



FACTSHEET
(pursuant to NAC 445A.236)

Permittee Name: FRANKTOWN MEADOWS EQUESTRIAN CENTER
4200 OLD HIGHWAY 395
WASHOE VALLEY, NV 89704

Permit Number: NS0091006

Permit Type: GROUNDWATER DISCHARGE

Designation: GROUNDWATER

New/Existing: EXISTING

Location: FRANKTOWN MEADOWS EQUESTRIAN CENTER, WASHOE
4200 OLD HWY 395, WASHOE VALLEY, NV 89704
LATITUDE: 39.28, LONGITUDE: -119.8350
TOWNSHIP: T16N, RANGE: R19E, SECTION: S3

Outfall / Well Num	Outfall / Well Name	Location Type	Well Log Num	Latitude	Longitude	Receiving Water
001	INFLUENT	Internal Outfall		39.28	-119.8350	GROUNDWATER
002	EFFLUENT	External Outfall		39.28	-119.8350	GROUNDWATER

Permit History/Description of Proposed Action

The Permittee, Franktown Meadows Equestrian Center (FMEC), has applied for the renewal of their groundwater discharge permit NS0091006, for their Alternating Intermittent Recirculating Reactor (AIRR) wastewater treatment system, at 4150 State Route 429, in Washoe Valley, being within Washoe County, Nevada. The Permittee proposes to discharge treated effluent to an evaporative pond located onsite.

The permit was first issued on November 14, 1997. The most recent permit was issued on October 1, 2015, and expired on September 30, 2020; the permit has been administratively continued since.

Facility Overview

The FMEC is a 41-acre equestrian center located in Washoe Valley, Nevada that serves to train and board horses along with providing various riding areas within its boundary. FMEC uses an engineered wastewater treatment system (WWTS) for domestic sewage treatment as the equestrian facility location was considered impractical for a conventional septic system and leach field due to shallow groundwater occurrence. The treatment system uses a two stage rock media filter, being a AIRR treatment system, which includes primary treatment (sludge removal), secondary treatment (AIRR filter media recirculation), and chlorine tablet disinfection. Treated effluent is discharged into a clay-lined holding pond for non-structural fire protection water, e.g., hay storage area. The facility's wastewater flows are comprised of domestic sewage from two caretaker residences, facility restrooms, and a kitchen sink located in the horse arena facility.

The AIRR is an attached growth, rock media filter. The AIRR system incorporates a biofilter, which reduces Biochemical Oxygen Demand (BOD5) in the secondary treatment section and provides effluent polishing in the tertiary treatment section. The tertiary treatment zone accomplishes partial nitrogen removal down to 20

mg/L Total Nitrogen (TN). The AIRR system includes the biofilter enclosure plus separate septic system, being a 1,500-gallon conventional septic tank which removes settleable wastewater solids. After which the wastewater then flows into a dosing system where the primary effluent is dosed and dispersed onto a two-stage pea gravel filter via low-pressure overhead sprinklers. The attached growth microbes reduce BOD₅ and suspended solids (TSS), along with partial nitrification of ammonia. The treated wastewater is then sent to the recirculation and holding tanks.

Since the AIRR system treats septic tank (primary) effluent, solids buildup and production within the biofilter is minimal. Secondary effluent from the rock media filter is disinfected with chlorine pool tablets. The solids are periodically pumped and hauled to the Truckee Meadow Water Reclamation Facility (TMWRF) for additional biological treatment or trucked out to a local farm for disposal, while the treated effluent is discharged into a 0.145 million-gallon (MGal) capacity clay lined holding pond, which has an average 0.13-acre surface area for evaporation, with a minimum volume of water (0.08 Mgal) always maintained in the pond for emergency fire water needs (e.g. hay storage area).

Outfall Summary

Outfall 001 – This internal outfall is for measuring the domestic sewage (Influent) flowing into the wastewater treatment system.

Outfall 002 – This external outfall is for measuring the treated effluent being discharged into the holding pond.

Facility Upgrades since last issued permit

The media material in the primary, secondary, and discharge tanks was replaced with new, washed rock and pea gravel.

