



WATER PROTECTION BUREAU

Agency Use
Permit No.:
Date Rec'd
Rec'd By

FORM
LA-1

Land Application
Domestic, Industrial & Other Wastewater

This form must be accompanied by DEQ Form 1. Form LA-1 is to be used for facilities that discharge or propose to discharge domestic wastewater, wastewater from the process of business or industry or the development of any natural resource together with any sewage that may be present (industrial waste), or other waste and fulfills the requirements of ARM 17.30.1023(4). Please read the attached instructions before completing this application. Do not leave blank spaces; if a question is not applicable put an 'NA' in the space provided. You must print or type legibly; applications that are not legible will be returned.

Section A – Facility/Site Information *(Must be the same as Form 1)*

Facility Name _____

Facility Location _____

Facility Contact / Title _____

Mailing Address _____

City, State, Zip _____

Telephone Number(s) _____

Vicinity Map:

The following information must be clearly labeled on a project vicinity map attached to this application. Please identify location and name of adjacent surface water, location and ownership of water supply wells, springs, and other ground water intake structures within 1 mile of the proposed or existing source(s).

Facility Site Plan:

Attach to this application a Facility Site Plan drawing(s) showing the topography of the area extending at least to the property lines of the facility. The map must show the outline of buildings, structures, parking areas, north arrow, scale and facilities directly pertinent to processes, structures and discharges to be covered by the permit that may be issued in response to this application. At minimum, the location of each of the existing and proposed structures must be clearly labeled on the map including but not limited to: wastewater collection and conveyance structures, wastewater treatment facilities, wastewater disposal structures/systems, and monitoring or supply well location(s). The required information must be clearly labeled on the Facility Site Plan. For facilities that cover larger land areas, specific portions of the Facility Plan may be included on separate drawing(s) at a smaller scale to provide necessary detail.

Section B – Application and Source Status *(Check all applicable boxes.)*

Application Status	Source Status
<input type="checkbox"/> New, no existing GWPCS Permit	<input type="checkbox"/> New or Proposed
<input type="checkbox"/> Permit Renewal	<input type="checkbox"/> Existing Source
<input type="checkbox"/> Permit Modification	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Other: _____	_____

Section C – Outfall Location

For each outfall, provide the latitude and longitude, and method of land application of wastewater.

Outfall Number <i>(list)</i>	Latitude			Longitude			Method of Disposal
	Deg	Min	Sec	Deg	Min	Sec	
001							
002							

Section D – Collection System Information

For each outfall list all operations contributing wastewater to the effluent stream, including process wastewater, sanitary wastewater, cooling water and stormwater runoff (i.e. stormwater, floor drains, sump collection, sanitary sewer, process wastewater, other).

Outfall #	Operation(s) Contributing Flow			
	Operation <i>(list)</i>	Average Daily Flow <i>(include units)</i>	Maximum Daily Flow <i>(include units)</i>	Average Annual % Contribution
001				
002				

Section E – Treatment System Capacity

For *new* treatment works, provide hydraulic design capacity information; for *existing* systems, provide *both* design and measured information.

	Design Capacity	Measured Flow		
		Two Years Ago	Last Year	This Year
Average Daily Flow, gpd				
Maximum Daily Flow, gpd				
Flow Measurement Device(s): Manufacturer: _____ Type: _____				

Section F - Treatment System Description

(Describe the treatment system(s) or best management practices (BMP's) used to reduce pollutants. Attach additional sheets if necessary.)

What levels of treatment are provided? Check all that apply.

- Conventional
 Level II
 Primary
 Other (i.e., experimental) _____
 Nutrient Reduction System

Indicate the method of treatment for wastewater:

- None
 Intermittent Sand Filter
 Recirculating Sand Filter
 Recirculating Trickling Filter
 Aerobic Sewage Treatment Unit
 Chemical Nutrient Reduction
 Passive Nutrient Reduction
 Other (specify) _____

Indicate the following removal rates (as actual or estimated):

- Design BOD₅ or CBOD₅ Removal _____ %
 Design TSS Removal _____ %
 Design Total Phosphorus Removal _____ %
 Design Total Nitrogen Removal _____ %
 Design Pathogen Removal _____ %
 Other _____

Yes
 No
 Has effluent testing information been collected for the wastewater treatment system proposed?
 If yes, submit effluent testing data for all parameters listed in Section M.

