

# Information Requirements Table for Effluent Discharge

Application Tracking Number: [Click here to enter text.](#)  
 Authorization Number: [Click here to enter text.](#)  
 [ insert company / project name ]

Applicant Summary	
<b>Application Tracking #</b>	
<b>Authorization #</b>	
<b>Applicant / Facility Name:</b>	

Ministry of Environment and Climate Change Strategy	
<b>Prepared by:</b>	
<b>Title:</b>	
<b>Date:</b>	

The *Information Requirements Table (IRT) for Liquid Waste* is a tool used by Ministry of Environment and Climate Change Strategy (ENV) staff to document specific guidance and instructions given to an applicant pursuing authorization to discharge under the *Environmental Management Act*.

Note - this document was developed to capture all the items and complexities concerning liquid waste especially for large or highly sensitive projects across a variety of sectors where complex guidance and instruction might be necessary.

Accordingly, for any given application, not all the items will apply and not all required items will warrant detailed discussion of methods and other concerns.

As part of the Preliminary Application Phase, ENV will discuss with the applicant the items listed in this table to determine what will be required in support of their final application. A tick mark in the "Required" box of the "Requirements" Column in the table indicates an information item to be included into the application package as agreed to by both parties or as directed by ENV. Should it be determined that specific methods will be used to derive this information, this will be specified with a tick mark in the "Methods" box and specific details in the Comments column. In cases where complex impact assessments are to be undertaken, agreement on the methods used will be required. For simple methods, the methods used could be discussed with the applicant in a meeting and noted in the "Comments" column as agreed to in the table. For more complex methods, the applicant may be required to submit a "Methods Package" by an agreed date for ENV review, comment and acceptance. Once methods are accepted by ENV they should be either described in the "Comments" column and/or a reference made to the document describing the Methods Package.

If an IRT is required, the Final IRT will form part of an Application Instruction Document (AID) which documents application submission requirements for the applicant. The AID is issued by the Director after a preliminary application meeting has occurred. The AID will also include specific instructions related to the signoff of Qualified Professionals for Declaration of Competency and Conflict of interest.

When submitting the final application, please ensure the IRT is also submitted with the "Location" Column filled out to identify where each of the required items is located in the final application for all information requirements identified.

The ENV will be screening and assessing this application against this table and it is expected that the applicant does the same prior to any preliminary meetings and/or prior to any final submissions. The Ministry will be screening the final received application against the requirements noted in the Final AID to ensure it is complete before resources are dedicated to a full, detailed review.

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Information	Requirements	Comments	Location in Final Application
<b>1 PROJECT DESCRIPTION</b>			
1.1 Describe the project including proposed facilities, products, processes and discharges. Indicate the maximum intended operating duration (i.e., hours per day, days or months per year).	Required <input type="checkbox"/>		
1.2 Provide a detailed map of the project location including facilities and discharges. Identify surrounding land and water uses, and potential environmental receptors.	Required <input type="checkbox"/>		
1.3 Describe the project permitting history and list related reports.	Required <input type="checkbox"/>		
1.4 Describe major activities, infrastructure and waste management related to:			
1.4.1 Site preparation and construction	Required <input type="checkbox"/>		
1.4.2 Operations	Required <input type="checkbox"/>		
1.4.3 Closure and post-closure	Required <input type="checkbox"/>		
1.5 Describe specific before and after conditions for permit amendment applications.	Required <input type="checkbox"/>		
1.6 List of Qualified Professionals and signed Conflict of Interest & Declaration of Competency.	Required <input type="checkbox"/>	Must have a combination of suitable education, training, experience acceptable to the Director and both forms signed	
<b>2 ENVIRONMENTAL SETTINGS:</b> This section provides information regarding the environmental setting before proposed activities occur. Please follow the <a href="#">British Columbia Field Sampling Manual for Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment, and Biological Samples, BC Ministry of Water, Land and Air Protection, 2013</a> (or the most recent version) when designing and completing these environmental setting assessments. If environmental settings data collection design and methods differ from the manual, please provide a rationale and discuss with ENV staff at the pre-application stage.			
<b>2.1 Meteorology and Climate</b>			
2.1.1 Provide a <b>baseline meteorology and climate assessment</b> of the project area. The assessment should:			
2.1.1.1 Provide a detailed map showing the location of all site-specific and regional meteorological stations in relation to project facilities.	Required <input type="checkbox"/>		
2.1.1.2 Describe relevant meteorological and climate information sources for parameters such as precipitation, temperature and evaporation.	Required <input type="checkbox"/>		
2.1.1.3 Submit all climate data in an appendix (electronic preferred) including site photos, precipitation, temperature, snow water equivalent, etc. and provide monthly and annual summaries of relevant climatic parameters.	Required <input type="checkbox"/>		
2.1.1.4 Identify information gaps and describe site-specific meteorological data collection methods proposed to augment existing regional data.	Required <input type="checkbox"/>		