Solids Handling

Solids from the primary, secondary and discharge tanks are periodically pumped and hauled to TMWRF for additional biological treatment or can be collected by a vacuum service truck and discharged at agriculture fields located in Lovelock for percolation into the groundwater.

Effluent Management and Reuse

Treated effluent is discharged into a holding pond to evaporate and can be used for emergency fire water (if needed).

Design Flow (and basis) and Measurement & Current Capacity

The FMEC was designed for an average day flow rate of 0.0015 Mgal/d and a peak flow (daily maximum) flow rate of 0.0015 Mgal/d.

The treated effluent is measured by a meter, with an average daily maximum flow of 0.0005 Mgal/d, reported during the period reviewed for this permit renewal. The current pond capacity is 264,000 gallons with 2-feet of freeboard.

Pretreatment Program

The facility does not meet the federal Environmental Protection Agency's (EPA's) guidelines requiring them to have a pretreatment program.

Operations & Maintenance (O&M) Manual status

The FMEC's Operation & Maintenance Manual (O&M Manual) was last reviewed and approved on January 25, 2022. The Technical, Compliance, and Enforcement Branch of the Bureau of Water Pollution Control requires O&M Manuals to be updated every two (2) permit cycles which equate to every ten (10) years.

Effluent Characterization

Nevada State Network Discharge Monitoring Report (NetDMR) data, as reported from March 2020 to

February 2025, was reviewed as part of the permit renewal process. The following average concentrations of pollutants and flow rate were reported.

Acronyms:

mg/L = Milligrams per Liter

Mgal/d = Million gallons per day

mL = Milliliter

SU = Standard Units

BOD5 = Biochemical Oxygen Demand, 5-Day

TSS = Total Suspended Solids

Outfall 001 (Influent):

Flow Rate: 0.0005 Mgal/d

Outfall 002 (Effluent):

BOD5: 7.26 mg/L

Coliform, fecal general: 128.27 Colony Forming Units per 100 ml

Nitrogen, total: 13.13 mg/L

pH: 7.49 S.U.

TSS: 8.16 mg/L

Pollutants of Concern

Pollutants of concern are any pollutants or parameters that are believed to be present in the discharge and could affect or alter the physical, chemical, or biological condition of the receiving water. Common pollutants of concern for the treated wastewater are Fecal Coliform and Total Nitrogen.

Profile 1 pollutants were not added to the permit, even though it is a Nevada Division of Environmental Protection Bureau of Water Pollution (Division) reporting requirement for wastewater treatment systems/plants/facilities, due to the small amount of users on the system, with them all falling within the FMEC's boundary (see expanded users list under the Facility Description section) negating the need to sample for those constituents.

Receiving Water

The receiving water is groundwater of the State. Depth to groundwater in the area is approximately 2 to 8 feet below ground surface. No adverse effects are expected with the discharge of this treated wastewater.

Compliance History

The facility has been in substantial compliance during the period reviewed being March 2020 through February 2025.

Proposed Effluent Limitations

The discharge shall be limited and monitored by the Permittee as specified below.

WWTP Discharge Limitations Table for Sample Location 001 (Influent) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	30 Day Average	<= 0.0015 Million Gallons per Day (Mgal/d)		Raw Sewage Influent	001	Continuous	CALCTD ^[1]
Flow rate	Daily Maximum	<= 0.0015 Million Gallons per Day (Mgal/d)		Raw Sewage Influent	001	Continuous	CALCTD ^[1]

Notes (WWTP Discharge Limitations Table):

1. Pump timer.

WWTP Discharge Limitations Table for Sample Location 001 (Influent) To Be Reported Quarterly^[1]

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
BOD, 5-day	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Quarterly	DISCRT
BOD, 5-day	Quarterly Average		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Quarterly	DISCRT
Solids, total suspended	Daily Maximum		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Quarterly	DISCRT
Solids, total suspended	Quarterly Average		M&R Milligrams per Liter (mg/L)	Raw Sewage Influent	001	Quarterly	DISCRT

Notes (WWTP Discharge Limitations Table):

- Influent should be sampled concurrently with treated effluent (Outfall 002) to determine the percentage of removal rates. If there is no discharge from Outfall 002, then no sampling needs to be done of the influent (Outfall 001).

