before shipping to customers. The following diagram illustrates the general sauerkraut production process.

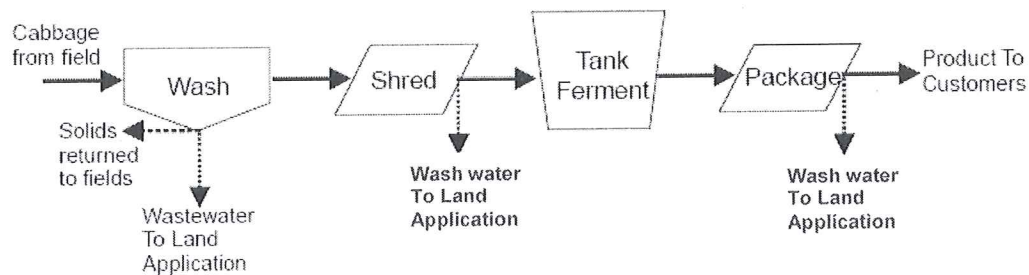
Source of Intake Water is
Skagit County PUD.

Intake water points are:

Wash

Tank Ferment

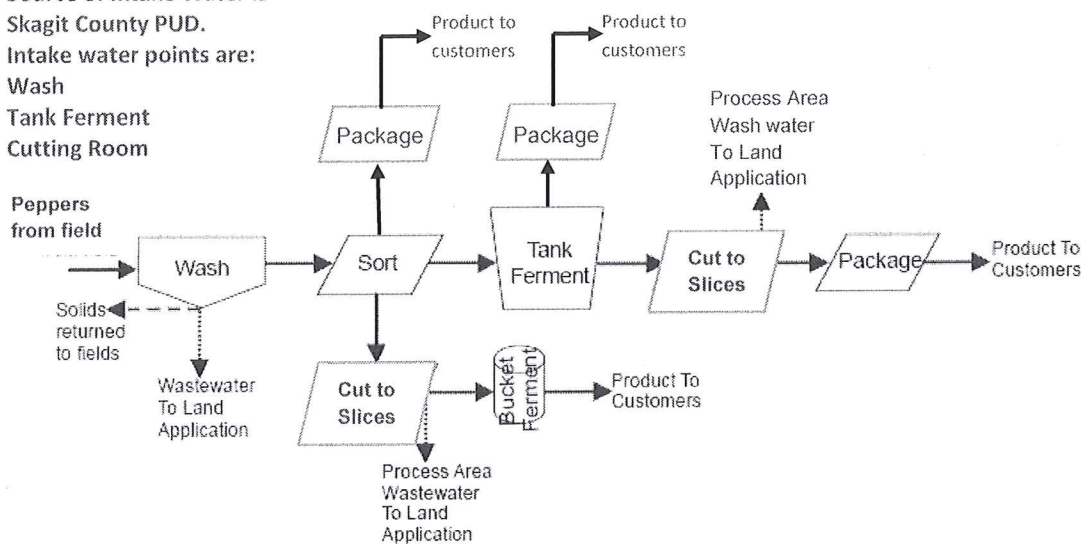
Cutting Room



Pepper Process

Peppers are trucked in from farm fields and unloaded into a wash tank. Clean peppers are conveyed to the sorting system and placed into bins. After sorting, the peppers will follow one of three process routes. One route will send the peppers to the cutting room (future construction on this site or leased on adjacent site) where they are cut into slices or left whole and then placed into shipping containers with flavors, spices, and brine for pickling. In the second process route, whole peppers are placed in 8,000 – 10,000 gallon vats filled with brine for pickling. Pickled peppers are later removed and sent to the cutting room where they are cut into slices or left whole and then placed into shipping containers with flavors, spices and brine as orders arrive. In the third process route, pickled peppers are placed whole into bulk shipping containers. The following illustrates the general process used for pickling peppers.

Source of Intake Water is
Skagit County PUD.
Intake water points are:
Wash
Tank Ferment
Cutting Room



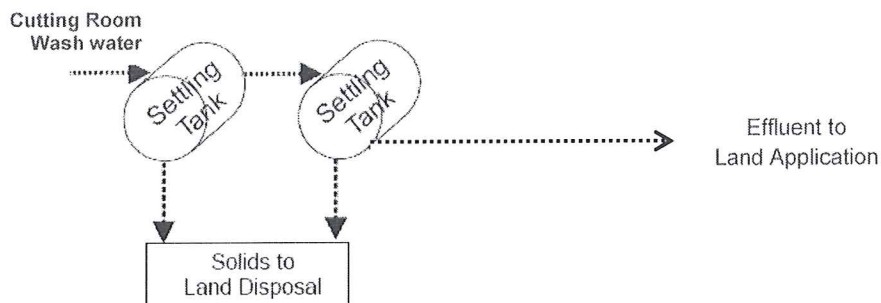
Water Balance

Annual Water Balance in Gallons	
2,115,000	Process Water Discharged
1,000,000	Fermentation Tanks Usage
1,000,000	Finished Goods (Cutting Room) Usage
1,008,000	Landscape Irrigation Usage
5,123,000	Potable Water Usage

Treatment Processes

Wash water associated with pickle and sauerkraut production is generated at the initial raw product wash stage and from equipment wash down in the process area. Solids generated due to the washing process settle out in the wash tank. The wash water gravity flows through the French drain to the catch basin. In the event more storage is required, four 10,000 gallon tanks provide overflow for the catch basin. The flow is pumped from the storage area directly to an irrigation pump for spray field application; solids that accumulate in the wash tank are returned to local agriculture fields.

When a cutting room has been established; equipment wash down water will be collected in floor drains with grit traps, then conveyed to settling tanks. The facility will use two 2,000 gallon settling tanks in series to remove settleable solids. As needed the accumulated liquids are sent to the spray field through a pipe connected to the irrigation pump. Solids that accumulate in the settling tanks will be removed with a vactor truck twice a year and land applied to nearby agriculture fields. The following diagram illustrates the basic treatment process for future cutting room wash water.



Distribution System (Spray Field, Drain field, Infiltration Basin)

PVFP has access to a 16 acre field for land application of wash water and stormwater generated at the facility. Wash water from Cucumber/Cabbage/Pepper washing and from the future cutting room area treatment system will be conveyed to the field through a dedicated PVC pipeline. This pipeline connects directly to the irrigation pump located at the application site. Stormwater collected at the facility accumulates in a dammed portion of a drainage ditch that service as a temporary storage basin. During 12 months of the year, stormwater is pumped from this basin and applied to the spray field using an irrigation pump.

Stormwater System

Stormwater is collected in a ditch at the west end of the tank farm and is routed to a central oil-water separator for treatment. From the oil water separator the stormwater is conveyed to a drainage ditch adjacent to the land application site. A barrier has been installed in the ditch to prevent the stormwater from leaving the vicinity of the spray field, effectively converting a section of the ditch into a storage basin. During 12 months of the year, water is pumped from this basin and applied to the spray field.