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<b>2.2 Surface Water Hydrology</b>			
2.2.1 Provide a <b>baseline hydrological assessment</b> of key surface drainages near the project area, to define seasonal flow regimes of local drainages. The assessment should:			
2.2.1.1 Provide monthly and annual stream flow/runoff summaries and critical low flow metrics.	Required <input type="checkbox"/>		
2.2.1.2 Describe the baseline assessment design, methods of hydrometric station installation, monitoring methods and quality control procedures, which should follow guidance in the Resource and Inventory Standards Committee (RISC) Manual of British Columbia Hydrometric Standards (most recent version).	Required <input type="checkbox"/>	<a href="https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/science-data/man_bc_hydrometric_stand_v10.pdf">https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/science-data/man_bc_hydrometric_stand_v10.pdf</a>	
2.2.1.3 Provide detailed hydrologic analysis of key surface drainages within the project area to define seasonal flow regimes of local drainages. Include monthly and annual stream flow/runoff summaries and critical low flow metrics.	Required <input type="checkbox"/>		
2.2.1.4 Provide maps showing all drainage basins (local and regional) that will be affected by the proposed project, areas of groundwater discharge, wetlands and notable topographic features.	Required <input type="checkbox"/>		
2.2.1.5 Provide hydrological data in an appendix (electronic preferred), including rating curves, manual measurements, plots of site-specific discharge, site photos, etc.	Required <input type="checkbox"/>		
2.2.1.6 Describe spatial or temporal gaps in the database, and provide record periods for all gauging stations (regional and project specific).	Required <input type="checkbox"/>		
<b>2.3 Hydrogeology</b>			
2.3.1 Provide a <b>baseline hydrogeological assessment</b> of the groundwater system around the project. The assessment should:			
2.3.1.1 Summarize groundwater information from the provincial databases related to aquifers, and their geology, demand and vulnerability.	Required <input type="checkbox"/>		

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2.3.1.2 Describe the baseline groundwater assessment design, monitoring, analysis and quality control procedures. The baseline assessment must be sufficiently robust to assist with future monitoring and detect potential groundwater changes as a result of the project.	Required <input type="checkbox"/>		
2.3.1.3 Describe aquifers and aquitards below and downgradient of the project, including gradients, storativity, hydraulic conductivity and groundwater flux.	Required <input type="checkbox"/>		
2.3.1.4 Provide a map with groundwater monitoring locations, seepage areas, proposed or existing discharges to ground.	Required <input type="checkbox"/>		
2.3.1.5 Submit a minimum of one year of groundwater levels and water quality data collected at a quarterly frequency.	Required <input type="checkbox"/>		
2.3.1.6 Describe the monitoring schedule and parameters, monitoring methods and data analysis, including quality controls.	Required <input type="checkbox"/>		
2.3.1.7 Submit water level contour maps, with seasonal variations, depicting groundwater flow direction (both horizontal and vertical, as may be applicable).	Required <input type="checkbox"/>		
2.3.1.8 Provide well logs, hydraulic test results, drill core and test pit pictures, monitoring well installation details and hydrostratigraphic cross sections.	Required <input type="checkbox"/>		
2.3.1.9 Describe all downgradient groundwater users (e.g. aquatic life, drinking water, etc.) within one kilometer of the project.	Required <input type="checkbox"/>		
2.3.1.10 Describe surface water groundwater interactions downgradient of the project.	Required <input type="checkbox"/>		
2.3.1.11 Develop a conceptual hydrogeological model that synthesizes all relevant information to describe	Required <input type="checkbox"/>		