WWTP Discharge Limitations Table for Sample Location 002 (Effluent) To Be Reported Monthly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
Flow rate	Daily Maximum	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER
Flow rate	30 Day Average	M&R Million Gallons per Day (Mgal/d)		Effluent Gross	002	Continuous	METER

WWTP Discharge Limitations Table for Sample Location 002 (Effluent) To Be Reported Quarterly

Discharge Limitations				Monitoring Requirements			
Parameter	Base	Quantity	Concentration	Monitoring Loc	Sample Loc	Measurement Frequency	Sample Type
BOD, 5-day	Daily Maximum		<= 30 Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT
BOD, 5-day	Quarterly Average		<= 30 Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT
Coliform, fecal general	Daily Maximum		<= 240 Colony Forming Units per 100ml T (CFU/100mL) ^[1]	Effluent Gross ^[2]	002	Quarterly	DISCRT
Nitrogen, total	Daily Maximum		M&R Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT
pH, maximum	Daily Maximum		<= 9 Standard Units (SU)	Effluent Gross	002	Quarterly	DISCRT
pH, minimum	Daily Minimum		>= 6 Standard Units (SU)	Effluent Gross	002	Quarterly	DISCRT
Solids, total suspended	Daily Maximum		<= 30 Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT
Solids, total suspended	Quarterly Average		<= 30 Milligrams per Liter (mg/L)	Effluent Gross	002	Quarterly	DISCRT
BOD, 5-day, percent removal ^[3]	Quarterly Minimum ^[4]		>= 85 Percent (%)	Effluent Gross	002	Quarterly	CALCTD
Solids, suspended percent removal ^[3]	Quarterly Minimum ^[4]		>= 85 Percent (%)	Effluent Gross	002	Quarterly	CALCTD

Notes (WWTP Discharge Limitations Table):

1. CFU or MPN/100 ml.
2. Obtained from the AIRR effluent after the chlorinator's discharge.
3. Both BOD5 and TSS treated effluent should be sampled concurrently with influent to determine actual percentage of removal rates achieved by the treatment system. If there is no discharge of effluent (Outfall 002), then no sampling needs to be done of the influent (Outfall 001).
4. This should be based on a Quarterly Average Minimum.

Summary of Changes From Previous Permit

Updated Outfall 001 (Influent) Monthly Flow Rate parameters from a "Sumatn" sample type to a "Calctd" sample type.

Under Outfall 001, an additional reporting period was added for "Quarterly" with the following parameters:

BOD, 5-day, for a "Daily Maximum" base, a "M&R Milligrams per Liter (mg/L)" concentration, a "Raw Sewage Influent" monitoring location, a "Quarterly" measurement frequency, and a "DisCRT" sample type.

BOD, 5-day, for a "Quarterly Average" base, a "M&R Milligrams per Liter (mg/L)" concentration, a "Raw Sewage Influent" monitoring location, a "Quarterly" measurement frequency, and a "DisCRT" sample type.

Solids, total suspended, for a "Daily Maximum" base, a "M&R Milligrams per Liter (mg/L)" concentration, a "Raw Sewage Influent" monitoring location, a "Quarterly" measurement frequency, and a "Discret" sample type.

Solids, total suspended, for a "Quarterly Average" base, a "M&R Milligrams per Liter (mg/L)" concentration, a "Raw Sewage Influent" monitoring location, a "Quarterly" measurement frequency, and a "Discret" sample type.

Along with the footnote:

1. Sampling for BOD, 5-day and total suspended solids (TSS) should be done concurrently when effluent is sampled to determine the exact percentages of removal achieved.

Under Outfall 002, an additional reporting period was added for "Monthly" with the following parameters added:

Flow Rate, for a "Daily Maximum" base, a "M&R Million Gallons per Day (Mag/d)" quantity, a "Effluent Gross" monitoring location, a "Continuous" measurement frequency, and a "Meter" sample type.

Flow Rate, for a "30-Day Average" base, a "M&R Million Gallons per Day (Mag/d)" quantity, a "Effluent Gross" monitoring location, a "Continuous" measurement frequency, and a "Meter" sample type.

The following parameters were either removed, revised, or added:

All the parameters were changed from a "Quarterly Maximum" base to a "Daily Maximum" base.

pH, Minimum was changed from a "Quarterly Minimum" base to a "Daily Minimum" base.

