



GENERAL APPLICATION FORM

For Land Use Actions

Yakima County Public Services

128 North Second Street · Fourth Floor Courthouse · Yakima, Washington 99101
(509) 574-2300 · 1-800 572-7354 · FAX (509) 574-2301 · www.co.yakima.wa.us

Public Services **DA**

FINAL
Revised 03/28/18

SEP 18 2018

Mat Don Lynn
Harold Lisa Carmen

(Staff Use Only)

Zoning District: AG Date: 9/18/2018
 Receipt #: _____ Reviewed By: JH
 Proposed Land Use: Type 2 CAFO Dairy Case #(s): CUP2018-00099/
SEP2018-00047

CHECK ALL THAT APPLY AND ATTACH THE APPROPRIATE SUPPLEMENTAL FORM(S)

Zoning		Subdivision		Shoreline	
<input type="checkbox"/> Type 1	<input type="checkbox"/> Admin. Adjustment	<input type="checkbox"/> Exemption (SSE)	<input type="checkbox"/> Shoreline Substantial Dev.		
<input checked="" type="checkbox"/> Type 2	<input type="checkbox"/> Variance	<input type="checkbox"/> Short Subdivision	<input type="checkbox"/> Shoreline Conditional Use		
<input type="checkbox"/> Type 3	<input type="checkbox"/> Modification	<input type="checkbox"/> Subdivision (Long)	<input type="checkbox"/> Shoreline Variance		
<input type="checkbox"/> Type 4	<input type="checkbox"/> Non-Conforming Use	<input type="checkbox"/> Binding Site Plan	<input type="checkbox"/> Shoreline Exemption		
<input type="checkbox"/> Reduce Resource Setback	<input type="checkbox"/> Interpretation	<input type="checkbox"/> Alteration/Vacation	<input type="checkbox"/> Shoreline Non-Conforming		
<input type="checkbox"/> Accessory Dwelling Unit	<input checked="" type="checkbox"/> Dairy	<input type="checkbox"/> *Amendment	<input type="checkbox"/> Shoreline Minor Revision		
<input type="checkbox"/> Minor Rezone	<input type="checkbox"/> Mining	<input type="checkbox"/> Sub Variance			
<input type="checkbox"/> Major Rezone					
Other		Critical Areas			
<input checked="" type="checkbox"/> Environmental Checklist	<input type="checkbox"/> Plan/Dev. Reg. Map Ad.	<input type="checkbox"/> CA Standard Development			
<input type="checkbox"/> Appeal - HE	<input type="checkbox"/> BOCC	<input type="checkbox"/> CA Adjustment			
<input type="checkbox"/> Development Agreement	<input type="checkbox"/> Plan/Dev. Reg. Text Ad.	<input type="checkbox"/> CA Reasonable Use Except.			
		<input type="checkbox"/> CA Minor Revision			
		<input type="checkbox"/> CA Non-Conforming Use			

Parcel Number(s): A. 230818-12001 B. 230818-21001 C. 230818-22001

Subject Property Address: GLADE Rd, unassigned

Are you requesting the Optional Consolidated Permit Review Process as provided under YCC 16B.03.060? Yes No

* In accordance with YCC16B.04.020(2)(a) please submit verification with your Short Subdivision Amendment or Subdivision Amendment that the majority of those persons having an ownership interest in the lots, tracts, parcels, or portion thereof to be revised or altered has signed the proposed application.

EVIDENCE OF LEGAL AVAILABILITY OF WATER (YCC12.08.050) **NA**

All applicants for a development permit requiring potable water must provide evidence of an adequate water supply to Yakima County prior to the issuance of the permit. Check below the legal source of water.

- Water right permit from Department of Ecology (Please attach a copy to this application), or
- Letter from an approved water purveyor stating the ability to provide water, or
- **A Yakima County Water Resource System (YCWRS) domestic well within the Agriculture zoning district, or
- **A Yakima County Water Resource System (YCWRS) domestic well outside of the Agriculture zoning district, or
- Other adequate evidence of interest in a suitable water right held for mitigation proposed by an existing water bank, or
- Yakama Nation Water Code permit for properties located within the exterior boundaries of the Yakama Nation, or
- Documentation that the well site is located outside the Yakima River watershed.

Additional Information

Prior to final approval, the applicant will be required to provide evidence of the water quality and quantity in the following forms:

1. A Letter from an approved water purveyor stating the ability to provide water, or
2. Notification from the Yakima Health District that the water supply is potable. (wells)

****Yakima County Water Resource System (YCWRS) is a water system organized pursuant to RCW 36.94.140 which provides service to the public in the form of "mitigated" or "water budget neutral" water supplies for domestic use through the withdrawal of domestic supply from a groundwater permit exempt well. The service areas of the water system is all of the privately held property in Yakima County within the Yakima River watershed except those areas within the corporate limits of the city, within the exterior boundaries of the Yakama Reservation, or within the service areas of a Type A and Type B water system in existence prior to January 1, 2018. The YCWRS holds senior water rights and allows the use of such rights by the public when wells are constructed and metered accordingly to YCWRS procedures.**

Applicant Information: (Please check the box to indicate the primary contact person)

By signing this form, the property owner/applicant agrees to the following:

- I hereby state as true that all ownership interests of the property have reviewed the proposal as presented in the application materials and support the proposed change(s) in land use.
- I hereby give Yakima County permission to enter my property during this review to inspect my property as needed.
- I hereby agree to pay all additional fees associated with the processing of this application including Hearing Examiner fees, Transportation fees or any other fees that may be associated with the proposed project.
- I hereby acknowledge that the application for Subdivision and/or Land Use Permit with the Yakima County Permit Services Department: Planning Division has been filled out completely.
- I hereby acknowledge that verification of an approved potable water supply is a requirement and part of the procedure to obtain a Subdivision and/or Land Use Permit.
 - I shall provide Yakima County with proof of an adequate water source as indicated in Ordinance 13-2017 or obtain a YCWRS domestic well permit. **NA**
- I understand that Yakima County shall be held harmless for misinterpretation or misrepresentation of documents to obtain my permits.
 - I am aware my subdivision and/or Land Use Permit WILL NOT be issued until I provide proof of an approved source of potable water and associated documentation. **NA**

(If the property is owned by a corporation or LLC please attach documentation showing that the person signing has the authority to sign on behalf of the corporation or LLC.)

Please Fill Out This Section In Blue or Black Ink and Original Signatures only.

Property Owner: FRH Enterprises LLC
 Day Phone: (509) 837-3275 Company (if any) _____
 Mailing Address: 650 Hornby R City: Grandview State: WA ZIP: 98930
 E-mail Address: office@windmillestates.net
 Signature: _____ (required) Date: _____

Applicant/Agent (if different): BT Engineering LLC Tim Bardell
 Day Phone: (509) 837-8600 Company (if any) BT Engineering
 Mailing Address: PO Box 487 City: Sunnyside State: WA ZIP: 98944
 E-mail Address: tim@btengineering.com
 Signature: [Signature] Date: 9-18-2018

If there are additional owners, provide an attachment in the same format and with the same declarations



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FINAL
Revised 10/01/15

(Staff Use Only)

Zoning District: _____ Date: _____
 Receipt #: _____ Reviewed By: _____
 Proposed Land Use: _____ Project #: _____
 Case #(s): _____

CHECK ALL THAT APPLY AND ATTACH THE APPROPRIATE SUPPLEMENTAL FORM(S)

