Montana Department of Environmental Quality

Water Protection Bureau
P.O. Box 200901
Helena, MT 59620-0901

PERMIT FACT SHEET

MONTANA GROUND WATER POLLUTION CONTROL SYSTEM (MGWPCS)

Permittee:	Indian Springs Ranch, LLC
Permit Number:	MTX000219
Permit Type:	Domestic wastewater
Application Type:	Renewal
Facility Name:	Indian Springs Subdivision
Facility Location:	Sections 25 and 36, Township 37 North, Range 27 West, and Section 2, T36N-R27W in Lincoln County. Latitude: 48.92812° Longitude: -115.05701°
Facility Address:	4488 US Highway 93 North / P. O. Box 226, Eureka, MT 59917
Facility Contacts:	Fred Schickedanz; Shaun Holdaway (Operator)
Treatment Type:	Level 2
Receiving Water:	Class I Ground Water
Number of Outfalls:	3 (Only one being used Outfall 003)
Outfall / Type:	003 / subsurface multi-zone drainfield (Outfalls 001 and 002 not used)
Effluent Type:	Domestic strength wastewater
Mixing Zone:	Standard
Effluent Limit Type:	DBEL
Effluent Limits:	Outfall 003, Total nitrogen: 8.46 lbs./day maximum load Outfall 001, Total nitrogen: 6.77 lbs./day maximum load Outfall 002, Total nitrogen: 5.08 lbs./day maximum load
Flow Rate:	Average daily design flow: 68,645 gallons per day (Entire system) Maximum daily design flow: 101,445 gallons per day (Entire system) Outfall 003 (in use): 42,268.75 gpd Outfall 002 (not in use): 25,361.25 gpd Outfall 001 (not in use): 33,815 gpd
Effluent sampling:	Quarterly, dosing tank distribution box
Ground water sampling:	None
Fact Sheet Date:	June 2020
Prepared By:	Darryl Barton

1.0 PERMIT INFORMATION

DEQ issues MGWPCS permits for a period of five years. The permit may be reissued at the end of the period, subject to reevaluation of the receiving water quality and permit limitations. This fact sheet provides the basis for DEQ's decision to renew a MGWPCS wastewater discharge permit INDIAN SPRINGS RANCH, LLC for the INDIAN SPRINGS SUBDIVISION wastewater treatment system.

1.1 APPLICATION

DEQ received an application for renewal of the permit on August 4, 2015. Renewal fees accompanied the application. DEQ reviewed the submittal and issued a completeness letter on August 7, 2015. DEQ administratively continued the permit with the existing effluent limits and monitoring requirements until staff resources were available to evaluate the renewal.

1.2 PERMIT HISTORY

The prior original permit application was received by DEQ August 3, 2010. The application was determined to be deficient September 3, 2010. Response from the applicant was received on September 15, 2010. The prior application was deemed complete on September 20, 2010. The effective date of the permit was February 1, 2011 through January 31, 2016. Permit coverage has been continued during the renewal process.

1.3 CHANGES TO THIS PERMIT

The phosphorus load limit has been removed from this permit. Phosphorus levels in the effluent were low during the previous permit cycle (**Table 2**) and phosphorus breakthrough is considered insignificant (**Section 5.2**). The nitrogen effluent limitation has been changed from an effluent concentration limit to a load concentration. Calculations and justification for the change are found in **Section 5.1**. Effluent monitoring and reporting for oil and grease has been removed from this permit. Monitored levels of oils and greases in the effluent were low during the previous permit cycle and there is no need for continued monitoring.

2.0 FACILITY INFORMATION

2.1 LOCATION

The INDIAN SPRINGS SUBDIVISION wastewater treatment system is located about 2 miles north of Eureka and 5 miles south of the Canadian border on US Highway 93 (**Figure 1**). **Figure 2** shows the entire project including the golf course, clubhouse, recirculating sand filter (RSF), and the RV park. **Figure 3** concentrates on the wastewater system.

Indian Springs (IS) is a private residential resort which includes a golf course, a club house (golf shop, bar and restaurant), commercial lots and a recreational vehicle (RV) park. (**Figure 2**). Currently there are 26 single family residences and 2 being built. 45 RV spaces are being used. There are also rental cabins being built at this time.