Nitrogen, Total, with a "Quarterly Average", base was deleted.

Technology Based Effluent Limitations

Technology based effluent limitations (TBELs) are required as promulgated by the United States (U.S.) EPA for Publicly Owned Treatment Works (POTWs). The following limits are based on secondary treatment standards as allowed by the Code of Federal Regulation (CFR) Title 40, Section 133, and which has been adopted by the State of Nevada.

U.S. EPA published federal secondary treatment standards at 40 CFR 133, based on an evaluation of performance data for POTWs practicing a combination of physical and biological treatment.

Performance is measured by monitoring biodegradable organics and suspended solids in the effluent, and the ability to maintain pH. Federal secondary treatment standards are defined under 40 CFR 133 for maximum BOD₅ as a 30-day average of 30 mg/L and a 7-day average of 45 mg/L and for maximum TSS as a 30-day average of 30 mg/L and a 7-day average of 45 mg/L. In addition to describing the minimum levels of effluent quality attainable by secondary treatment, 40 CFR 133.102 states that the 30-day average percent removal of BOD₅ and TSS shall not be less than 85%. The Division has adopted these standards for groundwater dischargers and applied the 7-day average thresholds as daily maximum effluent limits for BOD₅ and TSS.

The previous permit included effluent limitations for BOD₅ and TSS more stringent than the secondary technology based treatment standards defined at 40 CFR 133, based on the technical capability of the facility's tertiary treatment process. Sections 402(o) and 303(d)(4) of the Clean Water Act (CWA) and federal regulations at 40 CFR 122.44(l) prohibit backsliding and require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions. Consistent with the anti-backsliding requirements, the proposed permit retains effluent limits for BOD₅ and TSS based on the technical capability of the facility's tertiary treatment process, which includes quarterly average and daily maximum effluent limits for BOD₅ of 30 mg/L and 30 mg/L, respectively, and a quarterly average effluent limit for TSS of 30 mg/L.

The following limits are based on the technical capability of the facility's tertiary treatment process:

BOD5: Quarterly average limit: ≤ 30 mg/L; Daily maximum limit: ≤ 30 mg/L.

TSS: Quarterly average limit: ≤ 30 mg/L; Daily maximum limit: ≤ 30 mg/L.

Along with secondary treatment limits for pH:

pH: Daily Maximum: ≤ 9.0 Standard Units

pH: Daily Minimum ≥ 6.0 Standard Units

The following performance standards for POTWs with secondary treatment standards have been included in the permit:

Limits Based on Secondary Treatment Standards:

BOD5: Percent removal: ≥ 85 percent (%).

TSS: Percent removal: ≥ 85 percent (%).

Limits Based on Facility's Design Criteria Review:

30-day average flow rate for the influent is limited to ≤ 0.0015 Mgal/d.

Daily maximum flow rate for the influent is limited to ≤ 0.0015 Mgal/d.

Water Quality Based Effluent Limitations

Water quality based effluent limitations are not applicable to this permit.

Proposed Water Quality Based Effluent Limits (monthly/weekly/daily)

Water quality based effluent limitations are not applicable to this permit.

Basis for Effluent Limitations

There are currently no specific water quality standards that have been formally adopted by the State for groundwater. However, the Division has the discretion to implement effluent limitations outside water quality standards per Nevada Administrative Code (NAC) 445A.243, which states, "In establishing an effluent limitation to carry out the policy of this State set forth in NRS 445A.305, consideration must be given to, but is not limited by the following: ... (2) the need for standards that specify by chemical, physical, biological or other characteristics the extent to which pollution by various substances will not be tolerated."

Influent and Effluent Monitoring Requirements:

Quarterly influent and effluent monitoring for BOD5 and TSS are included to assess the treatment performance of the WWTS. A quarterly sampling frequency for BOD5 and TSS is sufficient for determining compliance with the applicable effluent limitations. Percent removal requirements for BOD5 and TSS are established in the permit as quarterly average minimums of 85%, based on secondary treatment standards. Some wastewater treatment processes can increase or decrease wastewater pH; therefore, quarterly monitoring for pH is included in assessing compliance with effluent limits of 6.0 S.U. as a daily minimum and 9.0 S.U. as a daily maximum.