- | | | | | | |
|---|--|--|--|---|--|
| <u>Zoning</u> | | <u>Subdivision</u> | | <u>Shoreline</u> | |
| <input type="checkbox"/> Type 1 | <input type="checkbox"/> Admin. Adjustment | <input type="checkbox"/> Exemption (SSE) | <input type="checkbox"/> Short Subdivision | <input type="checkbox"/> Shoreline Substantial Dev. | |
| <input checked="" type="checkbox"/> Type 2 | <input type="checkbox"/> Variance | <input type="checkbox"/> Subdivision (Long) | <input type="checkbox"/> Binding Site Plan | <input type="checkbox"/> Shoreline Conditional Use | |
| <input type="checkbox"/> Type 3 | <input type="checkbox"/> Modification | <input type="checkbox"/> Alteration/Vacation | <input type="checkbox"/> *Amendment | <input type="checkbox"/> Shoreline Variance | |
| <input type="checkbox"/> Type 4 | <input type="checkbox"/> Non-Conforming Use | <input type="checkbox"/> Sub Variance | | <input type="checkbox"/> Shoreline Exemption | |
| <input type="checkbox"/> Reduce Resource Setback | <input type="checkbox"/> Interpretation | | | <input type="checkbox"/> Shoreline Non-Conforming | |
| <input type="checkbox"/> Accessory Dwelling Unit | <input type="checkbox"/> Dairy | | | <input type="checkbox"/> Shoreline Minor Revision | |
| <input type="checkbox"/> Minor Rezone | <input type="checkbox"/> Mining | | | | |
| <input type="checkbox"/> Major Rezone | | | | | |
| <u>Other</u> | | <u>Critical Areas</u> | | | |
| <input checked="" type="checkbox"/> Environmental Checklist | <input type="checkbox"/> Plan/Dev. Reg. Map Ad. | <input type="checkbox"/> CA Standard Development | | | |
| <input type="checkbox"/> Appeal - HE | <input type="checkbox"/> BOCC | <input type="checkbox"/> CA Adjustment | | | |
| <input type="checkbox"/> Development Agreement | <input type="checkbox"/> Plan/Dev. Reg. Text Ad. | <input type="checkbox"/> CA Reasonable Use Except. | | | |
| | | <input type="checkbox"/> CA Minor Revision | | | |
| | | <input type="checkbox"/> CA Non-Conforming Use | | | |

Parcel Number(s): A. 230818 22001 B. 230818 - 21001 C. 230818 12601

Subject Property Address: GLADE ROAD (unassigned)

Are you requesting the Optional Consolidated Permit Review Process as provided under YCC 16B.03.060? Yes No

* In accordance with YCC16B.04.020(2)(a) please submit verification with your Short Subdivision Amendment or Subdivision Amendment that the majority of those persons having an ownership interest in the lots, tracts, parcels, or portion thereof to be revised or altered has signed the proposed application.

Applicant Information: (Please check the box indication the primary contact person)

By signing this form, I hereby state as true that all ownership interests of the property have reviewed the proposal as presented in the application materials and support the proposed change(s) in land use and hereby give Yakima County permission to enter my property during the course of this review to inspect my property as needed. **Additionally, I hereby agree to pay all additional fees associated with the processing of this application including Hearing Examiner Fees, Transportation Fees or any other fees that may be associated with the proposed project.**

(If the property is owned by a corporation or LLC please attach documentation showing that the person signing has the authority to sign on behalf of the corporation or LLC.) **Please Fill Out In Blue or Black Ink and Original Signatures only.**

Property Owner: FRH Enterprises LLC
 Day Phone: (509) 837-3275 Company (if any) _____
 Mailing Address: 650 Hanby Rd City: Grandview State: WA ZIP: 98930
 E-mail Address: office@windmillestates.net
 Signature: _____ Date: 9-14-18

Applicant/Agent (if different): B7 engineering
 Day Phone: (509) 837-8600 Company (if any) _____
 Mailing Address: 1614 Eastway Drive City: Sunnyside State: WA ZIP: 98944
 E-mail Address: _____
 Signature: TWB Date: 9-17-2018

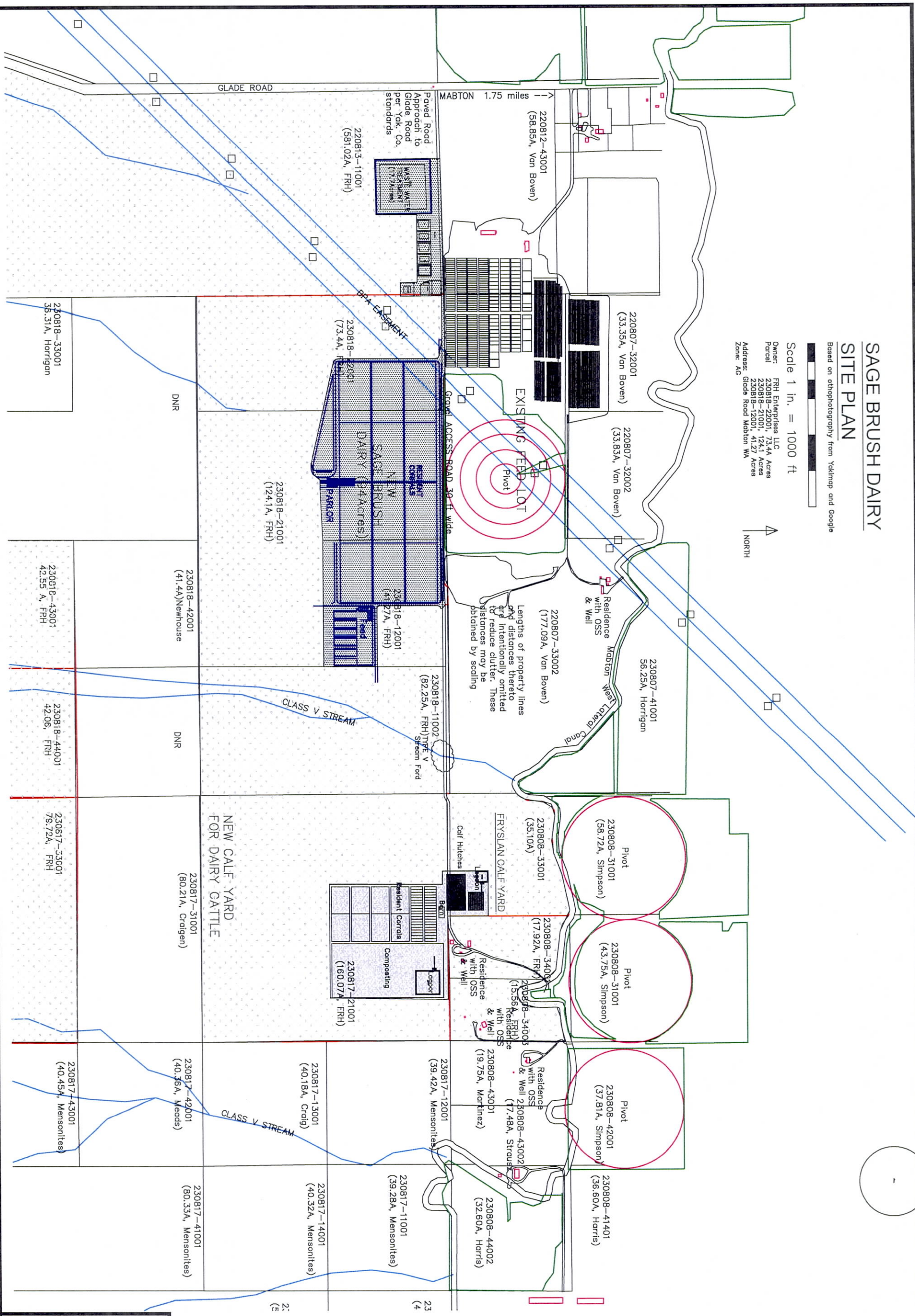
If there are additional owners, provide an attachment in the same format and with the same declarations

SAGE BRUSH DAIRY SITE PLAN

Based on orthophotography from Yakimap and Google

Scale 1 in. = 1000 ft

Owner: FRH Enterprises LLC
 Parcel: 230818-21001, 73.44 Acres
 230818-21001, 124.1 Acres
 Address: Glade Road Mabton WA
 Zone: AG