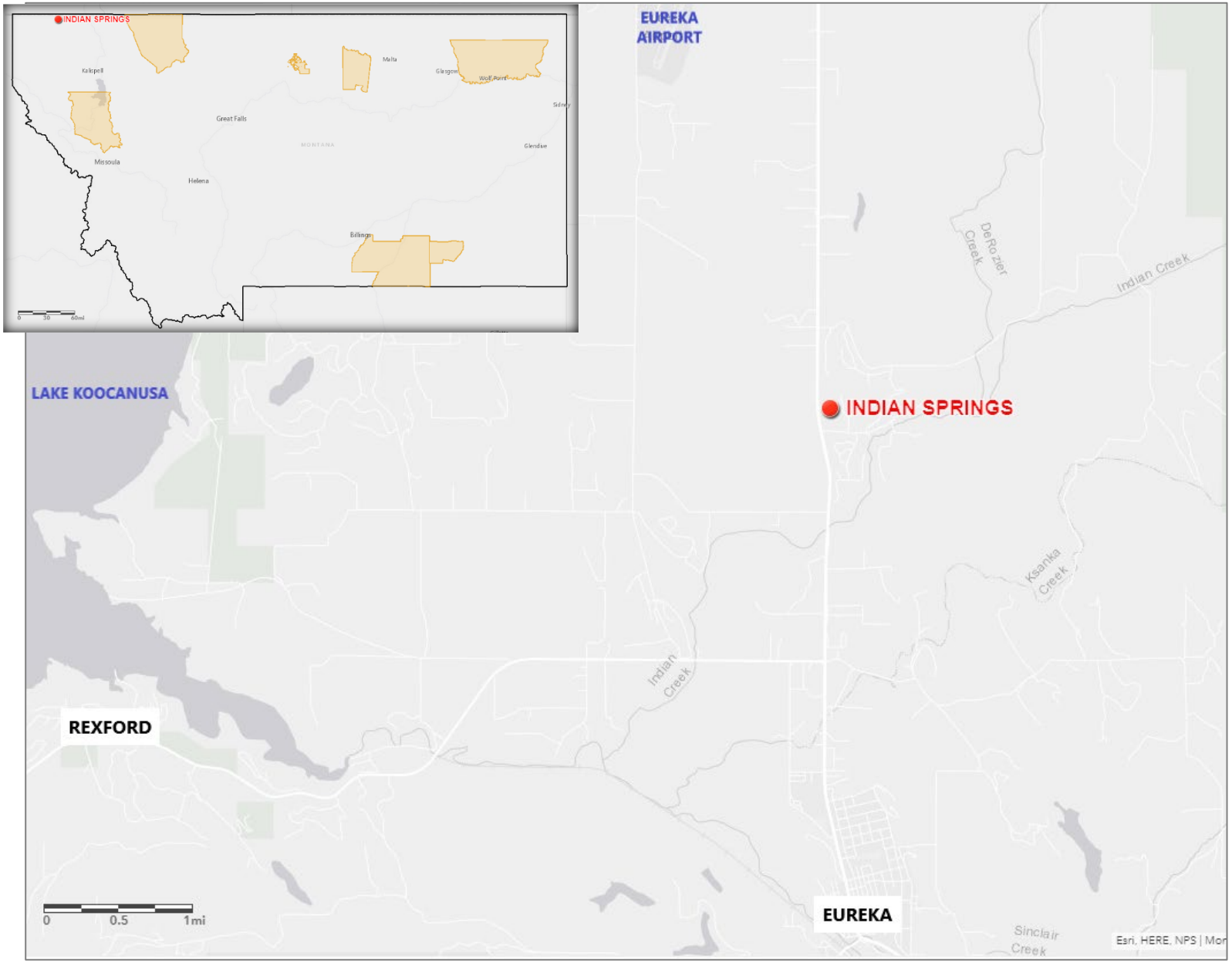


Figure 1. Location of INDIAN SPRINGS

Figure 2. INDIAN SPRINGS Entire Project Area

Figure 3. INDIAN SPRINGS Wastewater System

2.2 OPERATIONS

System operations are summarized in **Table 1**.

Table 1. Collection, Treatment, and Disposal Summary

Collection	
Contributing sources:	26 residences, 1 business (non-industrial), RV Park (45 spaces)
Standard industrial code(s) of sources:	Public Golf Course – 7992 Private Households – 8811 RV Park – 7033
Collection method:	Varying sizes of HDPE pipe ranging from 2-inch to 6-inch diameter
Flow volume:	Average daily design flow: 68,645 gallons per day Maximum daily design flow: 101,445 gallons per day
Treatment	
Treatment level:	Level 2
Treatment technology:	Septic tanks with septic tank effluent pumps (STEP), recirculating sand filters, and pressure-dosed drainfields.
Treatment location:	Latitude: 48.93225°, Longitude: - 115.05653°
Disposal	
Method of disposal:	Infiltration to ground water
Disposal structures:	Subsurface drainfields
Outfall locations:	Outfall 001 Latitude: 48.92801°, Longitude: - 115.05326° Outfall 002 Latitude: 48.92985°, Longitude: -115.05801° Outfall 003 Latitude: 48.93346°, Longitude: - 115.05691°

Wastewater treatment begins in individual septic tanks for each lot. Septic tank effluent is pumped to a collection system that connects to a recirculating sand filer (RSF) that provides Level 2 treatment. Treated wastewater from the RSF is recirculated with 75% pumped to a recirculation tank that goes back through the RSF and 25% to the dosing tank. The dosing tank pumps effluent to pressurized multi-zoned subsurface drainfields. There are three outfalls approved for the project. Due to the minimal flows generated only Outfall 003 has received effluent at this time.