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the source-transport-receptor linkages associated with the project.			
2.3.1.12 For discharges to ground, the groundwater baseline should include assessment of local hydrogeological conditions including, but not limited to, stratigraphy, soil classification, water table elevations, fluctuation and flow direction, soil and aquifer hydraulics including field-saturated hydraulic conductivity, groundwater flux, and subsurface travel times in both unsaturated and saturated zones.	Required <input type="checkbox"/>		
<b>2.4 Surface Water Quality</b>			
2.4.1 Provide a <b>baseline surface water quality assessment</b> for the project. The assessment should include:			
2.4.1.1 Identify potential downstream receptor groups (including applicable aquatic life, wildlife, livestock, irrigation, humans) for surface water in relation to proposed project related activities and discharges.	Required <input type="checkbox"/>		
2.4.1.2 Describe and justify baseline study design, methods, sampling sites and periods, analysed parameters and QA/QC procedures.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.4.1.3 Provide a detailed figure with sampling locations in relation to proposed or existing discharge locations, areas of disturbance and distribution of receptors.	Required <input type="checkbox"/>		
2.4.1.4 Provide data summaries (using appropriate statistics) that characterize spatial and temporal variations and identify location, frequency, seasonality, duration and magnitude of applicable standards exceedances or environmental quality guideline exceedances.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.4.1.5 Provide all raw data in a tabulated form, including applicable method detection limits (in appendices – and Excel compatible electronic files).	Required <input type="checkbox"/>		
2.4.1.6 Identify certified laboratories that conducted	Required <input type="checkbox"/>		

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sample analysis.			
2.4.1.7 Identify and discuss QA/QC concerns related to the data.	Required <input type="checkbox"/>		
2.4.1.8 Identify and assess spatial or temporal data gaps and uncertainties.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.4.1.9 For lakes, provide limnological characterizations at a representative deep station for each basin. Sampling design should be adequate to support determination of trophic status.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.4.1.10 Demonstrate that the baseline aquatic life monitoring program is sufficiently robust to assist future monitoring in detecting a significant predetermined change.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
<b>2.5 Sediment Quality</b>			
2.5.1 Provide a <b>baseline sediment quality assessment</b> near the project. The assessment should:			
2.5.1.1 Identify potential downstream receptor groups (including applicable aquatic life, wildlife, livestock, irrigation, humans) for sediment in relation to proposed project related activities and discharges.	Required <input type="checkbox"/>		
2.5.1.2 Describe and justify baseline study design, methods, sampling sites and periods, analysed parameters and QA/QC procedures.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.5.1.3 Provide a detailed figure with sampling locations in relation to proposed or existing discharge locations, areas of disturbance and distribution of receptors.	Required <input type="checkbox"/>		
2.5.1.4 Provide data summaries (using appropriate statistics) that characterize spatial and temporal variations and identify location, frequency, seasonality, duration and magnitude of applicable standards exceedances or environmental quality guideline exceedances.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.5.1.5 Provide all raw data in a tabulated form,	Required <input type="checkbox"/>		



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including applicable method detection limits (in appendices – and Excel compatible electronic files).			
2.5.1.6 Identify certified laboratories that conducted sample analysis.	Required <input type="checkbox"/>		
2.5.1.7 Identify and discuss QA/QC concerns related to the data.	Required <input type="checkbox"/>		
2.5.1.8 Identify and assess spatial or temporal data gaps and uncertainties.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.5.1.9 Demonstrate that the baseline monitoring program is sufficiently robust to assist future monitoring in detecting a significant predetermined change.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
<b>2.6 Aquatic Life</b>			
2.6.1 Provide a <b>baseline aquatic life assessment</b> near the project. The assessment should:			
2.6.1.1 Describe and justify baseline study design, methods, sampling sites and periods, analysed parameters and QA/QC procedures.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.6.1.2 Provide a detailed figure with sampling locations in relation to proposed or existing discharge locations, areas of disturbance and distribution of receptors.	Required <input type="checkbox"/>		
2.6.1.3 Provide data summaries (using appropriate statistics) that characterize spatial and temporal variations and identify location, frequency, seasonality, duration and magnitude of applicable standards exceedances or environmental quality guideline exceedances.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.6.1.4 Provide all raw data in a tabulated form, including applicable method detection limits (in appendices – and Excel compatible electronic files).	Required <input type="checkbox"/>		
2.6.1.5 Identify certified laboratories that conducted sample analysis.	Required <input type="checkbox"/>		