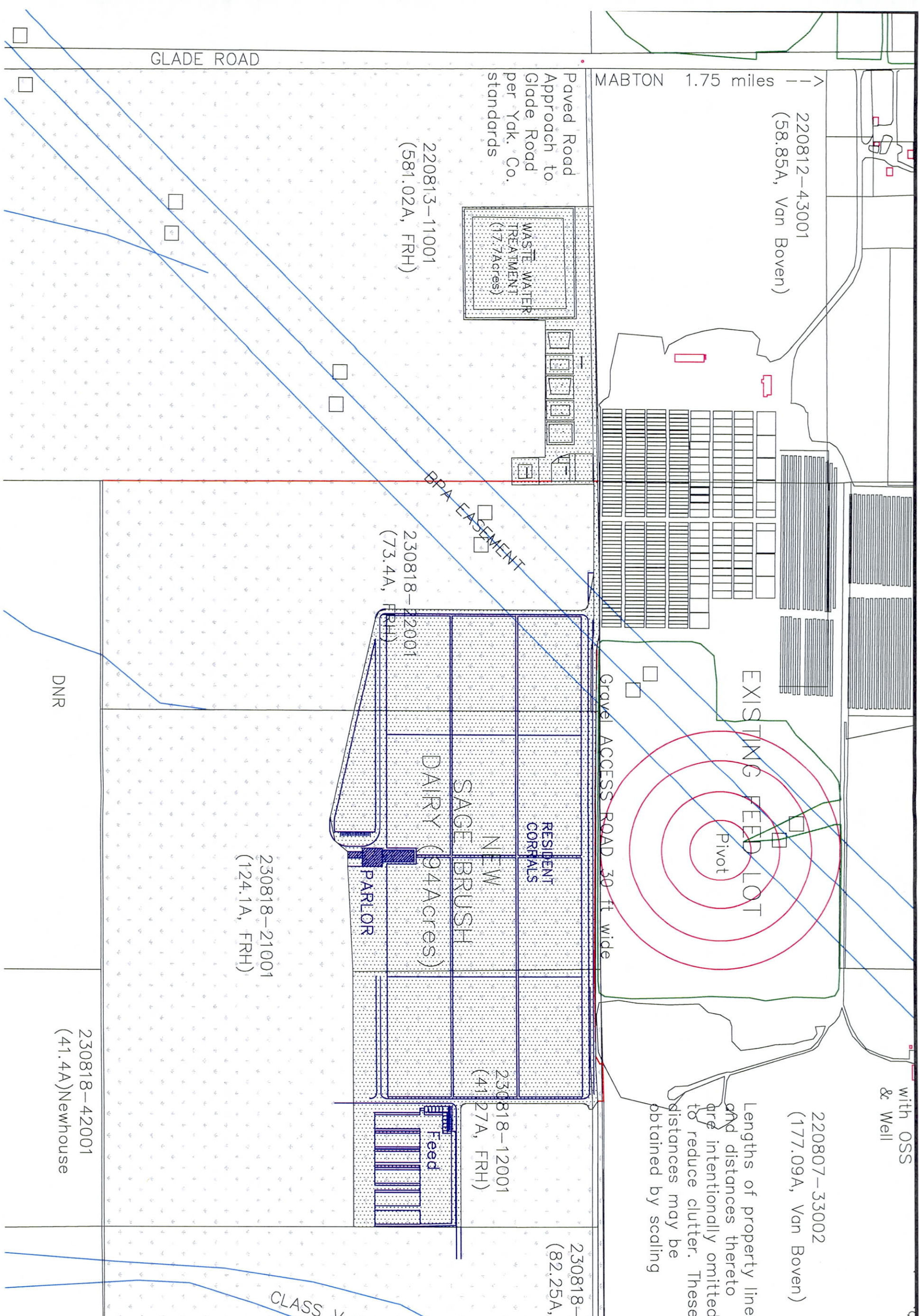


B7 ENGINEERING
 PO Box 487
 1614 Eastway Drive
 Sunnyside Wa, 98944
 (509) 837-8600

SAGEBRUSH RANCH
 B7 Job 18071

Revisions:
 11 Sept 2018
 14 Aug 2018

Sheet:
 1
 Drawn by:
 TWB



Lengths of property lines and distances thereto are intentionally omitted to reduce clutter. These distances may be obtained by scaling

B7 ENGINEERING
 PO Box 487
 1614 Eastway Drive
 Sunnyside Wa, 98944
 (509) 837-8600

SAGEBRUSH RANCH
 B7 Job 18071

Revisions:
 11 Sept 2018
 28 June 2018

Sheet:
 1
 Drawn by:
 TWB



MINIMUM REQUIREMENTS SITE PLAN SUBMITTAL CHECKLIST

FINAL
Revised 10/01/15

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This informational brochure will assist in the preparation of your site plan for project submittal. The minimum site plan information on this page is required. Check the box beside those items that you have included on your site plan. A sample site plan is also included for your assistance. If you need information or assistance please contact the Public Services at (509) 574-2300.

Required Site Plan Information:

1	<input checked="" type="checkbox"/>	Paper size shall be 8.5 x 11 or 11 x 17. If multiple pages, provide an index sheet showing the entire site. Grid paper or picture backgrounds are not acceptable, the map must be reproducible
2	<input checked="" type="checkbox"/>	Blue or Black Ink, in order that they may be photocopied.
3	<input checked="" type="checkbox"/>	North Arrow (north should be pointing to the top of the page)
4	<input checked="" type="checkbox"/>	Legend to include:
	<input checked="" type="checkbox"/>	<i>Owner/Applicant Name</i>
	<input checked="" type="checkbox"/>	<i>Date the Site Plan was drawn.</i>
	<input checked="" type="checkbox"/>	<i>Name, address and telephone number of the person preparing the site plan</i>
	<input checked="" type="checkbox"/>	<i>Tax Parcel Number</i>
	<input checked="" type="checkbox"/>	<i>Standard engineering scale of the drawing (at least: 1" = 200 ft.)</i>
5	<input checked="" type="checkbox"/>	Property line dimensions of all lot(s) involved in the project.
6	<input checked="" type="checkbox"/>	The location, width and purpose of all easements (utility, access and/or irrigation) on the site and adjacent to the site.
7	<input checked="" type="checkbox"/>	Location of new and/or expanded public and private utility infrastructure.
8	<input checked="" type="checkbox"/>	Streets and access easements, with the name, dimensions, type (public or private) and road surface (paved, gravel or dirt).
9	<input checked="" type="checkbox"/>	Location, dimension and design of off-street parking facilities and points of ingress (to) and egress (from).
10	<input checked="" type="checkbox"/>	Location of pedestrian and vehicular circulation patterns, sidewalks, trails and bicycle paths.
11	<input checked="" type="checkbox"/>	Location, shape, size, gross floor area, height and types of all existing and proposed structures, minimum building setbacks from the property lines and other structures, and the total lot coverage.
12	<input checked="" type="checkbox"/>	Location and dimensions of all proposed exterior land uses.
13	<input checked="" type="checkbox"/>	The distance from existing and proposed structures to the centerline of state, county, or private access roads.
14	<input checked="" type="checkbox"/>	Location of structures on the adjoining lots, which may cause compatibility issues.
15	<input checked="" type="checkbox"/>	All major man-made and natural physical features such as railroads, canals, streams, creeks, drainage ditches, hills, depressions, steep slopes, lakes, shorelines, floodplains*, floodways, the 100-year base flood elevations etc. on-site or adjacent to the site. (*Boundaries of the 10 and 25-year floodplain using the flood risk maps as provided by Yakima County as part of a mandatory pre-application meeting.)
16	<input checked="" type="checkbox"/>	Description of the extent to which any watercourse will be altered or relocated as a result of the proposal.
17	<input checked="" type="checkbox"/>	Proposed location and dimensions of community and other open space.
18	<input checked="" type="checkbox"/>	Existing and proposed landscaping, site screening, street trees and stormwater drainage facilities.
19	<input checked="" type="checkbox"/>	Location of well or water systems within 100 feet of the subject property or within a 100 foot well control zone and the distance from any structures within the well control zone.
20	<input checked="" type="checkbox"/>	Proposed contours and grading as they affect lot layout, streets, and drainage ways.
21	<input checked="" type="checkbox"/>	Location of proposed or existing drain field area, extension area, and tank area as well as replacement areas and distances to structures and property lines
22	<input checked="" type="checkbox"/>	Location of adjacent public water, sewer main, fire protection systems and other underground facilities within or adjacent to the development.
23	<input checked="" type="checkbox"/>	Within a UGA, Master Planned Resort or Rural Settlement show the existing topographic contours at intervals of not more than 5' when the ground slopes exceed 10%. Extend 100' beyond the boundaries of the site.