The wastewater system has been designed and constructed to treat and dispose up to 101,445 gallons per day (GPD). Effluent flow has averaged 1,959 GPD during the past five years. Influent flow is measured using an electromagnetic flow meter and located prior to the RSF. A flow meter measures effluent flow from the dose tank to the drainfield. Effluent water quality is sampled at the dose tank distribution box.

Monitoring and sampling requirements are further discussed in **Section 6**.

Figure 4 is a line drawing of the collection, treatment, and disposal process.

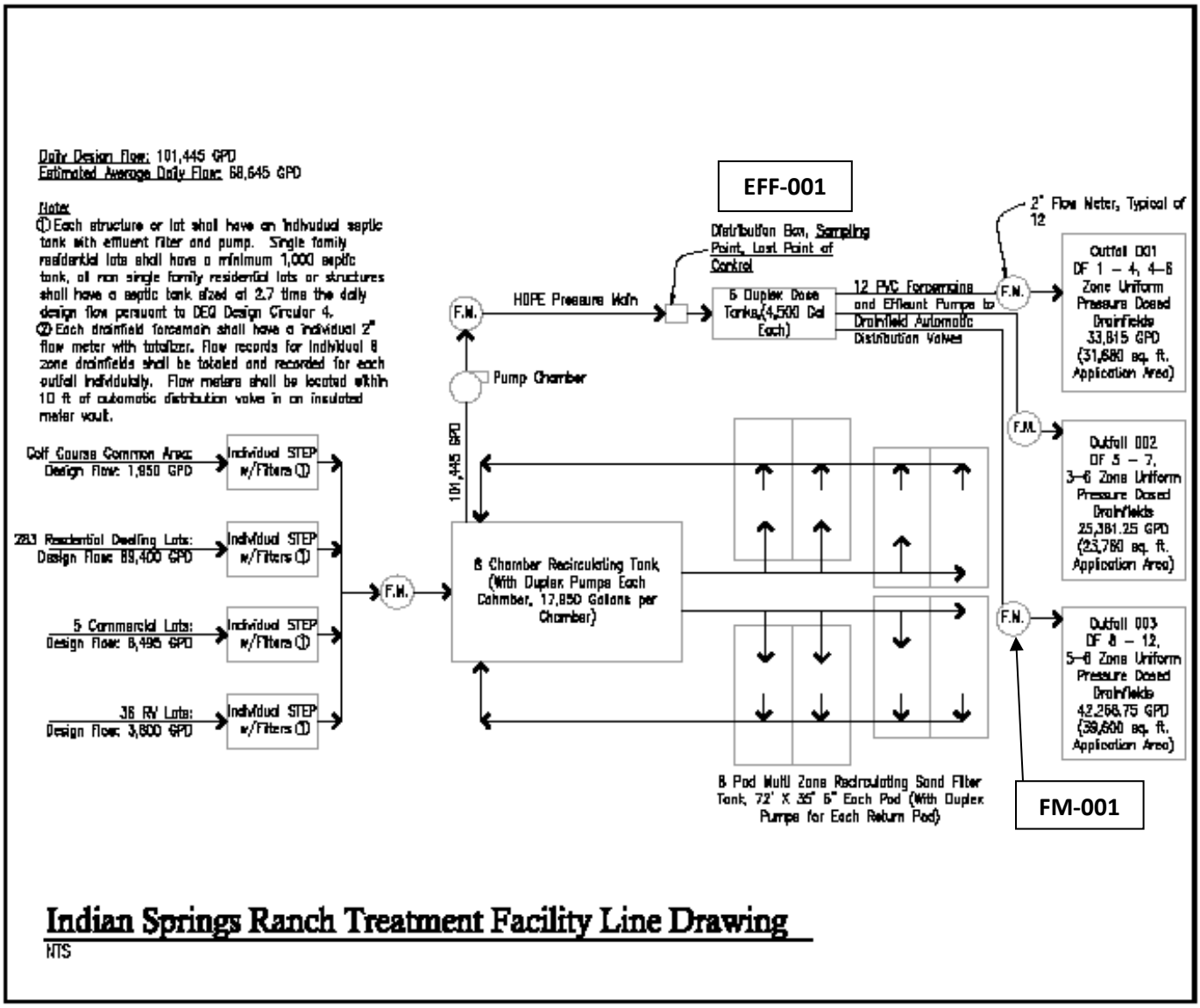


Figure 4. Wastewater Treatment System Line Diagram.

2.3 EFFLUENT CHARACTERISTICS

DEQ requires a permit applicant to disclose the quality of the effluent so that DEQ may evaluate the potential for pollution of state water. During the previous permit cycle, the facility sampled and reported effluent quality criteria to DEQ in the form of discharge monitoring reports (DMRs). These data are summarized in **Table 2**. The majority of the concentrations are reported in units of milligrams per liter (mg/L), which is equivalent to one part per million.