General fecal coliform is required to be monitored to assess the quality of treated wastewater being discharged into the pond and for the protection of human health and the environment. The requirement to sample for coliform was retained due to Notice of Decision, dated November 3, 1997, during which concerns were stated regarding the need to sample for coliform due to high wind events in Washoe Valley (potentially) carrying the water from the holding pond and onto adjacent properties. It was decided that both Daily Maximum and Quarterly Average values would be added to the permit to forestall any further concerns. The quarterly average reporting requirement was removed during the permit renewal in 2008, as this water is not being re-used for any type of irrigation and is only for fire water (as needed), along with reported levels not exceeding the permitted concentrations.

Monitoring is required to ensure that the treatment plant capacity is not exceeded and to assess the quality of the effluent being discharged.

The proposed permit establishes the requirement to report the total nitrogen to ensure groundwater of the State is not being degraded.

Anti-backsliding

None of the proposed permit limits were changed to a less restrictive limit compared to those in the previous permit. The reporting requirement for Total Nitrogen with an "Quarterly Average" was removed due to that discharge limitation no longer being a Division requirement, and with the concentration levels reported under the "Quarterly Maximum" discharge limitation, now changed to a "Daily Maximum" discharge limitation, being sufficient to determine the level of treatment being achieved by the FMEC.

Antidegradation

The Division has developed an antidegradation regulation that is applied on a statewide basis, and which meets the statutory requirements of Nevada's water pollution control law found at Nevada Revised Statute (NRS) 445A.520 and NRS 445A.565 and is consistent with the federal antidegradation policy found at 40 CFR § 131.12. The objective of the Division's antidegradation regulation is to prevent degradation of Nevada's surface waters and maintain the unique attributes and special characteristics and water quality associated with high-quality waters.

As this permit is for discharges to the groundwater, and not surface water, the new antidegradation rule is not applicable. There are currently no specific water quality standards that have been formally adopted by the State for groundwater, however, data reviewed during the renewal process does not indicate the potential for degradation of the groundwater from the treated effluent discharged within the compliance limits of the proposed permit.

Special Conditions

There are no Special Approvals or Conditions applicable to this permit.

SA – Special Approvals / Conditions Table

There are no Special Approval / Condition items

Discharges From Future Outfalls/ Planned Facility Changes

There are no planned discharges from future outfalls or facility changes.

Corrective Action Sites

There are no Bureau of Corrective Actions remediation sites located within a one-mile radius from the center-point of the property.

Wellhead Protection Program

There is a Public Water Supply (PWS) well located approximately 510 feet west to outfall 002 that has a depth of approximately 130 feet and a screen from 90 to 130 feet. A second well is located approximately 750 feet northwest to outfall 002 that has a depth of approximately 130 feet and a screen from 90 to 135 feet. The outfall is in the Drinking Water Protection Area of the wells, which is defined by a 3,000-foot radius around a PWS well. The outfall is not located in a Wellhead Protection Area (WHPA), which represents an approximate 10-year capture zone of a well. The wells are at minimal risk based on the groundwater flow and the distance of the wells.

Schedule of Compliance:

SOC – Schedule of Compliance Table

There are no Schedule of Compliance items

Deliverable Schedule:

DLV– Deliverable Schedule for Reports, Plans, and Other Submittals

Item #	Description	Interval	First Scheduled Due Date
1	Quarterly DMRs	Quarterly	1/28/2026
2	Annual Report	Annually	1/28/2026

Procedures for Public Comment:

The Notice of the Division's intent to issue a permit authorizing the facility to discharge to groundwater of the State of Nevada subject to the conditions contained within the permit, is being mailed to interested persons on our mailing list and will be posted on our website at <https://ndep.nv.gov/posts>. Anyone wishing to comment on the proposed permit can do so in writing until 5:00 P.M. **11/17/2025**, a period of 30 days following the date of the public notice. The comment period can be extended at the discretion of the Administrator.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator of EPA Region IX or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted. Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determined to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination:

The Division has made the tentative determination to issue/re-issue the proposed 5-year permit.