NARRATIVE FORM

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The Narrative Form is designed to help you, the application review, interested agencies, and adjacent property owners to the proposal understand the scope of your project and how your project meets the legal requirements in the Yakima County Codes. You should refer to the appropriate sections of the ordinance when describing your proposal if applicable. You can obtain a copy of the ordinance in our office or access it on the internet at:

<http://codepublishing.com/wa/yakimacounty/>

Narrative Content: Please tell us the “who”, “what”, “where”, and “why” of your proposal. A list of typical content is provided below. **Please do not limit your project’s description to just these items.** In order for us to conduct a timely review of your project please **be as detailed as possible.** Any missing/confusing information could result in the delay of our review.

Note: Not all content listed below will be pertinent to your proposal. These items are suggestions in order to help you draft your narrative.

Suggested Content:

- Describe the current use of the site including all existing structures with their dimensions, square footage and usage.
- Describe the proposed use in detail (including but not limited to the type of business and/or use, hours and days of operation, number of employees, number of people living on-site, maximum number of customers and/or guests, changes or additions to the driveways or other access points, the type of mitigation or adjustment requested).
- Describe which standards are proposed to be adjusted and justify why the standard needs to be adjusted.
- Describe any new or existing structures to be used as part of this proposal.
- Describe how the proposed use will be pertinent to the proposed/existing structures.
- Describe any parking facilities (number of spaces and surface type), landscaping, signage, and lighting that will be associated with your proposal.
- Describe your access to the property and the route of travel to the site.
- For commercial operations describe the travel ways that will be located onsite.
- Describe the timelines for completion of your proposal.

Please remember that your narrative must explain in detail the specifics of your proposal and any missing information may result in the need for future reviews. Your narrative can be typed and printed on a separate sheet of paper with “See Attached” written below, or you may print out legibly your narrative on the lines provided.

SEE ATTACHED

Sage Brush Dairy Descriptive Narrative

Prepared by: B7 Engineering
PO Box 487
1614 Eastway Drive
Sunnyside WA 98944
509-837-8600

B7 job number 18071

Sage Brush Dairy

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Attachments	
(1) Letter, Department of Archeology & Historic Preservation to Laurie Crowe, Jake Veldhuis/Windmill Estates New Feed Lot Project, Dated December 21 2015, 1 page.	
(2) Letter, Department of Fish and Wildlife, to Byron Gumz, Yakima County, WDFW Shrub-Steppe habitat Survey and potential Mitigation Options on Proposed CAFO, Dated January 26, 2016, 3 pages.	
(3) BaramS, et al, Infiltration Mechanism Controls Nitrification and Denitrification Processes Under dairy Waste Lagoons, Journal of Environmental Quality, Sept-Oct 2012, 1 page.	
(4) Davis Pumps & Electric Motors, INC. Well Draw Down Report, 12-31-20115, 2 pages.	

Attention

Dairies and Feedlots are subject to the following RCW regarding sharing of information. If you are providing information to a member of the public make sure you are in compliance.

RCW42.56.610

Certain information from dairies and feedlots limited-rules.

The following information plans, records, and reports obtained by state and local agencies from dairies, animal feeding operations, and concentrated animal feeding operations, not required to apply for a national pollutant discharge elimination system permit is disclosable only in ranges that provide meaningful information to the public while ensuring confidentiality of business information regarding: (1) Number of animals; (2) volume of livestock nutrients generated; (3) number of acres covered by the plan or used for land application of livestock nutrients; (4) livestock nutrients transferred to other persons; (5) crop yields. The department of agriculture shall adopt rules to implement this section in consultation with affected state and local agencies.

[2005 c 510 § 5. Formerly REC 42.17.31923.]

Sage Brush Dairy

Introduction

The FRH Enterprises LLC acquired two dairies, Den Boer, and DeYoung located in the Grandview vicinity. These dairies need capital improvements, but also need sustained operations for the sake of the cattle. This application proposes to build a new dairy on unimproved agricultural land south of Mabton, (Sage Brush Ranch, SBR). When complete, operations at these older dairies will be moved to SBR and the dairy facilities at Den Boer and DeYoung will be demolished and the farm land returned to farm land. This narrative will describe the operation and specific details that are not otherwise presented in the SEPA Checklist and the Conditional Use Permit Application. It will also present arguments supporting the position that this project should be approved.

In 2014 FRH Enterprises purchased 1456.94 acres on 13 parcels in the area east of Glade Road and south of the Sunnyside Irrigation District canal. 1130.69 acres of these parcels are adjoining. On two adjoining parcels 2301817-21001 (160.07 A), and 230808-33001 (35.1 A), After many delays, Frysian Ranch gained approval (SEP2016-0007, CUP 2016-0019) to build a calf yard covering about 30 acres. Construction has started.

The above mentioned acquisitions has identified for consideration a need to build a new high-efficient dairy facility on this otherwise unimproved agricultural land. This facility does not increase the dairy herd size in Yakima County but consolidates operations to gain efficiency using economy of size. There are also gains in efficiency by co-location of facilities.

The two facilities to be consolidated both have about 1000 milking cows, which qualifies them as a Concentrated Animal Feeding Operation (CAFO). This new facility will be built with an ability to add cows as future opportunities to acquire other smaller dairies and milk production base becomes available. Due to its potential size, this facility will be a CAFO, which triggers a SEPA Check List (environmental review) and Conditional Use Permit.

This facility will have corrals, cow shelters, a milking parlor, feed storage, mixing, and distribution facilities, and waste handling facilities. The site is chosen for several compelling reasons:

1. The land is owned by and in control of FRH Enterprises.
2. The land has the proper zoning for a Dairy.
3. The location is relatively remote from general population, reducing public disfavor.
4. The area has 4 other CAFO size operations within 1-1/2 miles, thus making this not a

new nuisance to the area.

5. The depth of the water table is deep enough to claim no threat of contamination, by liquid and solid wastes.
6. The natural ground contours are close those necessary thus reducing ground preparation costs.
7. The adjacent dry-land parcels can be used for waste dispersion.
8. The operation has two associated facilities within 1-1/2 miles, thus improving logistics.
9. Climatic conditions reduce annual waste water inventories.

Operations

This section discusses envisioned operations for the Sage Brush Dairy.

Water Source

The Sage Brush Dairy will draw water from one of two wells under the exempt water use of stock watering purposes from the deep Grande Ronde Aquifer. The agglomerate of adjacent parcels have 4 wells, and two wells will be drilled to pull water from the Grand Ronde Aquifer, estimated depth 1200 feet. These new wells will be the primary source of water. The other wells could be used as a backup supply in the unlikely event of multiple equipment failures. The water will be used for stock watering and related accessory uses. For a herd of 3500 milking cows water usage will be near 210 gallons per minute, 300,000 gallons per day, or 360 acre feet per year. One accessory use will be parlor cleaning.

Yakima County Code YCC12.08.050 requires applicants for a building permit provide evidence of adequate water supply. YCC12.08.010 defines the Yakima County Water Resource System for the domestic water uses and does not address exempt agricultural uses such as stock watering. It is the position of the Sage Brush Ranch that this project is exempt from the requirements of YCC12.08.050.

The four existing wells for this operation are listed in the following table

Year	Well Tag #	Well log #	Size	Depth	Test Capacity	Name
1996	ACE-511	121501	6"	122'	100 gpm	Alberto Molina
1997	ACL-582	122057	6"	157'	23 gpm	Cindy Crawford
2015	BIF-429	1050530	8"	765'	200+ gpm	Fransisca V
2015	BIF-430	1035873	8"	370'	150+ gpm	FRH Enterprises

These four wells draw from three different aquifers, Local shallow, Saddle Mountain and Wanapum. Ultimately there will be six wells from four different aquifers that will provide reliability. One concern of the 2015 Feed Lot Environmental Review was potential drawdown of the deeper Wanapum aquifer. Although the BIF-429 will remain available, its use would only be for extreme conditions, or as directed by water resource authorities. Policy would be to draw from the saddle mountain source before considering the Wanapum source. But with two wells from the Grande Ronde Aquifer use of the Saddle Mountain or the Wanapum aquifers is unlikely.