Method(s) of disinfection used for the effluent: _____

If no treatment is provided, please provide a brief explanation:

Line Drawing:

Attach a line drawing showing water flow through the facility and treatment system. Indicate sources of intake water, operations contributing wastewater to the effluent, any process water or waste holding ponds or impoundments and treatment units labeled to correspond to the more detailed descriptions in Section F. Construct a water balance on the line drawing showing average flows between intakes, operations, treatment units, flow measurement location(s), sampling locations and outfalls. If a water balance cannot be determined, provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

Scheduled Improvements and Schedules of Implementation.

Provide information on any uncompleted implementation schedule or uncompleted plans for improvements that will affect the wastewater treatment, effluent quality or design capacity of the treatment works.

Yes
 No
 Are planned improvements or implementation schedule required by local, state or federal agencies?

List the outfall number for each outfall that is covered by this implementation schedule: _____

Section G – Process Water or Waste Holding Ponds/Impoundments

Type/Purpose: _____

Total Capacity: _____ Units _____

Dimension: Length _____ Units _____

Width _____ Units _____

Design Depth: _____ Units _____

Detention Time: _____ Units _____

Liner Type: _____

Liner Specification:

Material: _____

Thickness: _____ Units _____

Permeability: _____ Units _____

Depth to ground water from bottom of excavation: _____ Units _____

Emergency overflow structure: Yes No

Leak Detection System: Yes No

Describe: _____

Yes No Has a leak or seepage test been performed for this facility? If Yes describe:

Describe: _____

Other Information: _____

Section H – Engineering Report(s)

A. If there is any technical evaluation concerning your wastewater collection & treatment, including engineering reports or pilot plant studies, check the appropriate box below.

Report Available, copy attached No Report

B. Provide the name and location of any existing facilities which, to the best of your knowledge, resembles this production facility with respect to production processes, wastewater constituents, or wastewater collection & treatment.

Name:

Location:

C. Other Information

(Use the space below to expand upon any of the above questions or to bring to the attention of the reviewer any other information you feel should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary.)

Section I – Chemical Additions

List all chemical(s), product(s) used in industrial process or facility maintenance. Attach additional pages where necessary. Submit a complete list of chemicals; include products used even on a temporary basis (Material Safety Data Sheets – MSDS – may be submitted in addition to the list).

Name(s): _____	Name(s): _____
Manufacture(s): _____	Manufacture(s): _____
Name(s): _____	Name(s): _____
Manufacture(s): _____	Manufacture(s): _____
Name(s): _____	Name(s): _____
Manufacture(s): _____	Manufacture(s): _____

Section J – Sludge

Identify transporter and treatment works facility responsible for sludge removal and/or treatment. If sludge is not removed from facility, identify means of disposal.

Transporter

Name _____
Address _____
Telephone _____

Treatment works facility

Name _____
Address _____
Telephone _____

Sludge Disposal

Indicate the method(s) used for disposal of sludge generated during wastewater treatment.

<input type="checkbox"/> Composting Facility	<input type="checkbox"/> Land application
<input type="checkbox"/> Disposal at WWTP	<input type="checkbox"/> Landfill (Municipal, Hazardous Waste)
<input type="checkbox"/> Other - Describe: _____	

Section K – Climate (Optional)

Provide the following climatological descriptor(s) of the hydraulic management unit. (See instructions for further details).