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2.6.1.6 Identify and discuss QA/QC concerns related to the data.	Required <input type="checkbox"/>		
2.6.1.7 Identify and assess spatial or temporal data gaps and uncertainties.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
2.6.1.8 Demonstrate that the baseline aquatic life monitoring program is sufficiently robust to assist future monitoring in detecting a biologically significant predetermined change.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
<b>2.7 Oceanography</b>			
2.7.1 Provide a <b>baseline oceanographic assessment</b> of key factors that may influence mixing and dispersion of the discharge in the marine or estuarine environment. The analysis must:			
2.7.1.1 Provide topographic features and degree of embayment.	Required <input type="checkbox"/>		
2.7.1.2 Identify estuaries and inflows and delineation of their zone of influence.	Required <input type="checkbox"/>		
2.7.1.3 Submit maps and analysis of bathymetric features.	Required <input type="checkbox"/>		
2.7.1.4 Identify normal wind direction, tidal influences and marine/stream currents.	Required <input type="checkbox"/>		
2.7.1.5 Submit inventory receiving water uses including recreational uses, fisheries resources, shellfish areas, water intakes and foreshore uses.	Required <input type="checkbox"/>		
2.7.1.6 Provide drogue studies at proposed outfall terminus location(s) to determine the influence of thermal or physical/chemical stratification characteristics, normal currents over a complete tidal cycle and whether currents are directed shoreward or toward important fisheries or recreational resources.	Required <input type="checkbox"/>		
2.7.1.7 Complete and submit one month of current meter readings (at bottom, and at stratification level).	Required <input type="checkbox"/>		
2.7.1.8 Complete and submit	Required <input type="checkbox"/>		



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conductivity/temperature/depth (CTD) profiles during most critical periods to establish stratification levels.			
2.7.1.9 Identify and assess spatial and temporal data gaps and uncertainties.	Required <input type="checkbox"/>		
<b>3 EFFLUENT DISCHARGES, MITIGATION, MANAGEMENT AND/OR TREATMENT</b>			
3.1 Provide a process flow diagram showing the waste streams.	Required <input type="checkbox"/>		
3.2 Provide full characterization of all effluent sources from the site. Indicate their source, maximum and average quality, quantity and frequency. Describe the methodology used for characterization.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
3.3 Provide a detailed site plan that includes locations and coordinates for each discharge location (coordinates must be in decimal degrees to the fourth decimal place).	Required <input type="checkbox"/>		
3.4 Describe mitigation measures to be used to limit discharge rates and contaminant concentrations.	Required <input type="checkbox"/>		
3.5 If untreated effluent concentrations at the source are predicted to exceed acute BC Water Quality Guidelines (BCWQG) undertake and submit a Best Achievable Technology Review by a Qualified Professional (QP) (see current <i>Fact Sheet Waste Discharges – Best Achievable Technology</i> ). Note: Where needed, an Initial Dilution Zone (IDZ) may typically only be considered after implementation of BAT.	Required <input type="checkbox"/>	<a href="https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/pulp-paper-wood/best_achievable_control_tech.pdf">https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/pulp-paper-wood/best_achievable_control_tech.pdf</a>	
3.6 If treatment is proposed, provide the following information:			
3.6.1 Specify the treatment design criteria including treatment capacity, retention times, and input and output water quantity and quality.	Required <input type="checkbox"/>		
3.6.2 Provide treatment system detailed design drawings including discharge works, certified, signed and stamped by a qualified profession.	Required <input type="checkbox"/>		
3.6.3 Provide rationale for expected treatment effectiveness (e.g., examples with similar conditions, bench scale tests, pilot tests), including an evaluation of effectiveness under potential variable operating conditions (e.g., flood or storm events).	Required <input type="checkbox"/>		
3.6.4 Describe all treatment process by-products (liquid, solid and gaseous), including quantity and quality, and provide a management plan for each, including sludge management plan if applicable.	Required <input type="checkbox"/>		
3.7 Propose effluent discharge limits for contaminants of potential concern that can be shown to be protective of the receiving environment and its receptors.	Required <input type="checkbox"/>		
3.8 Describe the proposed sampling and flow measuring facilities at discharge points.	Required <input type="checkbox"/>		
3.9 Describe the storm water management system and provide detailed design for proposed storm water works.	Required <input type="checkbox"/>		
3.10 Certification by Qualified Professionals - QP sign-off certifying that the wastewater facility as designed and/or as-constructed is capable of	Required <input type="checkbox"/>		