Another concern of the 2015 review was an increase in water usage and a concurrent reduction of in-stream flows to Yakima River. Ground-water draws in the Yakima Valley are not increased by this new facility because this facility does not increase the cattle populations in Yakima Valley. One can justify claiming that ground-water draws are less due to greater facility efficiency gained by the scale. The point of withdrawal will shift from the wells at the current operations to one the deeper Grand Ronde Aquifer. The water draws from wells at the previous cattle operations will see reductions at least equal to the draws at this new facility.

Whereas the wells at the current operations draw from the Saddle Mountain and Wanapum aquifers, this facility will draw from the deeper Grand Ronde aquifer which has relatively few users. This exempt water usage is not to impact higher seniority water right users. Drawing from the deeper Grand Ronde Aquifer is the least likely to impact other water users. If needed to satisfy water resource officials, ground water withdrawals can follow a protocol dictated by water resource conditions.

For the 2015 review, draw down tests were performed to observe the effect of a heavy draw on the wells. Well ACE-511 was observed to drawdown 18 feet when 61 gpm was pumped. The drawdown came to equilibrium in 90 minutes, the test duration was 28 hours.

Well BIF-429 was also tested. The volume was initially 110 gpm, and equilibrium drawdown of 6 feet was achieved in 90 minutes. The flow was increased to 200 gpm, and drawdown equilibrium was achieved in less than an hour measured at 10 feet. When the test was completed, the well recovered in 10 seconds. The duration of the test was 28 hours.

Both of these test indicate good water transmittance within the water bearing strata. This good water transmittance indicates water withdrawals for this dairy are not going to impact local residential wells.

Nutrient Management Plan

The parent company to SBD has six dairies, each with an updated and approved Dairy Nutrient Management Plan (DNMP). All of these DNMPs share a common plan for dispersion of liquid and solid waste. This global dispersion plan includes solid waste streams from all its cattle operations in the Yakima Valley.

The contents of these DNMPs is confidential, protected from general public dissemination by RCW42.56.610, Certain Information from Dairies and Feedlots Limited-rules.

These DNMPs are based on the number of animal units and accounts for meteorology, soil conditions, and farming practices at the time the DNMP was prepared. Language in the DNMP required that it be amended if the total animal units exceed 110% of the animal units when the CNMP was prepared.

These DNMP describe manure quantities, waste water storage requirements, and field application methods at agronomic rates. Total waste quantities are calculated based on the following factors: herd size, waste water volume, and storm water runoff including runoff from a 24-hour, 25- year storm event.

These DNMPs address three principle nutrients: nitrogen, phosphorus, and potassium. Generally, phosphorus and potassium will precipitate in the soil and become relatively immobile. Potassium is generally not considered a pollutant. Phosphorus pollution is controlled by preventing soil erosion.

Nitrogen sourced from the dairy nutrients is primarily in the form of organic matter. Organic nitrogen is a natural slow release material. The second form of nitrogen is Ammonia in the ion form (NH_4^+) which can bond with multiple soil components rendering it immobile. The third form of nitrogen and the minority component is Nitrate ion (NO_3^-) which is water soluble. It does not bond readily with soil components and with excessive soil moisture will migrate with the moisture below the root capture zone.

Nitrate Nitrogen is the nutrient of most concern, due to its ability to migrate while dissolved in surface waters to ground water aquifers. Relatively recent studies indicate that nitrate migration is halted by a non-saturated vadose zone about 2 feet thick between the nitrate source and the water table. At this proposed site, well logs indicate the vadose zone is about 50 feet thick. One can claim this site is one of the best sites in Yakima County for locating an environmentally friendly dairy.

As a matter of policy and good practice, all three macronutrients are tested at the application fields and these records are inspected by WSDA along with the entire facility on an annual basis. Applications of nutrients are timed to match crop growth and rates to match plant needs, at agronomic rates. Many dairy fields are double cropped in a system with winter triticale as the fall/winter crop, and silage corn or Sudan grass as the spring/summer crop to maximize feed production, nutrient efficiency and nutrient removal.

Specific nutrient tests required include: nitrate-N, ammonia-N, phosphorus (P_2O_5), and potassium (K_2O). Soil testing is conducted bi-annually on all fields, generally in the spring and fall.

The total nitrogen available in the liquid waste depends upon feed mixtures, cleaning water used, and the weather. Testing of the nitrogen concentration in the pond will be addressed in the DNMP. Liquid waste is applied to application fields via irrigation or by tanker at agronomic rates. Solid wastes will be hauled to various agricultural fields listed in the DNMPs and dispersed at agronomic rates or composted and sold as a co-product.

The use of solid animal manure as a nutrient source, generally, benefits the soil better than inorganic salt fertilizers. Manure adds organic matter to the soil, which improves

soil structure, air and water infiltration, and general tilth. Soil erosion is reduced and the moisture holding capacity is increased. Another benefit is that nitrogen and phosphorus are released slowly by action of microorganisms. This benefit conserves these elements and makes them available throughout the year as they are needed for plant growth.

The DNMP will include a listing of land areas designated for application of solid and liquid manure at agronomic rates.

Wastewater Management

Waste water at a dairy comes from three sources: Parlor cleaning, cow urine, and storm water event that exceeds the capacity for soil absorption.

The waste water from parlor cleaning is piped directly to the storage pond. The inflow is estimated to be about 20,000 gallons per day. The pond is sized to provide a great degree of evaporative dispersion of this waste stream. The waste stream will be relatively High BOD due to manure and urine from the wash down of parlor floors. It will also have sanitation chemicals, usually sodium hypo-chlorite based. A pH balancing acid may also be added according to the management protocol of the sanitation product chosen for use.

Usually waste stream from cow urine is negligible due to the soil capacity to absorb it and the high evaporation rate for the area. Climatic conditions can inhibit these dispersion mechanisms to where waste water from cow urine will accumulate and need disposal.

The pond will be sized to collect storm water for the 25 year storm event. Storm water collected from the residential corrals will be contaminated with manure, and will be handled according to the DNMP nutrients. When storm water is collected, the inflow may exceed the evaporative out-flow capacity and contents may need further dispersion by pumping or trucking to dispersion fields.

The waste water pond will have a geo synthetic liner. The design will conform with standards set by the USDA NRCS. The design will likely use a 60 mil liner made from an acceptable material like high density polyethylene.

Waste water due to human sanitation facilities will be processed by an on-site sewer approved by Yakima County Public Health District.

Storm Water Management

The residential corrals will be sited to be higher elevation than waste water facilities so as to enable natural collection and flow to the waste water pond. Before corrals are built, a building platform will be established provide good drainage and surface water collection.

For most storm events the precipitation will be absorbed like a sponge by the bare soil. The soil will later release this moisture by evaporation. The fine particulates in cattle manure has been shown to plug pores between soil particles effectively reducing the effective thickness of the soil to absorb the storm water. Consequently, during colder and wetter conditions surface soil will become saturated and standing water can occur in the corrals before unaffected native soils become saturated. For this reason, the individual corrals will be contoured to easily collect this water and rout it to the collection pond. Paved areas for feed handling, will also be graded to catch basins to collect potential leachate and storm water to be routed to the pond.

Most of the year the evaporative dispersion of water offered by the pond will be keep up the volume the waste streams. In the event of the pond evaporation not keeping up with inflows due to colder or wetter weather, the pond water will be dispersed according to the DNMPs. Most of the storm water falling on the dairy is absorbed by the soil and evaporated.

Sources of off-site storm water are not likely to overwhelming the on-site facilities. The dairy will be located on a high point adjacent to a ravine with a Type 5 stream designation which provides natural drainage for the area. The ravine for this Type 5 stream will be unaffected by this project and continue to be a Type 5 stream. The stream bed will be about 10 feet below the elevations of the residential corrals.

Open Corrals

The Sage Brush Ranch Dairy will be equipped with residence corrals where cows wander freely within the corrals. Each residential corral will be equipped with watering troughs, feeding lockups, cow shades. Manure and urine is distributed throughout the corrals, but there are always areas where manure will accumulated. These accumulations of animal waste usually occur at the feeding alley/lockouts or near watering troughs. Tractors equipped with rubber blades will be used to pull these accumulations to the center of the corrals or to the designated manure drying yards.