- Total mean annual precipitation: _____
- Total mean daily precipitation during growing season: _____
- Total mean annual evapotranspiration: _____
- Total mean daily evapotranspiration during growing season: _____
- Length of growing season: Month _____ Day _____ to Month _____ Day _____
- No. of frost free days per year: _____
- Total mean annual wind speed (mph): _____
- Total mean daily wind speed (mph) during growing season: _____
- Total mean annual air temp: _____
- Total mean daily air temp during growing season: _____

Provide the sources of information and how information was interpreted:

Section L – Disposal System

- Yes No Does the wastewater treatment system have the ability to discharge the effluent to the land surface?
 If yes, check the following effluent type(s) the treatment works use to discharge to the land surface.
- Discharges of treated effluent Discharges of untreated effluent Discharges of storm water
 Combined sewer overflow points Constructed emergency overflows (prior to treatment system)
 Other - Describe: _____

Indicate the method(s) of wastewater disposal. (Check all that apply)

- Irrigation System Ridge and Furrow Distribution Graded Border Distribution
 Rapid Infiltration Slow Infiltration Infiltration/Adsorption trenches
 Evapotranspiration Absorption Trenches
 Overland Flow Application (i.e. flood, dike, gated pipe irrigation)
 Method of Overland Application _____
 Other(s) (explain) _____

Is discharge Continuous or Intermittent?

Indicate the month(s) land application is conducted.

- Jan Feb March April May June July Aug Sept Oct Nov Dec

Indicate irrigation schedule for growing season & non-growing season _____

Additional Information

Use the space below to expand upon the reply to any of the above questions or to bring to the attention of the reviewer any information you believe should be considered for establishing permit limitations for the proposed facility. Attach additional sheets if necessary.

Section M – Description of Land Application Discharge (Outfalls)

Location of Outfall _____

(City or Town) (Zip Code) (County)

Township ____ N S Range ____ E W Section ____ Latitude _____ Longitude _____

Elevation of hydraulic management unit _____ (ft above sea level)

Number of acres in hydraulic management unit _____

% Slope of topography of hydraulic management unit _____

Maximum and Average volume of wastewater applied in million gallons per day (mgd) per acre

Max _____ (mgd) Average _____ (mgd), during growing season

Maximum and Average volume of wastewater applied in million gallons per day (mgd) per acre

Max _____ (mgd) Average _____ (mgd), during the non growing season

Yes No Land application by spray irrigation? If yes, provide the following information:

Method of spray irrigation (i.e. sprinklers, pivot, wheel lines, etc): _____

Spray irrigation system Manufacturer: _____

Spray irrigation system Model: _____

% irrigation efficiency: _____

Specify projected and/or actual loading rates to the hydraulic management unit for the following:

Nitrogen (lbs/acre/yr) _____

Phosphorus (lb/acre/yr) _____

Potassium (lb/acre/yr) _____

Total Dissolved Solids (lb/acre/yr) _____

Organic (COD) Loading (lb/acre/day during application periods) _____

Trace elements loading (units as appropriate) _____

Other: _____

Manufacturer and model of flow measuring device(s) used with land application equipment _____

Type or species of cover crop: _____

Estimated yield (tons/acre): _____ Harvest frequency: _____

Yes No Does the applicant plan to apply wastewater at agronomic rates?

For each crop listed, please provide:

Nitrogen Uptake: _____

Phosphorous Uptake: _____

Consumptive Water use: _____

Nutrient Requirements: _____

(Provide a description below of how these values were obtained:) _____

Describe grazing management, including species or animal type(s) grazing land application site and dates of grazing: _____

Site History:

Yes No Has site previously been used for land application? If 'Yes' please describe the type of water land applied (wastewater, irrigation water, process wastewater, etc:) _____

Acreeage of hydraulic management unit: _____

Volume of water land applied: _____

Irrigation method use: _____

Dates of land application: _____

SOILS:

Yes No Has soils survey map identifying soils on the land application site been included?
(Map must show legend w/north arrow, symbols and map soils units description)

Yes No. Does the number of soil samples collected significantly characterize the land application site?
(See instructions for further detail).