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meeting the proposed discharge requirements.			
3.11 Provide project and treatment system construction and commissioning schedule and related notification requirements.	Required <input type="checkbox"/>		
3.12 Provide a detailed description of any use of reclaimed water (effluent), including: <ul style="list-style-type: none"> <li>o A detailed description of the intended use.</li> <li>o Planned or potential public and/or worker exposure.</li> <li>o An evaluation of the implications for effluent quality based on potential exposure and user safety.</li> </ul>	Required <input type="checkbox"/>		
<b>4 ENVIRONMENTAL EFFECTS PREDICTION AND IMPACT ASSESSMENT</b>			
4.1 Identify the receptors and/or environmental values that may be at risk due to project related activities.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.2 Provide a figure, identify and justify spatial and temporal boundaries for effects predictions.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.3 Develop and submit a Conceptual Site Model. Describe and illustrate graphically the contaminant source, transport pathways from source to receptors. Estimate probabilities of occurrence and the risk, and develop a risk management matrix.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.4 Describe the size and edge of the Initial Dilution Zone (IDZ) at which point the BCWQG must be met. Please refer to the ENV Interim Technical Guidance 11: Development and Use of Initial Dilution Zones in Effluent Discharge Authorizations.	Required <input type="checkbox"/> Methods <input type="checkbox"/>	<a href="https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/tg11_development_and_use_of_idz.pdf">https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/tg11_development_and_use_of_idz.pdf</a>	
4.5 Identify by location and receptor groups, potential for effects as well as frequency, seasonality, magnitude and reversibility of the effects. Provide rationale for the effects assessment. Demonstrate through a weight of evidence approach that effluent and non-point source discharges will not cause toxicity within the IDZ (acute) and outside of the IDZ (acute or chronic). Identify any residual effects.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.6 Provide predicted incremental changes (e.g. monthly/annually) over existing receiving environment water, sediment quality and/or tissue quality at critical points downstream (e.g. within IDZ, edge of IDZ, near field and far field, sensitive habitat) and during critical time periods (e.g. low dilution 7Q10, high flows, spawning, hatching, etc.) This should be included for all project phases.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.7 Identify all locations, parameters, time periods, magnitude, frequency and seasonality for which exceedances of BCWQGs, Sediment Quality Guidelines, tissue guidelines, or applicable standards are predicted to occur in water, sediment or tissue quality.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.8 Describe predicted effects of project related activities, including all effluent and non-point discharges on the water balance, flows and water levels.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.9 Explain and justify assessment (e.g., drinking water quality, recreation, aquatic life, wildlife, livestock, irrigation) and measurement endpoints	Required <input type="checkbox"/> Methods <input type="checkbox"/>		