Table 2: Effluent Quality – Outfall 003. DMR Results

Parameter[1]	Location	Units	Reported Minimum Value	Reported Average Value	Reported Maximum[2] Value	# of Samples
Biochemical Oxygen Demand (BOD_5)	EFF-001	mg/L	2.00	6.88	16.00	10
Flow rate, Discharge	FM-001	gpd	543.00	1959.00	4930.00	14
Nitrogen, Nitrate + Nitrite (as N)	EFF-001	mg/L	4.67	11.19	28.30	15
Nitrogen, Total Kjeldahl (as N)	EFF-001	mg/L	0.36	3.78	19.60	15
Nitrogen, Total (as N)	EFF-001	mg/L	5.70	14.97	46.20	15
		lbs/day	0.07	0.31	1.26	15
Phosphorus, Total (as P)	EFF-001	mg/L	0.49	1.65	6.04	15
Total Suspended Solids (TSS)	EFF-001	mg/L	2.00	5.08	30.00	15

Footnotes:

DMR = Self-Reported Discharge Monitoring Reports

EFF-001: Effluent sample site located at dose tank.

FM-001: Effluent flow meter located at dose tank.

Period of Record: 06/2015 through 03/2020.

(1) Conventional and nonconventional pollutants only, table does not include all possible toxics.

(2) Maximum value recorded of all quarterly reported Daily Maximum Values.

2.4 GEOLOGY

Soils in the area of the outfall drainfields are composed of an **Iphil-Truscreek-Downey complex.** Soils of this type are excellent in terms of providing drainage and treatment of wastewater. They are silty sandy loams that increase with sand concentration as depth increases. There is no evidence of shallow water. Slopes are 0 – 2 percent. Soil map is located in **Appendix A** (Natural Resources Conservation Service, USDA, 2020). Soils were also examined during initial site evaluation through the use of 21 test pits (TP). Soil suitability was confirmed and there was no evidence of high water conditions. Specifics of the site evaluation are available in the prior statement of basis (fact sheet).

The system is located in the Rocky Mountain Trench, which is a narrow northwest trending topographic depression that formed during the Laramide Orogeny as part of the Paleocene or Eocene Epoch. The trench is associated with down-faulting between major longitudinal faults. ISS lies on the east side of the Tobacco Plains, a relatively flat present-day topographic surface on the floor of the Rocky Mountain Trench that extends from the

International Boundary to Eureka. Isolated drumlin-like hills and kettle lakes are scattered across the flat plains. Vegetation is grassy on the plains and not consistent with the surrounding forested mountainous areas. The Kootenai River bounds the plains on the west. The Whitefish Mountain Range is to the east.

Within the trench area, subsurface depressions have formed in the bedrock creating depositional basins some of which have been filled with nearly 3,000 feet of sediment. These sediments are primarily glacial and fluvial-glacial in nature and include dune sands, lake-bottom or deltaic deposits, outwash deposits, and till associated with the advance and retreat of the Cordilleran (Pleistocene) ice sheet. ISS is located in an area that coincides with one of the major depositional trenches. This particular depositional trench consists of glacial tills associated with drumlin features and glacial outwash sediments that are deposited between the drumlins.

2.5 HYDROGEOLOGY

Twenty-one test pits were excavated prior to development of Indian Springs (IS). Soils and subsoils were evaluated to 8 feet depth for the suitability of wastewater treatment and dispersal and for the presence of high water or saturated soil conditions.

Testing on the property prior to development show no evidence of shallow groundwater (21 test sites). Since there has been no evidence of an unconfined shallow aquifer there is no applicable shallow hydraulic gradient, and no hydraulic conductivity data available at this site. Ground water exists under confined conditions at depths ranging from 130-feet to 150-feet and should not be affected by the effluent discharge. Review of well logs in the immediate area (Section 36, T37N-R27W) verifies that there is no evidence of shallow ground water above the confining clay layer. Boring logs describe the subsoils in the unsaturated zone as “dry, brown (to yellow) sand” with some localized gravel. A confining layer is encountered from 30 to 90-feet depth. This uppermost confining layer is composed of clay to silty clay with some limited gravel. The two water supply wells for IS (Test Well #11 GWIC 232334 and Test Well-Production 232332) are completed in the confined aquifer at 140 and 135-feet depth, respectively. The confined aquifer is composed of brown sand with gravel. In 2009 RLK Hydro conducted a 72-hour aquifer pump test on Well #11 (the supply well) using wells #8 and #9 as observation wells. This test indicated a confined aquifer.

On the Tobacco Plains, there is little or no surface drainage. From May through June, rivers and streams in this area are at high stage due to snow-melt, so they are losing out into the shallow alluvial aquifer reservoirs deposited along the surface water bodies. At the end of June, the river stage decreases, and ground water is retained in bank-storage for a time before it discharges to surface water.

In general, lakes in the area are sourced from snow-melt and fed by ground water held in storage in deposits adjacent to the lakes. The majority of these are lakes are pothole-type lakes that are not hydraulically connected.