Representative soil profile (texture & depths to 60 inches) should be included:

0 – 10 inches _____

10 – 20 inches _____

50 – 60 inches _____

_____ % soil moisture of soil samples collected

Depth to limiting layer _____ Depth of organic matter _____ Permeability _____

Chemical analysis of soils should be conducted in the 0 – 12 and 12 – 24 inch depths.

Chemical analysis of soils should include the following:

Nitrate _____

Potassium _____

Ammonium _____

Organic Matter _____

Phosphorus _____

SAR _____

Electrical Conductivity _____

pH _____

Disinfection

Yes No Effluent is disinfected prior to land application

Indicate the months that effluent is disinfected prior to land application

Jan Feb March April May June July Aug Sept Oct Nov Dec

Method(s) of disinfection used for the effluent discharged to the land application site

Chlorination Ozone Heat treatment Other, specify _____

Manufacturer of disinfection unit(s), if applicable _____

If chemical additives are used for disinfection, specify how often they are added and at what volume: _____

Additional Information

Provide additional information and narrative to bring to the attention of the reviewer any information you believe should be considered in establishing permit limitations for the proposed facility. Attach additional sheets if necessary. If disinfection methods include the addition of chemicals, specify which chemicals and how much is added.

Sections L, M, N must be completed for each outfall identified in Section C

Outfall #: _____

Section N – Local Hydrogeology

Depth to first ground water _____ ft
 Depth to seasonal aquifer _____ ft
 Depth of seasonal high ground water _____ ft Season encountered _____
 Depth to shallowest impermeable geologic strata (if known) _____ ft
 Direction of ground water flow _____ (azimuth or bearing)

Standard Mixing Zone – (Required Information*)

Hydraulic Gradient * (I) _____ ft/ft
 Hydraulic Conductivity * (K) _____ ft/day
 Maximum width of source perpendicular to the direction of ground water flow * _____ ft
 Depth of Mixing Zone _____ ft
 Width of Mixing Zone _____ ft
 Length of Mixing Zone _____ ft
 Distance from source to facility property boundary _____ ft
 Volume of groundwater in Mixing Zone _____ cubic ft/day

Describe how these values were obtained. Attach relevant supplemental information as necessary:

Source Specific Mixing Zone ARM 17.30.518

If source specific mixing zone is being requested, provide justification in accordance with AMR 17.30.518. Submit all supplemental data documenting how hydraulic gradient, background concentrations, effluent concentrations and hydraulic conductivity were determined. This includes but is not limited to well logs, aquifer test methods and calculations, potentiometric maps and hydrogeologic reports or studies conducted in the area.

Ground Water Characteristics

Test	Units	Minimum Value	Maximum Value	Average Value	No. of Measurements	Source of Data
Specific Conductivity	µS/cm					
Total Dissolved Solids (TDS)	mg/L					
pH	s.u.					
Chloride	mg/L					
Escherichia Coli*	No./100ml					
Kjeldahl Nitrogen, Total, as N	mg/L					
Nitrate + Nitrite, as N	mg/L					
Total Organic Carbon (TOC)	mg/L					
Other:						

*Fecal Coliform Bacteria will be accepted as substitute

Yes No Effluent has been analyzed for metals. If 'Yes', attach laboratory reports.

Attached laboratory sheets for parameters analyzed in effluent

Name of all surface waters within 1 mile	Distance	Direction

Section O – Effluent Characteristics (See Instructions)