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(chemical, toxicological or biological) to identify expected and realistic worst case seasonal effects and trends.			
4.10 Describe and discuss the potential for bioaccumulation or bioconcentration of contaminants, and the associated risk to assessment endpoints (i.e., fish health, fish reproduction, consumers of fish, etc.).	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.11 Predict changes in aquatic receptors at species, community and/or ecosystem levels as appropriate due to water quality and water quantity changes due to the project, other anthropogenic activities and considering climate change.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.12 Identify risks to non-aquatic receptors, including wildlife, livestock and human health.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.13 Validate proposed effluent quality requirements based on a thorough assessment of discharge loading, and the effects assessment.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.14 Identify data gaps, uncertainties and risk and describe how they will be reduced and/or addressed in adaptive management and environmental monitoring programs.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.15 Where <b>models</b> are used:			
4.15.1 Conduct sensitivity analysis for the <b>water quality</b> model to identify the input parameters of most consequence to the model output. Consider the widest reasonable range of model inputs including but not limited to: <ul style="list-style-type: none"> <li>o hydro-climatic - wet and dry events representative of the streamflow variability in the project area</li> <li>o hydrogeologic – groundwater recharge, water levels and hydraulic conductivity</li> <li>o water quality - address uncertainty with regards to attenuation, water treatment, source terms, etc.</li> </ul>	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.15.2 Describe and justify receiving environment modelling approaches. Describe the models type, its assumptions, inputs and outputs.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.15.3 Provide calibration/validation statistics and plots for the models used.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.15.4 Identify data gaps, assumptions and uncertainty in the models used, and how they will be addressed.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.16 For impact assessment related to discharge to ground provide:			
4.16.1 Summary of the baseline hydrogeological setting and downgradient groundwater users (e.g. aquatic life, drinking water).	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.16.2 Description of the infiltration system, including its design and operation, maintenance and equipment monitoring.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.16.3 Description of the effluent treatment method, quantity and quality.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.16.4 Description of the 3-dimensional size of the IDZ zone, including its edge where the groundwater standards must be met. Describe the location of the edge of the IDZ in relation to the property boundary, the nearest water supply well or surface water.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.16.5 Estimation of the size of the groundwater mound from the proposed discharge and whether the mound or the discharge may extent to or daylight at ground surface.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		

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4.17 Methods and outcomes to predict effects from the proposed discharge on groundwater, including results and assumptions of modelling efforts (e.g. water balance, mass balance, numerical flow, contaminant transport).	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
4.18 Identify data gaps, assumptions and uncertainty in the models, and how they will be addressed.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
<b>5 DISCHARGE AND ENVIRONMENTAL MONITORING PROGRAMS</b>			
5.1 For all programs identify the objectives, and describe and justify the proposed study design/plan.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.2 Discharge Monitoring Program – describe how you will monitor the effluent discharge including location, frequency, parameters, QA/QC measures, and comparison to proposed discharge limits.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.3 Receiving environment monitoring programs - describe the pathway and receptor linkages:			
5.3.1 Groundwater Monitoring Program - include the number of monitoring wells to measure the background and receiving groundwater levels and quality, and maps depicting the monitoring sites. The program should summarize the monitoring well installation details, such as geographical coordinates of all wells, installation depth, screen interval and geology, and water levels. The plan should detail the sampling methods, monitoring parameters, frequency, and the applicable BC Contaminated Sites Regulation standards that will be met at the edge of the initial dilution zone.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.3.2 Surface Water Monitoring Program - include a plan to validate model predictions, where applicable the program may also include IDZ monitoring. The program should be developed to detect change and impacts.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.3.3 Marine Water Monitoring Program - include a plan to validate model predictions, assess water quality guidelines are being met and detect change and impacts to the receiving environment. The program should include at least: one control sampling station located outside the influence of the IDZ, a sampling station at the end of pipe, 3 sampling stations at the IDZ. Samples should be taken at the modelled trapping depth, surface and at depth. Sampling frequency should be 5 weekly samples in 30 days.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.3.4 Aquatic / Environmental Effects Monitoring Program – include weight of evidence assessment and cumulative effects monitoring in areas that may potentially be affected by anthropogenic activities. Demonstrate that the monitoring program is sufficiently robust to assist in detecting a biologically significant predetermined change.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.4 Describe and justify proposed data assessment techniques and reporting, including frequency and content, and notification requirements.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
5.5 Describe and justify quality assurance/quality control procedures.	Required <input type="checkbox"/> Methods <input type="checkbox"/>		
<b>6 MANAGEMENT PLANS</b>			