The nearest surface water to the ISS is Indian Creek. Indian Creek is a perennial stream located approximately 560 feet southeast of Outfall 001. This is a losing stream based on the fact that this is a “clogged” (RLK, 2009) streambed or layer beneath the stream that has a lower hydraulic conductivity than the underlying soils. This surface water is hydraulically “disconnected” (RLK, 2009). General ground water flow is west to northwest.

2.6 GROUND WATER MONITORING WELLS

Based on what we know there is no shallow unconfined groundwater in the area so there are no monitoring wells associated with this permit.

3.0 WATER QUALITY STANDARDS AND NONDEGRADATION

Part of DEQ's mission is to protect, sustain, and improve the quality of state waters. Water quality standards provide the basis for effluent limits that DEQ applies to discharge permits (**Section 5**). These standards include three components: designated uses, water quality criteria, and nondegradation policy. DEQ protects all designated uses of state water by basing effluent limits on the most restrictive water quality limitations, intended to protect the most sensitive uses.

3.1 DESIGNATED USES

Since there is no shallow groundwater available specific conductivity has not been tested. However, the deep confined aquifer consists of Class I ground water and therefore is a high-quality water of the State. Class I ground waters must be maintained suitable for the following uses with little or no treatment:

- Public and private drinking water supplies
- Culinary and food processing purposes
- Irrigation
- Drinking water for livestock and wildlife
- Commercial and industrial purposes

DEQ protects all the assigned beneficial uses by protecting the most sensitive. Drinking water is the most sensitive use of this receiving water.

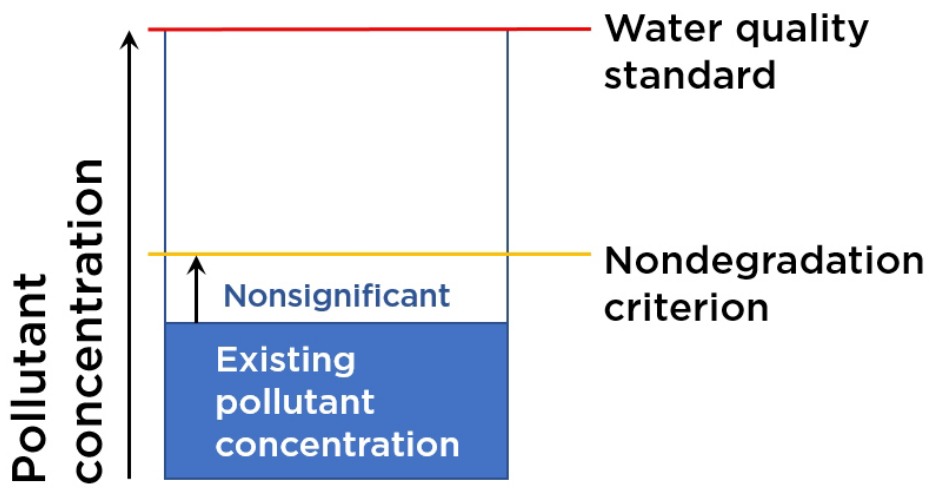
3.2 WATER QUALITY CRITERIA

Montana has water quality standards for both surface water and ground water. The numeric criteria for each are different because they must support different uses. DEQ writes permits to protect the most sensitive, thereby protecting all uses. DEQ's ground water standard for nitrate is 10.0 mg/L, as is the standard for nitrate + nitrite (as nitrogen). Class I ground water must be maintained suitable for use as a drinking water supply with little or no treatment, and therefore must meet the corresponding human health standard of 10.0 mg/L total nitrogen.

3.3 NONDEGRADATION

A nonsignificance / nondegradation review was conducted by DEQ and approval was granted on May 9, 2007.

Montana's nondegradation policy is intended to preserve the existing condition of high-quality state waters. Any water whose existing condition is better than the water quality standards must be maintained in that high quality. Nondegradation policy allows discharges to cause only nonsignificant changes in water quality. Changes in water quality that are deemed significant require an authorization to degrade. An authorization to degrade is not an authorization to pollute; the water quality standard must not be exceeded.



DEQ must determine whether the proposed discharge will result in significant changes in water quality.

3.4 NONSIGNIFICANCE

DEQ has determined that the activity is not considered to be a new or increased source resulting in a change of existing water quality occurring on or after April 29, 1993. The nature of the discharge has not changed since that determination. DEQ is therefore not required to perform a significance determination with this permit renewal . The applicable water quality standards for Class I ground water are summarized in **Table 3**. This permit includes monitoring, reporting, and corrective action requirements to establish, confirm, and maintain compliance with permit limitations.

4.0 MIXING ZONE

DEQ has not authorized a mixing zone for this system. Effluent water quality is monitored in relation to effluent limits from the “end of pipe” at the last point of contact: the drainfield dosing tank.

5.0 PERMIT CONDITIONS

Discharge permits include conditions that ensure compliance with the Montana Water Quality Act and the regulations used to implement it. These conditions include effluent limits as well as any special conditions that DEQ deems necessary to protect the quality of the receiving water.