Pollutant or Parameter	Maximum		Average		No. of Samples	Analytical Method	ML	Source of Estimate
	Concentration	Units	Concentration	Units				
Conventional Pollutants								
pH (Minimum)								
pH (Maximum)								
Total Suspended Solids (TSS)								
Biochemical Oxygen Demand (BOD ₅)								
Oil & Grease								
Chlorine, Total Residual (TRC)								
Escherichia Coli								
Dissolved Oxygen								
Ammonia, as N								
Kjeldahl Nitrogen, Total, as N								
Nitrate + Nitrite, as N								
Phosphorus, Total, as P								
Total Dissolved Solids								
Specific Conductivity								
Chloride								
Sulfate								
Alkalinity, as CaCO ₃								
Iron, Total Recoverable								
Manganese, Total Recoverable								
Metals (Total Recoverable), Cyanide, Phenols and Hardness								
Antimony								
Arsenic								
Beryllium								
Cadmium								
Chromium								
Copper								
Lead								
Mercury								
Nickel								
Selenium								
Silver								
Thallium								
Zinc								
Cyanide								
Total Phenolic Compounds								
Hardness (as CaCO ₃)								
Use this space (or a separate sheet) to provide information on other metals requested by the permit writer:								
Volatile Organic Compounds								
Acrolein								
Acrylonitrile								
Benzene								
Bromoform								
Carbon Tetrachloride								
Clorobenzene								

Pollutant or Parameter	Maximum		Average		No. of Samples	Analytical Method	ML	Source of Estimate
	Concentration	Units	Concentration	Units				
Benzo(a)Pyrene								
3,4 Benzo-Fluoranthene								
Benzo(ghi)Perylene								
Benzo(k)Fluoranthene								
Bis (2-Chloroethoxy) Methane								
Bis (2-Chloroethyl)-Ether								
Bis (2-Chloroiso-Propyl) Ether								
Bis (2-Ethylhexyl) Phthalate								
4-Bromophenyl Phenyl Ether								
Butyl Benzyl Phthalate								
2-Chloronaphthalene								
4-Chlorophenyl Phenyl Ether								
Chrysene								
Di-N-Butyl Phthalate								
Di-N-Octyl Phthalate								
Dibenzo(A,H) Anthracene								
1,2-Dichlorobenzene								
1,3-Dichlorobenzene								
1,4-Dichlorobenzene								
3,3-Dichlorobenzidine								
Diethyl Phthalate								
Dimethyl Phthalate								
2,4-Dinitrotoluene								
2,6-Dinitrotoluene								
1,2-Diphenylhydrazine								
Fluoranthene								
Fluorene								
Hexachlorobenzene								
Hexachlorobutadiene								
Hexachlorocyclo-Pentadiene								
Hexachloroethane								
Indeno(1,2,3-CD)Pyrene								
Isophorone								
Naphthalene								
Nitrobenzene								
N-Nitrosodi-N-Propylamine								
N-Nitrosodi-Methylamine								
N-Nitrosodi-Phenylamine								
Phenanthrene								
Pyrene								
1,2,4-Trichlorobenzene								
Use this space (or a separate sheet) to provide information on other base-neutral compounds requested by the permit writer:								
Use this space (or a separate sheet) to provide information on other pollutants (e.g., pesticides) requested by the permit writer:								

Section P - Alternative Water Supply and Alternate Disposal

In the space provided below describe proposed measures to be taken to provide alternative water supplies, treatment and alternative disposal practices in the event any domestic, municipal, agricultural, or commercial/industrial well is adversely affected by the operation of the source.

Section Q – Land Ownership

New sources or new applicants must submit a list of surface owners and leasees of land within 1 mile of the proposed source, as required by ARM 17.30.1023(4)(d).

CERTIFICATION

Section R – Applicant Information: This application must be completed, signed, and certified as follows:

- For a corporation, by a principal officer of at least the level of vice president;
- For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or
- For a municipality, state, federal, or other public facility, by either a principal executive officer or ranking elected official.

All Applicants Must Complete the Following Certification:

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

A. Applicant Name (Owner/Operator) *(Must be the same as Form 1)*

B. Name and Official Title (Type or Print)

C. Phone No.

D. Signature

E. Date Signed

INSTRUCTIONS FOR

Form LA1 – Land Application – Domestic, Industrial & Other Wastewater

Who Must File Form LA-1

Form LA-1 must be completed in conjunction with DEQ Form 1. This form may be used by facilities which discharge or propose to discharge domestic wastes, industrial wastes, or other wastes, to ground water through irrigation, infiltration, percolation or other methods of subsurface disposal. Your application will not be considered complete unless you have answered every question on this form and Form 1. If an item does not apply to you, enter “NA” (for ‘not applicable’) to show that you considered the question. If the applicant is providing supplemental information in fulfillment of the required information in this form, attach the material to the application and reference the material in the space provided.