Most of the year, manure and urine deposited in the corrals will dry without additional intervention. Accumulated dried manure is scrapped into piles and removed with loaders and trucks, composted on site. Trucks shipping this manure will use private roads on site. There will be no shipping of manure on public roads.

Employee Training

Employees receive training appropriate to their assigned tasks. Employees involved in manure and wastewater management are trained in the relevant procedures and requirements of the Dairy Nutrient Management Plans.

All employees are trained to correct or notify management if they observe conditions requiring corrective action. Areas emphasized in training include storm water management controls, manure and wastewater management controls, fly control, noise control, vehicle track-out prevention, work place safety, and spill prevention control and countermeasures plan.

Nuisance Mitigations

This section addresses perceived nuisances and methods used to mitigate these nuisances.

Water Quality

Water quality as related to this proposal is summarized as two concerns:

1. Prevent contaminated waste water from contaminating ground water.
2. Prevent leachates from solid wastes and feed stocks from contaminating ground and surface waters.

These two concerns are essentially the same but become distinct when viewing the dairy operation; waste water will be handled using methods different than manure (solid waste).

The concern focuses on one contaminate, Nitrate. Phosphate can be a concern for storm water runoff. A discussion of the nutrient mobility is found in the Nutrient Management Plan section. What is often ignored in the discussion is that nitrate is not a noble ion and mechanisms have been identified that decompose nitrate in the vadose zone.

The proposed site has a deep vadose composed of fine textured soils. Well logs indicate the vadose is about 50 (+) feet. The brown clay and brown sand layer varies in depth but there is at least 50 feet before entering a more porous water-bearing sand or gravel layer.

Although more studies are needed, there is evidence that 90-100 percent of the nitrogen compounds can be oxidized and then reduced in the first 2 feet of unsaturated soil. See Attachment (3). At least one soil profile under a decommissioned lagoon in Yakima County has been performed where nitrates were sampled at one foot intervals to 40 feet. This profile indicated a similar claim, that the nitrates are not penetrating the soil.

This deep vadose will prevent nitrate contamination of ground water due to manure handling and waste water storage. Capturing all accumulated storm water from corrals and manure handling areas; and then dispersing it according to the Nutrient Management Plan will prevent contamination of surface waters.

Odor Management

Some odor is a natural part of any cattle feeding operation. Manure production and land application involves manure handling at the storage site, hauling to the application site, and land application. These processes can lead to potential sources of odor.

The prevailing wind is from the west. The first facility directly east of the proposed SBD is a comparable sized dairy. This proposed dairy will be one of eight CAFO operations within 3 miles. This facility will be comparable in size to the others. Four of these CAFO facilities are west of the SBD. This proposed dairy will not add a new nuisance to the area.

The following practices are used to minimize odors:

1. Corrals are kept as dry as possible to provide the least favorable environment for odors and fly pupae (eggs).
2. The disposition of dead animals is accomplished in a sanitary manner and in accordance with all state and local laws.
3. Feed spillage around feed bunkers is kept to a minimum, especially under moist conditions.
4. All animal holding areas are kept clean of excess manure. This provides a less desirable environment for disease organisms to thrive and proliferate.
5. Manure is only applied on days when the wind is relatively calm so that the aerosols and odors are minimized from drifting onto neighboring areas

Since the SBD will not use flushing water, it is a relatively dry operation. The volume of odiferous waste water inventory will be significantly lower than the neighboring dairy to the east.

Storage pond odor is mitigated by stand-off distance from potentially offended people. This stand-off distance reduces concentrations of odorants in the air by dilution and mixing as the air migrates away from the source at the waste storage ponds.

Vector Control

The SBD will use four methods for fly management.

The first method reduces the potential for larvae nurseries in the waste handling area. Weeds along the edge of the lagoons can create pockets ideal for fly larvae. The pond will be lined and this liner will prevent growth of weeds.

The second method targets manure solids to be as dry as possible to reduce the suitability of manure as growth medium for larval development. This also promotes good habitat for fly predator reproduction.

A third point of vector mitigation is distance from potentially offended people. It is also noteworthy that there are six other CAFOs which are comparable in size to his proposed facility within 2-1/2 miles. This facility does not add a new nuisance to the area.

The fourth method is use of feed insecticide feed additives which rendering the manure unsuitable for fly larvae.

Dust Control

The most frequently traveled roadways and cattle walks on the property are covered with gravel or paved.

Fields not in active agriculture will maintain natural vegetation of sage brush, and grasses as ground cover to prevent wind erosion.

Active agricultural fields will have crops as ground cover. Agricultural practices will be chosen to minimize vulnerabilities to wind erosion such as leaving stubble after harvest.

Vehicle Parking

Due to the remote location, vehicle parking must be provided on-site for all employees and visitors. Gravel covered areas will be provided around the buildings used for operations. Trucks delivering commodities or receiving milk, will park adjacent to the delivery site until they are loaded or unloaded.

Vehicle Track-out

Access to SBD will from Glade Road (about 1.0 miles west) or the south end of Christensen Road (about 0.5 miles east). SBD operations will be supported by an on-site system of gravel or paved surfaced roadways. Use of these internal roadways substantially reduces the frequency of operation vehicles entering onto the public roads from the calf yard. The most frequently used internal roadways will be paved. Vehicles leaving SBD will transit at least 1/2 miles on gravel road before access to the paved Glade Road or Christensen Road. This long transit effectively cleans tires to minimize mud from being carried onto public roads.

All conceivable transportation of manure will be done on the internal private gravel roads. Fields intended for spread of manure will not require transit on public roads. In the event of conditions requiring transit on public roads best management practices to prevent or reduce vehicle track out will be observed. The long 1/2 mile plus transits to public roads provide good tire cleaning.

Noise Control

Commodities delivered by truck are intended to be completed between the hours of 5:00 a.m. to 5:00 p.m., Monday through Saturday. No deliveries will be made on Sunday.

Dairy vehicle equipment will be well maintained, including repair and replacement of exhaust systems and mufflers as necessary.

The will not have a public address system or other source of loud outside noise. Employees communicate by radio or cell phone as necessary.

Mitigating noise trespass is good stand-off distance between vehicle and bovine noise sources, and potentially offended local residences. Noise energy emitted and received by potentially offended recipients will be at or near ambient levels.

Glare

The SBD will be equipped with limited lighting for security and after dark operations. Luminaires will be selected with features to stop direct light trespass.

The proposed SBD will not have hard-roof cow shelters like most dairies in the valley. Cloth cow shades will be provided for summer shade.

Reflective glare will be minimized by choosing non reflective surface coatings and selecting roof colors that blend into the environment.

Communications and Complaint Resolution

The Veldhuis family is responsible for communications with neighbors and regulatory agencies, and for responding to any inquiries or complaints.

Other Potential Concerns

The 2015 review of the calf yard project identified two concerns dealing with Yakima Nation cultural resources, and wild life habitat and migration. This section will address these concerns:

Cultural Resources

The Yakima Nation to address their concerns on 6 Nov 2015 in a telephone call and e-mail. No response from the Yakima Nation was been received. Mr Robert Whitlan of the Washington State Department of Archeology and Historic Preservations was also contacted. He indicated that structures on these parcels would not affect known cultural properties. He did add that if something is found, that may have cultural significance to the tribe, that work at the site be suspended, and both the tribe and his office be contacted.

A copy of the letter of response from Mr Whitlam is provided as Attachment (1).

Wild Life Habitat

Comments from the Washington State Department of Fish and Wild Life (WDFW) in the previous application were motivated by not have access to the site to make observations and limited understanding of the scope of the project. An inspection of the site was conducted on 6 January 2016 by Mr. Scott Downes, a biologist with the department. During his site visit and subsequent historical studies of the area, he identified the area as part of a larger intact habitat important to shrub-steppe wildlife species.

As a mitigating compensation for this development, SBR LLC can offer reasonable concessions of land designated a conservation easement.

A copy of his report is provided as Attachment (2).

Compatibility with Neighboring Land Uses and Critical Areas

This proposal transfers what many people perceive as a nuisance land use to a more remote location. This proposed new dairy will be less visible to those offended by these operations than the current operations.