Montana’s numeric water quality standards are published in Circular DEQ-7. Water quality criteria applicable to this permit are summarized in **Table 3**. The permit establishes effluent limits that will meet water quality standards and nondegradation criteria, thereby protecting beneficial uses and existing high-quality waters. The most restrictive criteria in **Table 3** provide the basis for the effluent limits.

DEQ evaluates and recalculates the limits using updated water quality data as part of every permit renewal cycle. In this way, DEQ protects the receiving water quality by continually assessing cumulative impacts to the receiving water.

Table 3. Applicable Ground Water Quality Criteria		
Parameter	Human Health Standard	Beneficial Use Support
Nitrate + nitrite as Nitrogen [N]	10 mg/L	-
Total Nitrogen	-	10 mg/L

5.1 TOTAL NITROGEN EFFLUENT LIMIT

Data show recirculating sand filter (RSF) wastewater treatment systems produce a high quality effluent and are considered to be a Level 2 treatment according to ARM 17.30.702(11). A Level 2 system must provide an effluent total nitrogen (TN) concentration of 24 mg/L or less [ARM 17.30.702(11)]. The Department has established that a properly installed, operated and maintained RSF wastewater treatment system meets the definition of a Level 2 system.

The prior permit limit for TN was set at 24 mg/L in the effluent at the last point of control: the distribution box prior to discharge to the subsurface drainfield. This permit will maintain the requirement of an effluent limit of 24 mg/L but will be converted to a load limit. Load limits are appropriate for discharges to ground water since the long-term loading is the greater concern in absence of aquatic life considerations. Additionally, load limits inherently control both the strength and volume of the discharge.

DEQ calculates an effluent load limit that protects receiving water quality and beneficial uses according to the following equation:

$$Llmt = DCeff * Ceff * CON$$

Where:
Llmt = effluent limitation-load limit
DCeff = design capacity of wastewater treatment system (gpd)
Ceff = allowable effluent concentration
CON = conversion factor [$8.34*10^{-6}$]

Load limit (lbs/day) Outfall 003 =
daily maximum effluent flow rate (gpd) x concentration (mg/L) x conversion factor [$8.34*10^{-6}$]
= (42,268.75 gpd) x (24.0 mg/L) x ($8.34*10^{-6}$)

Load limit (lbs/day) Outfall 003 = 8.46 lbs./day

Outfall 003 is the only one being used to discharge at this time. Other outfalls may go into use in the future. Therefore, effluent limits have also been established for these outfalls.

Load limit (lbs./day) Outfall 001 =
daily maximum effluent flow rate (gpd) x concentration (mg/L) x conversion factor [$8.34*10^{-6}$]
= (33,815 gpd) x (24.0 mg/L) x ($8.34*10^{-6}$)

Load limit (lbs./day) Outfall 001 = 6.77 lbs./day

Load limit (lbs./day) Outfall 002 =
daily maximum effluent flow rate (gpd) x concentration (mg/L) x conversion factor [$8.34*10^{-6}$]
= (25,361.25 gpd) x (24.0 mg/L) x ($8.34*10^{-6}$)

Load limit (lbs./day) Outfall 002 = 5.08 lbs./day

5.2 TOTAL PHOSPHORUS EFFLUENT LIMIT

DEQ previously determined (2010) that phosphorous discharged to ground water would reach the surface water Indian Creek in 63 years. A phosphorous breakthrough time of more than 50 years is considered nonsignificant. The 2010 permit did not establish an effluent limit for phosphorus and there is not one within this proposed permit renewal.

Based on the information and analyses presented, DEQ proposes the following numerical effluent limitations in **Table 4**.

Table 4: Final Effluent Limits –

OUFALL and Parameter	Units	Daily Maximum(1)(2)
OUTFALL 003 Total Nitrogen (as N)	Pounds per day	8.46
OUTFALL 001 Total Nitrogen (as N)	Pounds per day	6.77
OUTFALL 002 Total Nitrogen (as N)	Pounds per day	5.08

Footnotes:

(1) See definition in Part V of permit.
(2) At the time of permit renewal Outfall 003 is the only active outfall discharging.

6.0 MONITORING AND REPORTING REQUIREMENTS

DEQ requires effluent monitoring to assure compliance with the effluent limitations and therefore water quality standards. Effluent monitoring is required as a condition of this permit. All monitoring and sampling required by this permit must be representative; therefore, the permit identifies specific monitoring locations. Monitoring requirements and rationale are summarized below.

6.1 EFFLUENT MONITORING

This permit includes numeric effluent limitations with specific magnitudes and durations to ensure the discharge will not cause or contribute to an exceedance of an applicable water quality standard (see **Section 3**). Accordingly, the permittee is required to monitor and report at a specified frequency in order to demonstrate compliance with these limitations. Effluent monitoring is only required for an active outfall. At this time Outfall 003 is the only active outfall. For inactive outfalls submit annual reports updating the status of inactive outfalls.

Notice is required to begin use of the inactive outfalls. DEQ will require monitoring reports for each outfall.

