

4.14
SITE SPECIFIC LAND APPLICATION PLAN
FOR LINCOLN CREEK UNIT

This Plan is a component of Fire Mountain Farms, Inc. Application for Coverage Under the General Permit for Biosolids Management Permit No. BT9902

Location:

Site Addresses (General Location):	1688 & 2240 Lincoln Creek Road Centralia, WA 98531
GPS Coordinates of Site Entrances:	Lat 46° 44' 50.76" N, Long 123° 09' 42.5" W Lat 46° 44' 08.71" N, Long 123° 12' 21.23" W
Sec, Twp, Rge:	Sec 32, 34 & 35, Twp 15N, Rge 04W, WM Sec 3 & 5, Twp 14N, Rge 04W
Water Resource Inventory Area:	23
County:	Lewis

Table of Contents

Introduction..... **Error! Bookmark not defined.**

1.0 Ownership, Management, and Landowner Agreements..... 3

2.0 Past Biosolids Use..... 3

3.0 Maps..... 3

3.1 General Location Map 4

3.2 Site Map or Field Map..... 4

3.3 Soils Map..... 4

4.0 Seasonal and Daily Timing of Biosolids Applications 4

5.0 Biosolids Staging and Storage..... 5

6.0 Cropping Practices and Livestock Management..... 6

7.0 Other Nutrient Sources and Soil Amendments..... 7

8.0 Methods of Application..... 8

9.0 Determining and Validating Application Rates..... 9

 9.1 Determining the Plant Available Nitrogen Requirement..... 10

 9.2 Calculating the Application Rate..... 11

 Proposed application rates with anticipated application after September 15th shall not exceed application rates recommended per an appropriate fertilizer guideline.
 **Error! Bookmark not defined.**

 9.3 Verifying the Application Rate..... 11

10.0 Sampling Plan 12

 10.1 Soil Sampling 12

 10.2 Biosolids Sampling and Analysis..... 13

 10.3 Pathogen Reduction 13

 10.4 Trace Elements 14

 10.5 Vector Attraction Reduction Standard..... 14

11.0 Septage Pathogen and Vector Attraction Reduction options..... 14

 11.2 septage will be surface applied then incorporated in to the soil within 6 hours
Error! Bookmark not defined.

 11.3 The septage will be stabilized by raising the PH to ≥ 12 and held for at ≥ 12 for 30 min (If this plan is used a Sampling and Analyses plan will be submitted) ... **Error! Bookmark not defined.**

12.0	Groundwater Protection Plan	15
13.0	Erosion Control Plan	15
14.0	Noxious Weed Plan	15
15.0	Restricting Site Access	16
16.0	Recordkeeping.....	16
17.0	Additional Information	16

1.0 Ownership, Management, and Landowner Agreements

Owners are as listed below.

Owner	Parcel(s)	Zoning
Thode, Robert J. 856 Burnt Ridge Road Onalaska, WA 98570	024235002000 024256003000	ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands
Widell Properties, LLC c/o Trisha Geist 1827 Lincoln Creek Road Rochester, WA 98579	242380030000 242590000000 242440000000 242450000000 242480010010 24248001003	ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands ARL – Agricultural Resource Lands

Parcels are owned as listed in the above table. Site management for these sites is performed by Robert and Martha Thode.

See Appendix 1 for signed agreements from landowners (as distinguished from a lessee, farmer, or others entitled to use the land) that acknowledge the applicability and requirements of Chapter 173-308 WAC when their property is used for biosolids land application or storage.

2.0 Past Biosolids Use

Class A and B biosolids have been applied to this site. Class B biosolids were last applied in 2014 and class A biosolids were last applied in 2019. No biosolids have been applied to this site that did not meet WAC 173-308-160 (3) (Table 3) for pollutants. The amount of biosolids applied to this site in the past may be found in the previous year's Biosolids Annual Reports for Fire Mountain Farms, Inc.

3.0 Maps

Mapping units will designate Fire Mountain Farm's area of biosolids land application. These maps denote both site and setback boundaries (road and property line) as well as anomalies (e.g. swales, slopes >25%, physical barriers, etc.). Fire Mountain Farms site application maps will show staging/stockpiling locations, site acreage, site name, common name for site, and other identifying characteristics for each site. Maps are located in Appendix 2 of this plan.