The location is undeveloped farm land without water rights. Adjacent land uses east, west, north, and south are compatible with this proposed dairy, all zoned AG. There are no track housing developments within 2 miles. The nearest urban center is the City of Mabton, about 1-3/4 miles northwest with several hundred residences within a square mile. There are 5 residences not associated with SBD within 1/2 mile. There are about 30 residences within 1 mile. All of these residences appear to be hobby farms. Within 3 miles are seven other CAFOs. The closest is the Van Boven Calf Yard adjacent and north. The Mensonides Dairy is located about 2 miles east. Veldhuis Dairy located about 2 miles north east. The Sunny Dene North Dairy is located about 2 miles west and the Hidden Valley Dairy and Sunny Dene South Dairy located about 2-1/2 miles west.

The Yakima Critical Area Map (Yakima County GIS Mapping) identifies no wet lands or critical areas on the SBD site. There is one Class 5 streams on the south end of one of the affected parcels, and two Class 5 streams on adjacent parcels to the east and west. These streams path ways will remain. There is no identified reason to alter these Class 5 streams.

Relevant sections of the zoning ordinance are quoted below, with notations as to the proposal's consistency.

The parcels that compose the dairy are zoned "Agricultural, (AG)":

15.11.010 Purpose. The Agriculture (AG) Zoning District is intended to preserve and maintain areas for the continued practice of agriculture by limiting the creation of small lots, permitting only those new uses that are compatible with agricultural activities, protection of agricultural lands of long-term commercial significance, and providing measures to notify and separate especially sensitive land uses from customary and innovative agricultural land management practices. (The proposal expands the facilities of an existing agricultural operation, helping to ensure the continued practice of agriculture through improving viability of the operation. The remote nature of this farm provides the intended separation of an especially sensitive land use (CAFO) from the customary use of residential. It would not introduce any new use incompatible with other agricultural activities). The specific intent of this zoning is to:

- (1) Implement the comprehensive plan which calls for the preservation of agricultural lands; (*This parcel of AG land without water has very few practical uses in agriculture. This proposal puts to use otherwise non-productive agricultural parcel.*)
- (2) Provide a zoning district to protect, stabilize and enhance the land base devoted to, or important for, the long-term commercial production of agricultural goods in Yakima County and to protect the best agricultural areas from conflicting uses and influences; (*This proposal will*

effectively increase the land base devoted to agriculture production, and will release previously used land for higher agricultural uses/production.)

(The remaining intent provisions of the zoning ordinance do not pertain to the proposal.)

The only Policy of the Comprehensive Plan that is relevant to the proposal is LU-ER-AG 1. "Encourage conservation of the County's high quality agricultural lands for productive agricultural use and protect the opportunity for these lands to support the widest variety of agricultural crops."

The proposal is consistent with this provision and other policies of Comprehensive Plan 2015 last amended 2007. The existing dairies are a productive agricultural land use, has many employees, and a multimillion dollar operating budget, thereby contributing significantly to the local economy. The proposed dairy will help the entire operation enhance efficiency with economic and environmental resources consistent with the County's goals of preserving productive agricultural lands and protecting farmers from nuisance complaints and lawsuits.

Attachment (1)



Allyson Brooks Ph.D., Director
State Historic Preservation Officer

December 21, 2015

Ms. Laurie Crowe
South Yakima Conservation District
200 Cheyne Road PO Box 1766
Zillah, Washington 98953

Re: Jake Veldhuis/Windmill Estates New Feedlot Project
Log No.: 122115-18-WSCC

Dear Ms. Crowe:

Thank you for contacting our department. We have reviewed the information you provided for the proposed Jake Veldhuis/Windmill Estates New Feedlot Project, Mabton, Yakima County, Washington.

We concur with the determination the proposed project will have no effect upon cultural properties.

We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive.

In the event that archaeological or historic materials are discovered during project activities, work in the immediate vicinity must stop, the area secured, and the concerned tribe's cultural staff and cultural committee and this department notified.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in compliance with Executive Order 05-05. Should additional information become available, our assessment may be revised, including information regarding historic properties that have not yet been identified. Thank you for the opportunity to comment and a copy of these comments should be included in subsequent environmental documents.

Sincerely,

Robert G. Whitlam, Ph.D.
State Archaeologist
(360) 890-2615
email: rob.whitlam@dahp.wa.gov





ATTACHMENT (2)
1/3

State of Washington
DEPARTMENT OF FISH AND WILDLIFE
South Central Region • Region 3 • 1701 South 24th Avenue, Yakima, WA 98902-5720
Telephone: (509) 575-2740 • Fax: (509) 575-2474

January 26, 2016

Byron J. Gumz
Yakima County Public Services, Planning Division
Senior Project Planner, Environmental and Natural Resources Section
128 North Second Street
Fourth Floor Courthouse
Yakima, Washington 98901

Subject: WDFW Shrub-steppe habitat survey and potential mitigation options on Proposed Concentrated Animal Feeding Operation (CAFO) for Wind Mill Estates

Dear Mr. Gumz:

Below is a summary of the habitat assessment that I made of the proposed site in January 2016. This letter summarizes the steps that WDFW requests of the applicant going forward to meet for our shrub-steppe habitat concerns over the site.

Background

Washington Department of Fish and Wildlife (WDFW) originally commented on an EIS scoping in August 2015 for the proposed Wind Mill Estates Concentrated Animal Feeding Operation (CAFO) that we had habitat conversion concerns over the proposed project. Following those initial comments, WDFW has learned that the applicant has scaled back the proposal and has located all planned facilities to the northern edge of the site, reducing the sprawl of the footprint to the south towards existing unconverted shrub-steppe habitat.

The application has stated to WDFW that the current revised footprint of the proposed project is 40 acres. These 40 acres sits south of the Mabton West Lateral Canal and lies at the base of the Horse Heaven Hills southeast of Mabton. The entire 40 acres would be converted into developed area and result in loss of shrub-steppe habitat. The parcel is part of mapped priority shrub-steppe habitat shown on the WDFW Priority Habitats and Species (PHS) page: <http://wdfw.wa.gov/conservation/phs/>. A brief map showing the landscape and its mapping under PHS is included as an attachment to this letter. The landscape on which the site sits qualifies under the Yakima County Critical Areas Ordinance of:

“Upland Wildlife Habitat Conservation Areas (YCC Title 16C.11)

Upland Wildlife Habitat Conservation Areas (UWHCA) are areas within the county where state or federally designated endangered, threatened, or sensitive species have a primary association. Developments proposed within UWHCA may require a habitat assessment if it is determined that the development proposal could impact the UWHCA. The County relies on existing large lot

zoning districts to protect existing blocks of upland habitat and keep human pressure on animals low. The County also relies on existing State and Federal wildlife habitat programs.”

Though the department makes an attempt to map areas of important habitat and species associations through the WDFW PHS system, not all upland habitat areas of importance for connectivity or association with sensitive species are mapped. The county relies on WDFW habitat biologists to determine the value of the land in question and to make assessments of the habitat's worth.

I made a habitat assessment of the site in January 2016 through a site visit on January 15, 2016 and review of additional office resources including soil maps and historical aerial imagery of the site. This habitat assessment outlined below allowed WDFW to clarify our position regarding habitat concerns and potential steps for habitat mitigation.

Habitat Assessment of the Proposed Site

I toured the site on the afternoon of January 15th with the applicant and found that the sagebrush of the site had been mowed recently, either in 2014 or 2015. The habitat assessment was limited to the proposed footprint of the proposed development and a small (perhaps 100 yards) buffer around the west and south side of the proposed footprint. Thus, habitat quality had been reduced but the ground has not been plowed or converted. A few sagebrush plants were still growing though even these plants no longer had structural habitat value due to being mowed to near ground level.

Wildlife evidence was limited to fresh deer scat which was frequently noted on the parcel indicating that the land was still being used by mule deer. A few isolated burrows of small mammals were noted, but none appeared to be of the quality that Townsend's ground squirrel would likely use if they were present within the footprint of the site. Horned lark, a bird of the grassland and shrub-steppe environment was also noted on the site. This was not the time period (January) when most wildlife is active but did allow me to determine habitat potential of the site.