Effluent samples and discharge flow measurements must be representative of the nature and volume of the effluent. The effluent sample location (EFF-001) is located at the distribution box as shown in **Figure 4**. The permittee is required to maintain and report flow measurements using a flow-measuring device capable of measurements that are within 10 percent of the actual flow. The flow measuring device (FM-001) is located just prior to discharge in the drainfield (**Figure 4**). The flow measuring device must be installed and in operating condition prior to discharge.

Effluent monitoring and reporting requirements are summarized in **Table 5**.

All analytical methods must be in accordance with the Code of Federal Regulations, 40 CFR Part 136 for each monitored parameter.

Table 5: Effluent Monitoring and Reporting Requirements*

Parameter	Monitoring Location	Units	Sample Type(1)	Minimum Sampling Frequency	Reporting Requirements(1)(2)	Report Frequency	Rationale
Flow Rate(3)(4)	Flow Meter	gpd	Continuous	Continuous	Daily Max and Quarterly Average	Quarterly	Permit Compliance/ Effluent Characterization
Biochemical Oxygen Demand (BOD_5)	Dose Tank	mg/L	Grab	1/Quarter	Quarterly Average	Quarterly	Proper O&M/ Effluent Characterization
Nitrate + Nitrite (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance/ Proper O&M
Total Ammonia (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Proper O&M
Total Kjeldahl Nitrogen (as N)	Dose Tank	mg/L	Grab	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance
Total Nitrogen (as N)(4)	Dose Tank	mg/L	Calculate	1/Quarter	Daily Max and Quarterly Average	Quarterly	Permit Compliance
Phosphorus	Dose Tank	mg/L	Grab	1/Quarter	Quarterly Average	Quarterly	Proper O&M/ Effluent Characterization
Total Suspended Solids (TSS)	Dose Tank	mg/L	Grab	1/Quarter	Quarterly Average	Quarterly	Proper O&M/ Effluent Characterization

Footnotes:

*** Notice is required to begin use of the inactive outfalls. DEQ will require separate monitoring reports for each outfall .**

(1) See definitions in Part IV of the permit.

(2) Daily Maximum: Report highest measured daily value for the reporting period on Discharge Monitoring Report (DMR) form.

(3) If no discharge occurs during the reporting period, "No Discharge" shall be recorded on the DMR report form.

(4) Total Nitrogen is the sum of the Nitrate + Nitrite and Total Kjeldahl Nitrogen parameters.

6.2 GROUND WATER MONITORING

Extensive testing was done to find a shallow ground water table to monitor in the initial permitting. Ground water to monitor was not found and there has not been ground water monitoring. There will not be a condition of ground water monitoring included in this permit.

Table 6. Compliance Schedule

Action	Frequency	Completion Date	Report Due Date[1,2]
Complete **Annual Status Report for each individual Outfall.**[3, 4]	Annually	*At the end of each calendar year through term of permit.*	*Annually on January 28th. (The initial 2020 report is due 01/28/2021.)*

Footnotes:

(1) The actions must be completed on or before the scheduled completion dates.

(2) Reports must be received by DEQ on or before the scheduled report due dates. The reports must include all information as required for each applicable action permit condition.

(3) The completed plan/manual (action), in place of a written report, must be received by DEQ on or before the scheduled report due date.

(4) Sampling and reporting requirements are discussed in Section V.

PUBLIC NOTICE

Legal notice information for water quality discharge permits are listed at the following website: http://deq.mt.gov/Public/notices/wqnotices. Public comments on this proposal are invited any time prior to close of business on August 27, 2020. Comments may be directed to:

DEQWPBPublicComments@mt.gov

or to:

Montana Department of Environmental Quality
Water Protection Bureau
PO Box 200901
Helena, MT 59620

All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit. DEQ will respond to all substantive comments pertinent to this permitting action and may issue a final decision within thirty days of the close of the public comment period.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate, or that DEQ's tentative decision to deny an application, terminate a permit, or prepare a draft permit is inappropriate, shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period (including any public hearing). All public comments received for this draft permit will be included in the administrative record and will be available for public viewing during normal business hours.

Copies of the public notice are mailed to the applicant, state and federal agencies, and interested persons who have expressed interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this draft permit. Electronic copies of the public notice, draft permit, fact sheet, and draft environmental assessment are available at the following website: http://deq.mt.gov/Public/notices/wqnotices.

Any person interested in being placed on the mailing list for information regarding this permit may contact the DEQ Water Protection Bureau at (406) 444-5546 or email DEQWPBPublicComments@mt.gov. All inquiries will need to reference the permit number (MTX000219), and include the following information: name, address, and phone number.