3.1 General Location Map

Appendix 2.A – Vicinity Map

Appendix 2.B –Haul Route Maps not used

3.2 Site Map or Field Map

Appendix 2.C – Aerial Overview of Site, Field Identification Map

Appendix 2.D – Residences, Wells, Roads, Accesses, Staging, Signage
Surface Water, Wells,

Appendix 2.E –

Appendix 2.F –

Appendix 2.G – Zoning Map

Appendix 2.H – Topographic Map

Appendix 2.I – Flood Zone Map

3.3 Soils Map

Appendix 3 – Soils Report (includes site soils map)

4.0 Seasonal and Daily Timing of Biosolids Applications

Biosolids applications at this site are limited yearly from March 1st until October 31st. Fire Mountain Farms may request approval from Ecology to proceed with land application activities outside of these dates. An extension may be granted by Ecology for application at no greater than one-week intervals. (Requests will be sent to Ecology 7 calendar days ahead of application outside of dates. Ecology will respond within 7 calendar days. Application to the site outside of the above dates will be at the discretion of Ecology personnel. Depth to ground water may also delay the application window (see section 12. From a practical standpoint, applications will normally occur during daylight hours and operations usually do not occur on weekends or holidays. There may be occasions where deviation from the normal schedule will be required, such as the need to apply biosolids so that a subsequent crop may be planted in a timely manner prior to rain or adaption to neighbor's requests. FMF will consult Manure Spreading Advisory (MSA) and Northwest River Forecast Center (NRF) through NOAA to mitigate risk of surface runoff. FMF will only spread biosolids if the MSA rating = Low Risk and the NRF shows no chances of flooding within 10 days of application

Fire Mountain Farms will consider and consult on written requests from neighbors if biosolids application procedures pose a likelihood of conflicting with planned activities. There are no known special events in this area that biosolids activities could impact.

4.1 Buffers

Buffers will be marked (i.e. flags) so they are easily visible during application. Surface water buffers will be increased to 150% of what is reported in the table below when the potential for run off is heightened in early spring applications, (March 1st to April 1st), and late fall after October 1st.

Type	Buffer in Meters
Well	30.5
Residence	30.5
Wetland/ Creek	10
Un-delineated Wetland	30.5
Public roadways	2
Property boundary	2

5.0 Biosolids Staging and Storage

The staging area for biosolids is a 4-foot deep concrete pit where trucks unload. The pit slopes downward from the point where biosolids are initially off-loaded. Any rainfall that may occur during operations stays in the pit and is mixed with the biosolids prior to land application. At no time will any precipitation that comes in contact with staged biosolids be allowed to runoff from the pit. With Ecology approval and the proper permits, a covered concrete storage structure may be proposed for this site . The current staging area may also be moved with Ecology approval.

Access to this site is through a locked gate and will be restricted by informational signs that are shown in Appendix 5 of this plan. To insure that drivers, follow procedures Fire Mountain Farms has printed instruction sheets describing biosolids offloading procedures. These instruction sheets are sent to all biosolids suppliers. New drivers to the site are walked through these procedures. A triple check system is in place to assure all loads are accounted for: First, all loads are to be scheduled with the Operations Office prior to delivery. Second, all sources have been supplied numbered Delivery Tickets (these are numbered sequentially and if a number is missing, Fire Mountain Farms investigates what happened to it). See Appendix 6.C of this plan for an example. Third, all deliveries are recorded on "Delivery Record Sheet" at sites. See Appendix 6.D for an example.

Biosolids are applied as they are delivered to this site or will be placed in storage unit. Most often biosolids are applied from single sources however sometimes

may be incorporated if from: de-watered blended sources. Application rates are calculated based on the highest nitrogen material. Application rates will be recalculated when biosolids are of a liquid consistency or when they contain significantly lower nitrogen concentration levels than what is normally delivered. Nitrogen content will be tested for blended biosolids before incorporation.