In conjunction with the site visit, landscape maps showing aerial imagery and soil maps were consulted. Soils listed in the USDA NRCS Soil Survey for the site are a series of silt loams that are well drained and listed as at least 80 inches to restrictive bedrock. During the site visit, some scattered rocks were found on the surface indicating that the soil depth may not be consistent across the entire site, but most of the site is deep soil shrub-steppe habitat. Aerial imagery from May of 2015 indicated that while the current site may be mowed, the area is still part of a larger intact habitat that is important to shrub-steppe wildlife species, and if left unconverted and without continued mowing the site has the potential to return to habitat that a suite of State Candidate wildlife species may use including but not limited to Black-tailed Jackrabbit, Townsend's Ground Squirrel, Burrowing Owl and Loggerhead Shrike. As referenced above, the habitat continues to be used by mule deer.

WDFW Requested Steps to Achieve Habitat Mitigation for the Site

While the site has been mowed, it has not been converted to developed ground and further development of the site would lead to a reduction of shrub-steppe habitat, in particular deep soil shrub-steppe habitat that is critical for many shrub-steppe wildlife species that currently are

candidates for listing due to declines in this habitat in the Columbia Basin. Thus to compensate for these habitat losses, WDFW typically requires habitat mitigation to ensure that the net amount of shrub-steppe is not lost in the area. Our agency standard for shrub-steppe has been a 2:1 ratio where the applicant is responsible for mitigating losses at 2 acres of comparable habitat for every 1 acre that is converted from shrub-steppe habitat.

WDFW is requesting this 2:1 ratio for habitat mitigation concerns for the proposed Windmill Estates project. Thus, under the proposed 40 acre footprint the habitat mitigation would be 80 acres of comparable deep soil shrub-steppe habitat. This ratio is deemed appropriate based upon the site potential if no further conversion or mowing of the habitat is conducted. Habitat mitigation can be accomplished in a number of ways including working with WDFW to purchase habitat of comparable or better value in the general area or if an appropriate option for conservation easement exists on the applicant's land that can also be a possibility. Typically habitat purchases or conservation easements are most desired adjoining to tracts of intact habitat and in particular public lands that are secured from habitat conversion where they can be used by wildlife in the greater landscape context. Conservation easements would likely require some habitat restoration if the targeted lands were also mowed and would likely include stipulations to manage the land against weeds and keep cattle grazing off of the habitat. There are parcels of Department of Natural Resource (DNR) land in the immediate area and joining habitat mitigation options directly adjacent to those lands would be a sound strategy.

The 2:1 ratio is a general guideline, and comes with some flexibility. If a conservation easement could be arranged along with habitat restoration, it is possible that a slightly lower ratio of 1.5:1 might be possible. Details will need to be worked out with WDFW staff if habitat mitigation is pursued for this project. WDFW does not believe there is a high likelihood of sensitive wildlife occupying the site in its current mowed condition and is not requiring a wildlife survey as requested in the original scoping comments dated August 2015. Provided that the applicant keeps the converted habitat to the currently proposed 40 acres, does not plan to convert additional habitat to further reduce the shrub-steppe habitat to the south and works with WDFW on habitat mitigation at the suggested ratios listed above, WDFW will not oppose the building of this project over habitat conversion issues.

These are the steps that will satisfy WDFW habitat concerns if the applicant and Yakima County planning division decide to proceed with development of the project. We look forward to working with the applicant on habitat mitigation for this project. If you have questions regarding any of the above comments, please contact me at 509-457-9307.

Sincerely,



Scott Downes
Area Habitat Biologist

Cc: Brent Renfrow, WDFW
Perry Harvester, WDFW

PubMed

ATTACHMENT (3)

Abstract

J Environ Qual. 2012 Sep-Oct;41(5):1623-32. doi: 10.2134/jeq2012.0015.

Infiltration mechanism controls nitrification and denitrification processes under dairy waste lagoon.

Baram S¹, Arnon S, Ronen Z, Kurtzman D, Dahan O.

Author information

Abstract

Earthen waste lagoons are commonly used to store liquid wastes from concentrated animal feeding operations. The fate of ammonium (NH) and nitrate (NO) was studied in the vadose zone below earthen-clay dairy farm waste lagoons using three independent vadose zone monitoring systems. The vadose zone was monitored from 0.5 to 30 m below land surface through direct sampling of the sediment porewater and continuous measurement of the sediment profile's water content variations. Four years of monitoring revealed that wastewater infiltration from the lagoon is controlled by two mechanisms: slow (mm d), constant infiltration from the lagoon bed; and rapid (m h) infiltration of wastewater and rainwater via preferential flow in desiccation cracks formed in the unsaturated clay sediment surrounding the lagoon banks. The preferential flow mechanism is active mainly during wastewater-level fluctuations and intensive rain events. The vadose zone below the waste sources remained unsaturated throughout the monitoring period, and all infiltrating NH was oxidized in the upper 0.5 m. The NH oxidation (nitrification) was coupled with NO reduction (denitrification) and depended on the sediment water content, which was controlled by the infiltration mechanism. Coupled nitrification-denitrification (CND) resulted in 90 to 100% reduction in the total nitrogen mass in the vadose zone, with higher removal under high water content (~0.55 m m). Mass balance of nitrogen and isotopic composition of NO indicated that CND, rather than cation exchange capacity, is the key factor regulating nitrogen's fate in the vadose zone underlying earthen waste lagoons.

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PMID: 23099954 [PubMed - indexed for MEDLINE]

Publication Types, MeSH Terms, Substances

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DAVIS PUMPS & ELECTRIC MOTORS, INC. ATTACHMENT (4) 1/2

2500 Mabton-Sunnyside Hwy. P.O. Box 566 Sunnyside, Wa. 98944 509-837-5303 (FAX 836-2000)

WELL LOCATION:

Open Land west of
620 Christenson Rd.
Mabton, Wa.

EQUIPMENT USED: 20 hp Submersible
pump, Flow meter, Sonic Depth
finder

LAND PARCELL# 23080833001

STATIC WATER LEVEL: 220'

CASING SIZE: 10"

DEPTH OF WELL: 370'

DATE	HOUR	PUMPING LEVEL(ft.)	DRAW DOWN (ft.)	VOLUME GPM	REMARKS: WATER CONDITION, TEMPERATURE, HARDNESS, DIRTY, CLEAN, DISCOLORED, ETC.
12-30-2015	Start	220'	0	0	New well - water
	8:15	220'	0	110	started out murky
	8:45	226'	6'	110'	and Grey. Cleared
	9:15	226'	6'	110	up in 20 minutes.
	9:45	227'	7'	150	Opened Gate Valve up
	10:45	230'	10'	200	to see if well would
	11:45	230'	10'	200	draw down. Very little
	4:45	226'	6'	110	Level change from 100GPM
12-31-2015	8:15	226'	6'	110	to 200 GPM. Well recovered
	12:15	226'	6'	110	in under 10 seconds

2/2

DAVIS PUMPS & ELECTRIC MOTORS, INC.

2500 Mabton-Sunnyside Hwy. P.O. Box 566 Sunnyside, Wa. 98944 509-837-5303 (FAX 836-2000)

WELL LOCATION:

620 Christerson Rd.
Mabton, Wa.

EQUIPMENT USED: Existing 5hp well
pump, Flow meter, Sonic Depth
Finder

LAND PARCELL # 23080843001

STATIC WATER LEVEL: 58'

CASING SIZE: 6"

DEPTH OF WELL: NA

DATE	HOUR	PUMPING LEVEL(ft.)	DRAW DOWN (ft.)	VOLUME GPM	REMARKS: WATER CONDITION, TEMPERATURE, HARDNESS, DIRTY, CLEAN, DISCOLORED, ETC.
12-30-2015	Start	58'	0	0	Test was done
	8:30	58'	0	63"	
	9:00	72'	14'	61	at 40 psi.
	9:30	75'	17'	61	Water was clean.
	10:00	76'	18'	61	No Sand.
	11:00	76'	18'	61	
	12:00	76'	18'	61	
	5:00	76'	18'	61	
12-31-2015	8:30	76'	18'	61	
	12:30	76'	18'	61	