The applicant shall keep records of all data used to complete permit applications and any supplemental information submitted under this application for a period of at least three years from the date the application is signed. ARM 17.30.1322(16)

Attaching Additional Information:

The applicant is required to provide the requested information in the space(s) provided. However, several sections of the application require the submittal of additional information, or for the applicant to attach additional information to clarify how the requested information was derived. Attachments should be clearly labeled as ‘Attachment X.Y’ where ‘X’ refers to the Section of the application where the material is requested, and ‘Y’ refers to the sequential number of the attachment determined by the applicant based on the number of attachments in a specific section.

For example: Section F states that additional sheets may be attached if necessary. This material would be labeled ‘Attachment F.1’, if included. A line drawing is also requested in this section (required material). This drawing should be labeled ‘Attachment F.2’, if supplemental treatment information is submitted or: ‘Attachment F.1’ if it is not submitted.

Section A - Facility/Site Information:

Enter Facility Name and other information as it appears on DEQ Form 1.

Section B - Application and Source Status:

Check the box that most accurately describes the category of the proposed permit application.

Section C - Outfall Location:

An outfall is the physical location where an effluent is discharged from the facility (disposal system). Provide the longitude and latitude to the nearest 15 seconds, and a brief description of the Land Application method for each outfall. Outfalls should be numbered in consecutive order, starting with the lowest number. For example: 001, 002, 003 . . . See Section L for typical methods of disposal. List each outfall (land application site) from which wastewater will be or is discharged.

Section D - Collection System information:

List all sources of wastewater to each outfall. Operations may be described in general terms (*for example, “dye-making reactor” or “distillation tower”*). You may estimate the flow contributed by each source if no data are available. For stormwater discharges you may estimate the average flow, but you must indicate the rainfall event upon which the estimate is based and the method of estimation. Include infiltration and inflow to the system.

Section E - Treatment System Capacity:

Provide the hydraulic design capacity of the treatment system. The design average flow is the average of the daily volumes to be received for a continuous 12-month period expressed as a volume per unit time (gallons per day). However, the design average flow for facilities having critical seasonal high hydraulic loading periods must be based on the daily average flow during the seasonal period. The design maximum day flow is the largest volume of flow to be received during a continuous 25-hour period expressed as a volume per unit time. For an existing

system, provide the measured volume of wastewater contributed to the treatment system. List the type of flow measuring devices employed, manufacture and model of flow measurement device and the frequency at which it is calibrated. If no measurement device is employed, provide a description of how flows are estimated.

Section F - Treatment System Description:

Use the space provided to describe the treatment system or best management practice used to reduce pollutant loads prior to discharge. Also attach a line drawing showing the route taken by water in your facility from intake to discharge. Show all operations contributing wastewater, including process and production areas, sanitary flows, cooling water, and stormwater runoff. The water balance should show average flows. Show all significant losses of water to products, atmosphere, and discharge. You should use actual measurements whenever available; otherwise use your best estimate. An example of an acceptable line drawing appears in Figure 1 of these instructions.

Section G - Process Water or Waste Holding Ponds/Impoundments

ARM 17.30.1023(5) requires that the applicant provide specific information regarding the nature of any proposed or existing pond sealants and linings. If multiple ponds are located at this facility, copy this section and complete for each pond.

Section H - Engineering Reports:

Attach the requested information or describe in space provided. If no report(s) are available, check the applicable box.

Section I - Chemical Additions:

List all chemical(s), product(s) used in industrial process or facility maintenance. Attach additional pages where necessary. Submit a complete list of chemicals; include products used even on a temporary basis (Material Safety Data Sheets – MSDS – may be submitted in addition to the list).

Section J - Sludge:

Indicate how any sludge or treatment byproducts will be disposed. This includes screenings, grit, solids or semi-solid wastes.