Agronomic rates for an application site shall be calculated and approved prior to storing biosolids onsite unless Ecology has specifically granted storage approval in advance of an approved agronomic rate.

6.0 Cropping Practices and Livestock Management

Acreage and Number of Fields:

Field Acreage:

Field Name/No.	Acreage	Crop	Alternative Crops
LC1-1	3.98	Hay	Small grains, Timber
LC1-2	9.32	Hay	Small grains, Timber
LC1-3	1.67	Hay	Small grains, Timber
LC1-4	46.58	Hay	Small grains, Timber
LC1-5	8.81	Hay	Small grains, Timber
LC1-6	16.03	Hay	Small grains, Timber
LC1-7	4.48	Hay	Small grains, Timber
LC1-8	6.52	Hay	Small grains, Timber
LC19	2.59	Hay	Small grains, Timber
LC1-10	1.34	Hay	Small grains, Timber
LC1-11	2.76	Hay	Small grains, Timber
LC1-T1	6.55	Fir 1995	Grain & Hay
LC1-T2	33.43	Fir,2003	Grain & Hay
LC1-T3	75.7	Fir,2012,2014	Grain & Hay
LC1-T4	3.63	Fir,2005	Grain & Hay
LC1-CRP-1	19.62	Mixed trees 1997,2012,2017	Grain & Hay
LC1-CRP-2	26.57	Mixed trees 1997,2012,2017	Grain & Hay
Total	269.58		

Crops may change to any food, feed, fiber or fuel crop as markets and other factors change.

Total Acreage:

Parcel Number	Acreage
24235002000	4.48
24256003000	68.2
24238003000	34.25
24259000000	80
24244000000	38
24245000000	1
24248001001	35.79
24248001003	3.75
24238002000	0.94
Total	266.41

Pasture and Hay

Cropping practices vary across this unit. The flat valley fields are planted in crops such as hay or small grains. The lower valley fields that are more likely to flood are normally planted in perennial grass for hay and silage. The upper valley fields that are unlikely to flood are planted in small grains such as oats, barley or wheat. Sloping fields that ascend from the valley floor are either used for pasture or timber. The livestock are not allowed grazing access to the fields for a minimum of 30 days from last date of biosolids application. When pasture grasses are growing optimally, there is generally 45 days between the periods when cattle are removed from a field until the crop is ready to be grazed again. Typical Grass production is 3 to 5 ton unirrigated.

Timber

- Douglas Fir planted 1980 to 2017 on a 40-60 or 10 yr rotation. Cottonwood planted 1995 mix of native trees planted 2002 on a 45 to 60 yr rotation
- This timber has not been thinned the Douglas Fir will be thinned as needed, the cotton wood and Native trees should not need thinning
- Current undergrowth is light brush to grass that is grazed by the elk & deer

7.0 Other Nutrient Sources and Soil Amendments

Pasturing cattle does return some nutrients to the soil. This addition of nutrients is taken into account when determining biosolids application rates and records will be kept. Additional Nutrients are added in to Pacific Northwest Extension Publication PNW0511e (aka The Cogger/Sullivan Worksheet) when calculating application rates. Livestock nitrogen return from grazing is figured using Animal

month units (AMU). Average nitrogen return was determined after discussions with Lewis County Conservation District and WSU.

Lime may be applied to this site as a soil amendment. This addition of lime acts to bring the soil-pH into a range that supports optimal pasture growth. Other products may be used to supplement biosolids application when needed. For example, biosolids is low in potassium and cobalt or soil may need supplements to adjust soil pH for optimal plant growth. This is further addressed in Section 9.2 on calculating application rates where all nutrient and soil amendments will be accounted for. Additional organic or inorganic Nitrogen applications, including pasture application from the cattle will be submitted with agronomic rate biosolids application request.