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

APPENDIX A – SOILS INFORMATION

Indian Springs Soils Map

Primary Drainfield Soil Type:
1091 Iphil-Truscreek-Downey complex

Map Unit Legend			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
900	Pits, gravel	5.3	0.9%
1000	Arimo-Moiese complex, 0 to 15 percent slopes	34.7	5.9%
1051	Bohnly-Seelovers-Newbar family complex, 0 to 15 percent slopes	15.1	2.6%
1072	McCollum-Buist family, stony-Downey, bouldery complex, 0 to 10 percent slopes	40.2	6.8%
1073	Jocko, stony-Rondowa family, stony complex, 0 to 10 percent slopes	116.4	19.8%
1075	Tetrault-Canusa-Jocko complex, 1 to 20 percent slopes	35.5	6.1%
1091	Iphil-Truscreek-Downey complex, 0 to 10 percent slopes	187.0	31.9%
5102	Niarada-Niarada, greater slopes-Roosville complex, 2 to 30 percent slopes	152.9	26.0%
Totals for Area of Interest		**587.0**	**100.0%**

1091—Iphil-Truscreek-Downey complex, 0 to 10 percent slopes

Map Unit Setting

- *National map unit symbol:* 2v5vw
- *Elevation:* 2,560 to 2,720 feet
- *Mean annual precipitation:* 15 to 17 inches
- *Mean annual air temperature:* 43 to 45 degrees F
- *Frost-free period:* 108 to 116 days
- *Farmland classification:* Prime farmland if irrigated

Map Unit Composition

- *Iphil and similar soils:* 45 percent
- *Truscreek and similar soils:* 35 percent
- *Downey and similar soils:* 20 percent
- *Estimates are based on observations, descriptions, and transects of the map unit.*

Description of Iphil

Setting

- *Landform:* Terraces
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear
- *Parent material:* Glaciofluvial deposits

Typical profile

- *Ap - 0 to 8 inches:* silt loam
- *Bk1 - 8 to 16 inches:* very fine sandy loam
- *Bk2 - 16 to 33 inches:* fine sandy loam
- *C - 33 to 60 inches:* loamy fine sand

Properties and qualities

- *Slope:* 0 to 4 percent
- *Depth to restrictive feature:* More than 80 inches
- *Natural drainage class:* Well drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.71 to 2.13 in/hr)
- *Depth to water table:* More than 80 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Calcium carbonate, maximum in profile:* 21 percent
- *Available water storage in profile:* Moderate (about 7.9 inches)

Interpretive groups

- *Land capability classification (irrigated):* 2e
- *Land capability classification (nonirrigated):* 2e
- *Hydrologic Soil Group:* B
- *Ecological site:* Loamy (Lo) LRU 44A-B (R044AB032MT)
- *Hydric soil rating:* No

Description of Truscreek

Setting

- *Landform:* Terraces
- *Down-slope shape:* Linear
- *Across-slope shape:* Linear
- *Parent material:* Alluvium

Typical profile

- *Ap - 0 to 10 inches:* silt loam
- *Bw - 10 to 28 inches:* silty clay loam
- *Bk - 28 to 60 inches:* silty clay loam

Properties and qualities

- *Slope:* 0 to 4 percent
- *Depth to restrictive feature:* More than 80 inches
- *Natural drainage class:* Well drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high (0.21 to 0.71 in/hr)
- *Depth to water table:* More than 80 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Calcium carbonate, maximum in profile:* 20 percent
- *Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
- *Available water storage in profile:* High (about 11.1 inches)

Interpretive groups

- *Land capability classification (irrigated):* 2e

- *Land capability classification (nonirrigated):* 2e
- *Hydrologic Soil Group:* C
- *Ecological site:* Loamy (Lo) LRU 44A-B (R044AB032MT)
- *Hydric soil rating:* No

Description of Downey

Setting

- *Landform:* Terraces
- *Down-slope shape:* Convex
- *Across-slope shape:* Linear
- *Parent material:* Alluvium

Typical profile

- *A - 0 to 8 inches:* silt loam
- *AB - 8 to 14 inches:* gravelly loam
- *2Bk1 - 14 to 20 inches:* extremely gravelly loamy coarse sand
- *2Bk2 - 20 to 60 inches:* extremely gravelly coarse sand

Properties and qualities

- *Slope:* 0 to 10 percent
- *Depth to restrictive feature:* More than 80 inches
- *Natural drainage class:* Somewhat excessively drained
- *Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.71 to 2.13 in/hr)
- *Depth to water table:* More than 80 inches
- *Frequency of flooding:* None
- *Frequency of ponding:* None
- *Calcium carbonate, maximum in profile:* 24 percent
- *Salinity, maximum in profile:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
- *Available water storage in profile:* Very low (about 3.0 inches)

Interpretive groups

- *Land capability classification (irrigated):* 4e
- *Land capability classification (nonirrigated):* 6e
- *Hydrologic Soil Group:* B
- *Ecological site:* Droughty (Dr) LRU 44A-B (R044AB036MT)
- *Hydric soil rating:* No

APPENDIX B – REFERENCES

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- Circular DEQ-2 – Design Standards for Wastewater Facilities.
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- Circular DEQ-7 – Montana Numeric Water Quality Standards, Required Reporting Values, and Trigger Values.

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