Section K - Climate:

Provide a representative description of the climate at the land application site. It is recommended that historical climate data be obtained from the closest U.S. Department of Interior, Bureau of Reclamation “AgriMet” weather station (http://www.usbr.gov/gp/agrimet/agrimet_station_list.cfm) or United States Department of Agriculture, National Resources Conservation Service weather station (<http://www.wrcc.dri.edu/summary/mapmt.html>). This section is optional, however if this information is not provided the Department will use those values it finds are most representative of site conditions.

Sections L, M, N must be completed for each outfall identified in Section C

Section L - Disposal System:

Indicate the method and frequency of discharge. A discharge is intermittent unless it occurs without interruption, except for infrequent shutdowns for maintenance, process changes or other similar activities. A discharge is seasonal if it occurs only during certain parts of the year. Irrigation schedule includes the number of hours each day and the number of days per week wastewater is land applied.

Section M - Description of Land Application Discharge (Outfalls):

List all information requested. Be as specific as possible. Attach additional information if space is not available on application form.

The applicant should follow the soil sampling protocols should follow those outlined in Montana State University Extension Service “Nutrient Management Module No. 1”. Available at: www.montana.edu/wwpb/pubs/mt44491.pdf

Section N - Local Hydrogeology and Mixing Zone Information:

ARM 17.30.1023(5) requires that the applicant provide a description of local hydrogeologic conditions; additional information may be necessary if a mixing zone is necessary. Provide, at minimum, the required information for a standard mixing zone. If a source specific mixing zone is requested, the applicant must provide the information described in ARM 17.30.518 as an attachment to this application form.

Hydraulic gradient is a measure of the slope of the water table determined by the change in static head per unit distance in a given direction. Three applicable methods for acquiring this data are: static water elevations measured in onsite/near-site wells, published water table or potentiometric maps of the shallowest aquifer, or calculation of one-third of regional topographic slope. The most accurate method to determine the hydraulic gradient in a horizontal direction is to measure the static water elevations in a minimum of three wells in accordance with the following procedures:

A minimum of three wells (not oriented in a straight line in map view) will be required to define the plane of the ground water table. Each well will be screened in the same aquifer (i.e., shallowest ground water beneath the site) using the minimal length of screen (10 feet) plus any additional screen length to allow for seasonal ground water level fluctuations. The elevation of the measuring point of each well (top of casing) shall be surveyed to the nearest 0.01 foot. All static water levels shall be measured to the nearest 0.01 foot, on the same day to minimize the potential for variable external factors (e.g., weather, irrigation). The wells shall be located on a USGS topographic map or suitable scaled site map to construct the ground water flow map.

A mixing zone is a limited area of a surface water body or a portion of an aquifer where initial dilution of a discharge takes place and where water quality changes may occur and where certain water quality standards may be exceeded. A person applying for a mixing zone must specify the type of mixing zone and provide the applicable information required by the Department. Mixing zones are described in Title 17, Chapter 30, Subchapter 5 of the Administrative Rules of Montana (ARM). A mixing zone may or may not be granted by the Department based on the criteria established in this rule.

Section O - Effluent Characteristic:

ARM 17.30.1023(5) requires the applicant to provide the chemical and physical characteristics of the wastewater. All pollutant levels must be reported as concentration or as total mass (except for discharge flow, pH, specific conductance and temperature). Total mass is the total weight of pollutants discharged over a day. All information reported must be based on data collected through analysis conducted using 40 CFR Part 136 methods. In addition, this data must comply with QA/QC requirements of 40 CFR Part 136 and other appropriate QA/QC requirements for standard methods for analytes not addressed by 40 CFR Part 136. Grab samples must be used for pH, temperature, total residual chlorine, oil and grease, and fecal coliform. For pathogens, either fecal coliform or E. coli results may be provided. For all other pollutants, 24-hour composite samples must be used. The applicant need not submit data which has been previously reported to the Department on Discharge Monitoring Report (DMR) forms. Use the blank spaces to provide additional information on pollutants that are known by the applicant to be present in the wastewater that may cause or contribute to an exceedance of water quality standards. Samples must be collected at the last point of control prior to mixing with state waters. Any further questions on sampling or analysis should be directed to the Department.