8.0 Methods of Application

Fire Mountain Farms has a wide variety of application equipment and methods for field applying biosolids. Some of the equipment is very specialized (such as the timber application setup liquid nozzle controlled by an operator at the gun) and others are more common in typical agricultural production. Land application of biosolids will be conducted with equipment that is suitable for the site and also for the material being land applied. Land incorporation of blended de-watered biosolids will be conducted with equipment that is suitable for the land and material being utilized. Land application methods will provide for an even and consistent distribution in accordance with the calculated application rate (see Subsection 9.2). Quality management of biosolids requires the flexibility to adjust to various site conditions (such as crop conditions, soil conditions, type of biosolids, weather, time frame).

Equipment that may be used includes:

- Rear- and side-discharge manure spreaders for dewatered biosolids.
- Liquid tank spreaders
- Spray irrigation equipment for liquid biosolids.
- Drag hose systems for liquid biosolids.
- Other equipment as approved by Ecology.

Specific buffers may be larger than minimums if deemed necessary and are shown on attached map. These buffers will not generally change with application method. However, from a practical standpoint, some methods of application will require increased setbacks (setbacks are an area outside the buffer that may receive some biosolids but not a full application to ensure that no biosolids enters into the buffer area). Setbacks are variable to conditions and will be set by operator at time of application. For example, using a "big gun" (a sprinkler-type system designed to apply liquid materials) could require the setback of an additional distance if wind is determined to be an operational concern. Compliance may also be met on a calm day by stationing a crew

member in the field to closely monitor the operations and maintenance of setbacks. Additionally vegetated areas may also be used to protect sensitive areas from biosolids. Fire Mountain Farms considers the method of application to be less of a factor in the setting of buffers than other aspects such as field slope, type of vegetation, permeability of soil and sensitivity of buffered areas.

Currently Fire Mountain Farms has the following equipment:

For de-watered biosolids:

- Knight side slingers (5)
- Meyers rear discharge
- Big A with FarmCo box
- John Deere hydro push

For liquid applications:

- Truck spread with splash plates
- Houle 7300-gallon tank spreader
- Nuhn 5000-gallon tank spreader
- Terragator 4000-gallon tank spreader
- Hard hose reel (2)
 - With big gun
 - With 120ft spray bar
- Drag hose system
 - With airway aerator
 - With sod injector
 - With 7-shank injector
 - With splash plate

The preferred method of land application on this site is to use tank spreaders or drag hose for liquid and the Knight or Meyer spreaders for de-watered material. The method of application will be matched with the type of biosolids being delivered, crop and soil conditions. For example, the 7-shank injector is only usable with liquid biosolids being applied to annual crops, whereas the Meyer works best for very dry biosolids (40%+). Another example is a Terragator can be accurate with application to get in to areas and apply where as a big gun covers 300ft. For cake material the rear discharge spreaders are a much tighter spread pattern for than the side discharge to spread smaller areas.

When biosolids must be incorporated to meet the vector attraction reduction (VAR) standard for Class B biosolids, one of the following methods will be used:

- Injection with drag-hose system
- Incorporation with tillage tool such as a disk harrow

9.0 Determining and Validating Application Rates

The subsections below detail the process to set desired nitrogen levels for a given crop, determine how much nitrogen is available in biosolids being applied, and how to calculate volume of biosolids to apply to a given field.

Ecology reserves the right to exercise professional judgment when evaluating proposed application rates and the site suitability so as to ensure biosolids rule requirements and the goals and objectives of this plan are met.

9.0.1 Timber Area

Timber application area will be calculated using road length multiplied by spread width of the used application method. Example 1000 ft. road Knight side slinger and 90 ft. coverage

$$1,000 * 90 = 90,000/43560 = 2.07 \text{ acres.}$$

9.1 Determining the Plant Available Nitrogen Requirement

Agronomic rates for biosolids application will be determined using one or a combination of the following methods:

- Recommendation of professional agronomist or forester.
- As prescribed in farm plans on file with appropriate County Conservation Districts.
- As recommended by Washington State University (WSU) Cooperative Extension guidance.
- Production estimate based on potential of soil as determined by NRCS Soils Surveys, WSU or other Cooperative Extension guidance.
- As determined by actual production data using WSU rates per production unit or the following formula. Calculation of nitrogen requirement for crop production such as hay or pasture will be as follows:

$$\text{Dry matter yield (DmY)} \times (\%N) = \text{N-uptake}$$

$$(\%N) = \text{Crude Protein}/6.25$$

Example:

$$\text{DmY}=4500 \text{ lb, Crude Protein}=18.75\%, \%N=18.75/6.25=3\%$$

$$\text{N-uptake}= 4500 \times .03 = 135 \text{ lb nitrogen utilization}$$

- Rates will be adjusted as indicated by biosolids nutrient data, soil sampling and post-harvest soil nitrate testing. Record of past production is the preferred method, but when that is not available (i.e., new site or new crop), Fire Mountain Farms will base application rate on the best available recommendation. Biosolids application rates will be calculated using Washington State Department of Ecology's Best Management Guidelines (#93-80, Revised July 2000). The Fire Mountain Farms Application Report

(see Appendix 6.A of this plan) will be used to record and document application rates.

9.2 Calculating the Application Rate

Biosolids application rates are calculated using Worksheet for Calculation Biosolids Application Rates in Agriculture (PNW0511e), Excel spreadsheet based off of PNW0511e (aka Cogger/Sullivan Worksheet). See Appendix 7.A of this plan for an example. This spreadsheet allows input values for previous applications of biosolids, ammonium retention, and mineralization rate.

Septage application rates will be calculated using excel sheet in Appendix #7.D The formula used is:

Plant requirement – soil residual nitrogen = needed nitrogen divided by 0.0026= gallons of septage to apply.

Ecology shall have 14 calendar days for review of information regarding agronomic rate recommendations. The 14-day review period shall begin after all necessary information to calculate the recommendation is received in writing by the designated Ecology staff member. Ecology will respond within 14 days of receiving all necessary information upon which a recommendation is based.

- Information that may be needed to support application rates
 - Cogger-Sullivan Spread sheet
 - What crop grown, harvested as,
 - Other inputs, Irrigation, commercial products, lime
 - Previous yields and expected yields
 - Animals: type, size, time on field
 - Soil test results
 - Biosolids analytical data and type

9.3 Verifying the Application Rate

When applying biosolids, application rates are calculated in gallons per acre for both dewatered and liquid applications. For dewatered biosolids, each application unit is assigned a volume, and the number of loads per field is determined. Depending on which applicator is being used, the correct area will be covered by varying speed and width of spread. The typical application rate procedure works like this: the supervisor determines rate and maximum number of loads for a field. This is entered on the "Application Report" and the report is

given to the operator. For liquid applications, a determination of the number of dry tons required is calculated. Then, using the percent total solids of the biosolids, the gallons per acre can be determined. The percent total solids will be checked periodically (example Sartorius MA35), it can also be done with a microwave and a scale) and an adjustment to the agronomic rate will be made if needed. When using the drag-hose system, flow rate & speed + implement width is used to calculate actual application rate. Speed and flow rate can be adjusted to hit target application rate. Flow rate will be determined using a flow meter. In the event the flow meter fails we will calculate application rate using line pressure and hose size. All this information is recorded on the "Liquid Application Report" located in Appendix 6.B of this plan.

10.0 Sampling Plan

Sections below describe soil sampling and biosolids sampling procedures. All sampling procedures will have an approved plan before sampling is done.

10.1 Soil Sampling

The collection of soil samples and observation of crop response will assist with the determination of correct biosolids application rates. The fall post-harvest soil nitrate test helps to gauge the effectiveness of the biosolids application rates by measuring the concentration of Nitrate-N remaining in the top one foot of soil at the end of the growing season and before soils become saturated. We will follow Oregon State University/ Washington State University guidance #EM 8832-E "Post-harvest Soil Nitrate Testing, for Manured Cropping Systems west of the Cascades" by D.M. Sullivan & C.G. Cogger for sampling Protocol and analyzing sampling results. Results will be provided to Dept. of Ecology within 14 days of receiving results.

Post-harvest soil nitrate testing is performed by collecting soil cores at multiple locations throughout the field, and combining the cores together to form a composite sample. The depth of each core will be labeled. These samples will be dried or refrigerated to stop biological activity that could change results before shipping to laboratory for analysis (See Appendix 8A).