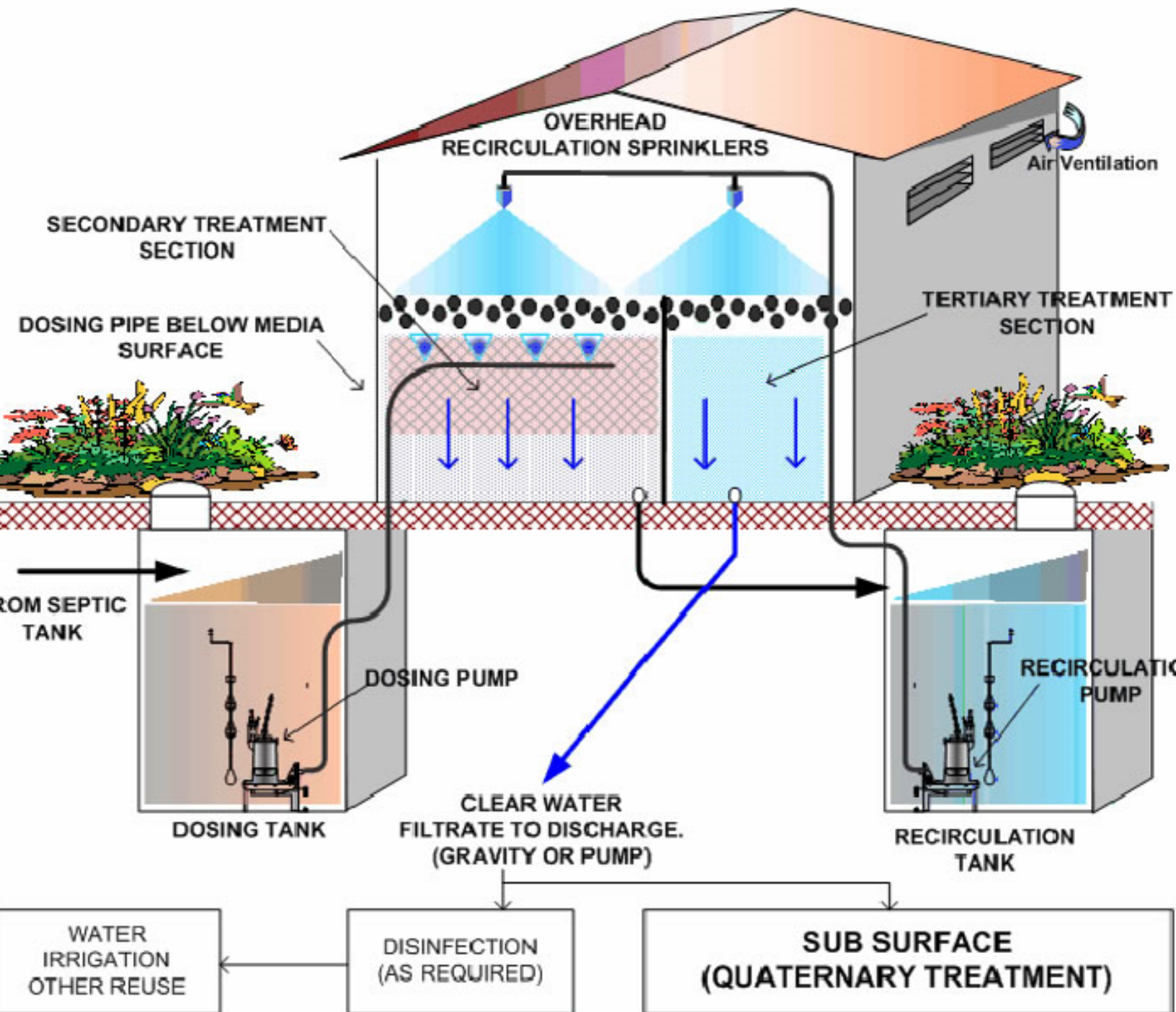
Prepared by: **Melissa Hanson**

Date: **10/8/2025**

Title: **Staff II Engineer**

AIRR SYSTEM

ALTERNATING INTERMITTENT RECIRCULATING REACTOR



- Dosing
- Rest
- Recirculation
- Rest
- Dosing
- Rest
- Recirculation
- Rest