1. Existing Sources

You are required to provide at least one analysis for each pollutant or parameter listed by filling in the requested information under the applicable column. Data reported must be representative of the facility's current operation (average daily value over the previous 365 days should be reported). Do not include data which was collected more than 3 years from the submittal date of this application.

2. New Dischargers

You are required to provide an estimated maximum daily and average daily value for each pollutant or parameter (exceptions noted on the form). Please note that follow-up testing and reporting are required no later than 2 years after the facility starts to discharge. Sampling and analysis are not required at this time. If, however, data from such analyses are available, then such data should be reported. The source of the estimates is also required. Base your determination of whether a pollutant will be present in your discharge

on your knowledge of the proposed facility's use of maintenance chemicals, and any analyses of your effluent or of any similar effluent. In providing the estimates, use the codes in the following table to indicate the source of such information.

<u>Engineering Study</u>	<u>Code</u>
Actual data from pilot plants	1
Estimates from other engineering studies	2
Data from other similar plants	3
Best professional estimates	4
Others	specify on the form

3. Testing Waiver

To request a waiver from reporting any of these pollutants or parameters, the applicant (whether a new or existing discharger) must submit to the Department a written request specifying which pollutants or parameters should be waived and the reasons for requesting a waiver. This request should be submitted to the Department before or with the permit application. The Department may waive the requirements for information about any pollutant or parameter if it determines that less stringent reporting requirements are adequate to support issuance of the permit.

Section P - Alternative Water Supply and Alternate Disposal:

ARM 17.30.1023(5)(c) requires that the applicant's proposed measures to be taken provide alternative water supplies or treatment in the event any domestic, municipal, agricultural, or commercial/industrial well is adversely affected by the operation of the source.

Section Q - Land Ownership:

New sources or new applicants must submit a list of surface owners and leasees of land within 1 mile of the proposed source, as required by ARM 17.30.1023(4)(d).

Table 1 - Testing requirements for toxic pollutants by industry category

Industrial Category	GCMS fraction Pollutant/Parameter Group			
	Metals	Volatile	Acid-Extractable	Base-Neutral
Adhesives and Sealants		X	X	X
Aluminum forming	X	X	X	X
Auto and other laundries	X	X	X	X
Battery manufacturing	X	X		X
Coal mining	X			
Coil coating	X	X	X	X
Copper forming	X	X	X	X
Electric and electronic compounds	X	X	X	X
Electroplating	X	X	X	X
Explosives manufacturing			X	X
Foundries		X	X	X
Gum and wood		X	X	
Gum and wood tall oil rosin		X	X	X
Gum and wood rosin based derivatives		X	X	X
Inorganic chemicals manufacturing	X	X	X	X
Iron and steel manufacturing	X	X	X	X
Leather tanning and finishing	X	X	X	X
Mechanical products manufacturing	X	X	X	X
Nonferrous metal manufacturing	X	X	X	X
Ore mining (base metals and precious metals)	X		X	
Organic chemicals manufacturing	X	X	X	X
Paint and ink formulation		X	X	X
Pesticides	X	X	X	X
Petroleum refining	X	X	X	X
Pharmaceutical preparations		X	X	X
Photographic equipment and supplies	X	X	X	X
Plastic and synthetic materials manufacturing		X	X	X
Plastic processing		X		
Porcelain enameling				
Printing and Publishing	X	X	X	X
Pulp and paperboard mills	X	X	X	
Rubber processing		X	X	X
Soap and detergent manufacturing		X	X	X
Steam electric power plants	X	X	X	
Textile mills		X	X	X
Timber products processing	X	X	X	X

Figure 1. Example of Line Drawing of Applicant Facility & Waste Water Treatment