Post-harvest, *report-card*, trends will be compared to threshold goals to determine biosolids application rates for the following year. Additional biosolids land application will be determined by considering the following: the trend of soil nitrate results, previous agronomic rate of N applied, weather conditions for the growing season, and other farming practices that could affect current trend point. Oregon State University/ Washington State University guidance #EM 8832-E "Post-harvest Soil Nitrate Testing, for Manured Cropping Systems west of the Cascades" by D.M. Sullivan & C.G. Cogger recommendations for Nitrate-N within the top foot will be used for residual goal. Fields with a 10 year history of Biosolids

application will have percent organic matter checked. Resampling intervals will depend on organic material levels. Fields with substantial lime stabilized biosolids application will have soil pH tested.

Due to the complicated nature of soil nitrogen, a secondary sampling could be performed in the spring to verify inconsistent data from fall sampling. Spring soil sampling is required for bringing a new site online. An alternate method of determining biosolids land application rates may be used with Dept. of Ecology's concurrence. That method would include conducting spring pre-application sampling for soil Nitrate-N and Ammonium-N prior to biosolids application, with those results subsequently used to determine appropriate application rates using the PNW0511e spreadsheet or similar. Once those calculations are complete and the results submitted, Ecology will consider allowing land application rates on a field by field basis.

See the Sampling and Analysis Plan for more detailed soil collection and testing information. A sampling and analysis plan detailing the procedures for the collection of soil samples may be found in Appendix 8 of this plan.

10.2 Biosolids Sampling and Analysis

Documenting that biosolids meet the standards for land application in WAC 173-308 is performed by either the biosolids generator (e.g. wastewater treatment plant) or by Fire Mountain Farms, Inc. If biosolids quality is changed by Fire Mountain Farms after receipt through the process of blending multiple biosolids sources, Fire Mountain Farms will follow Ecology's *Policy on Mixing Different Non-Exceptional Quality Biosolids-2008*. A sampling and analysis plan detailing the procedures for the collection of biosolids samples may be found in Appendix 8B of this plan.

For a detailed description of sampling procedures, please see the Sampling and Analysis Plan (May be submitted later if approved to mix biosolids sources in the future) located in Appendix 8B of this plan.

10.3 Pathogen Reduction

Pathogens are organisms, such as certain types of bacteria that have the potential to cause disease in humans. Biosolids must be processed to meet certain pathogen reduction standards. The pathogen reduction requirement for biosolids received at the site shall be met before being received by one of the alternatives listed in WAC 173-308-170 (5) through (7).

When biosolids from multiple sources are mixed on-site, documentation of pathogen reduction will be provided through the collection of samples that are representative of the blended biosolids and analyzed for fecal coliform (according WAC 173-308-150). These samples will be delivered to a State of

Washington accredited laboratory following a chain-of-custody protocol. Pathogen reduction shall be considered to have been accomplished if the geometric mean of the seven fecal coliform samples is less than 2,000,000 MPN/g-total solids (dry weight basis).

10.4 Trace Elements

At a minimum, biosolids land applied at the site, must meet the Ceiling Concentration Limits for pollutants found in Table 1 of WAC 173-308-170 (1). It is a policy of Fire Mountain Farms to only accept biosolids that meet the Pollutant Concentration Limit found in Table 3 of WAC 173-308-170 (3).

10.5 Vector Attraction Reduction Standard

Vector attraction is the characteristic of biosolids that may attract insects and animals (vectors) capable of transmitting disease. In general, biosolids meeting vector attraction prior to arriving at the site will have gone through a process to reduce volatile solids or has physical properties such as high pH that reduces vector attraction. To meet vector attraction reduction (VAR) after biosolids arrive at the site, a physical process such as injection or incorporation of the biosolids will be performed as part of the application procedure.

Most biosolids, prior to being received at the site, shall meet one of the vector attraction reduction (VAR) requirements in WAC 173-308-180 (1) through (6). If the VAR requirement has not been met prior to the biosolids arriving at the site, one of the VAR requirements in WAC 173-308-210 (4) (a) injection or (4) (b) incorporation shall be met at the time of biosolids application and WWTP will be provided with confirmation documentation that VARs was met.

11.0 Septage

All septage will be screened before application either by Fire Mountain Farms or the septage pumper. Screenings removed by Fire Mountain farms will be handled as solid waste and disposed of within those regulations. Application of septage will be done by Fire mountain farms or Agents supervised and instructed by Fire Mountain Farms Inc.

11.1 Pathogen and Vector Attraction Reduction options

11.1 The septage will be injected so that no significant amount of the septage on the surface within 1 hour injection

- 11.2 The septage will be surface applied then incorporated in to the soil within 6 hours
- 11.3 The septage will be stabilized by raising the PH to ≥ 12 and held for at ≥ 12 for 30 min (If this plan is used a Sampling and Analyses plan will be submitted)

12.0 Groundwater Protection Plan

Fire Mountain Farms will not apply to fields where depth to the water table is less than three feet (36 inches), from the soil surface. .

Determining depth to the water table:

1. Review Natural Resource Conservation Service, (NRCS), soil surveys for depths to water table
2. Those soil types that have water table that comes within 36 inch of the surface will have depth monitored prior to application.
3. Monitoring will be with temporary bore holes or permanent monitoring wells.
 - a. Temporary bore holes will be drilled, observation made, then refilled.
 - b. Permanent monitoring wells will have perforated PVC pipe installed with removable caps.
4. Field log will be kept on observations made at monitoring points. Copy of this log will be submitted to Ecology as part of Annual Report and will include at a minimum field conditions and weather, date, location information, and depth to water.
5. After five years of observation and water table has not been observed at a monitoring point, Fire Mountain Farms may close that monitoring point after conferring with Ecology.

13.0 Erosion Control Plan

NRCS has not classed this land as "highly erodible". There are permanently vegetated strips next to streams and ditches. The agricultural activities do not deem it necessary for an erosion control plan.

Biosolids will be applied at agronomic rates and managed consistent with established farming practices. Typical farming practices designed to reduce erosion potential will be in place.

14.0 Noxious Weed Plan

Sites are managed for specific crops with standard farming practices in place to control noxious weeds. The Noxious weeds of concern on this site are Tansy Ragwort, Scotch broom and Canadian Thistle. All have difficulty competing with desirable vegetation when adequate fertility is maintained in the soil. Our primary concern with noxious weeds is getting other property owners, Primarily the State of Washington, to control noxious weeds on land which is adjacent to fields we farm.

15.0 Restricting Site Access

A copy of Fire Mountain Farms' informational sign can be found in Appendix 5 of this plan. Signs will be placed as noted on the site map in Appendix 2.D.

Signs will be placed at all normal points of access and at least every quarter mile along roadways that border application areas. Signs will also be placed at other points along the boundary where it is deemed appropriate by Fire Mountain Farms or as requested by DOE. Entering improved property without permission of land owner or person who has right of possession (lease holder) is a violation of state law. The posting of signs noting the site is restricted adds an additional measure for public protection and also signals that the land is not open for public access.

16.0 Recordkeeping

Fire Mountain Farms shall keep specific records of land application activities. These records shall be available for inspection by Ecology upon request. As a minimum, the following information shall be included in the land application site records:

Fire Mountain Farms will maintain the following information as required. Forms for maintaining this information are located in Appendices 6 and 7 of this plan.

- Sampling and analysis data obtained or used to make decisions on land application.
- The source of biosolids /septage delivered.
- The amount of biosolids /septage delivered.
- The amount of biosolids /septage applied.
- The number of acres on which biosolids /septage were applied.
- The rate of application.
- The date biosolids /septage were applied.

17.0 • Additional Information

See the following appendices of this Site-Specific Land Application Plan for more information.

Appendices

1. Land Owners Agreement
2. Site Maps
3. Soils Report (includes site soils map)
4. Well Logs
5. Informational Sign add sign
6. Forms add forms
7. Spreadsheets/Charts add spreadsheet
8. Sampling and Analysis Plan
9. Not used
10. Spill Plan Example
11. Public Notice
12. Supporting Documents