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 [ insert company / project name ]

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6.1 Operations and Maintenance Manual – Detailed operational procedures and preventative maintenance program, operator training and qualifications, inspection schedule, inventory of replacement parts, description of automated systems, warnings and alarms, including response and notification procedures.	Required <input type="checkbox"/>		
6.2 Treatment Residuals Management Plan - Provide a plan for disposing of treatment residuals in a manner approved under the <i>Environmental Management Act</i> .	Required <input type="checkbox"/>		
6.3 Commissioning Plan - Contains the notification, operational procedures and monitoring required to commission the facility.	Required <input type="checkbox"/>		
6.4 Contingency plan - Describes emergency procedures for the facility, stand-by or emergency power requirements, procedures for notifying a health officer when necessary, actions to take if the effluent fails to meet quality requirements, and alternate disposal or storage options (for reclaimed water when use is not possible).	Required <input type="checkbox"/>		
6.5 Episode Management Plan – Includes spills, nuisance, litter, odour, fire, flooding.	Required <input type="checkbox"/>		
6.6 Erosion and Sediment Control Plan – Contains planning and actions to mitigate erosion and sediment runoff during the project development and operation.	Required <input type="checkbox"/>		
6.7 Trigger and Response Plan – Describes monitoring triggers, responses, including confirmatory monitoring and mitigation strategies and implementation in the event that environmental benchmarks in the receiving environment, such as water guidelines, groundwater standards, and toxicology failures, are exceeded.	Required <input type="checkbox"/>		
6.8 Adaptive Management Plan – Describes and addresses outstanding key uncertainties of potential effects of the discharge following a cyclical process.	Required <input type="checkbox"/>		
6.9 Irrigation Plan - Documents the timing of reclaimed water use, maximum application rate and growing season based on the crop or vegetation, site specific loading, and nutrient and metals limits.	Required <input type="checkbox"/>		
6.10 Odour Control Plan – Contains planning and actions to mitigate odour generation during the project construction and operation.	Required <input type="checkbox"/>		
Closure Plan - In the case of a temporary treatment system, details decommissioning procedures for the facility.			
6.11 SEWAGE DISPOSAL (Not required if a Municipal Wastewater Regulation (MWR) registration is being pursued or if connected to an authorized system. May ONLY be included in effluent permit if the sewage discharge is combined with subject effluent and is <10% of that combined flow as per section 5(1)(b) of the MWR prior to discharge)	Required <input type="checkbox"/>		



# Information Requirements Table for Effluent Discharge

Application Tracking Number: [Click here to enter text.](#)  
 Authorization Number: [Click here to enter text.](#)  
 [ insert company / project name ]

Information	Requirements	Comments	Location in Final Application
<b>7 Describe treatment and disposal plan for sewage generated on-site including the maximum volume.</b>			
7.1 Provide a copy of the design drawings for the sewage treatment facility, signed and stamped by a qualified professional.	Required <input type="checkbox"/>		
7.2 Provide Commissioning, Operating and Contingency Plans as per MWR Part 2: Division 4.	Required <input type="checkbox"/>		
7.3 Provide sewage treatment facility classification (or pre-classification) under the Environmental Operators Certification Program (EOCP).	Required <input type="checkbox"/>		
7.4 Provide operator qualifications and certification under the Environmental Operators Certification Program (EOCP).	Required <input type="checkbox"/>	<a href="https://eocp.ca/">https://eocp.ca/</a>	
7.5 Provide an effluent flow and quality monitoring plan.	Required <input type="checkbox"/>		
7.6	Required <input type="checkbox"/> Methods <input type="checkbox"/>		



# Information Requirements Table for Effluent Discharge

Application Tracking Number: [Click here to enter text.](#)  
Authorization Number: [Click here to enter text.](#)  
[ insert company / project name ]

## Guidance Documents to be considered when determining Information Items. Required and appropriate Methods to be used:

- [British Columbia Field Sampling Manual 2013](#)
- [Environmental Operators Certification Program](#)
- [FactSheet Waste Discharges – Best Achievable Technology, March 2015](#)
- [Guidance on Applications for Permits Under the Environmental Management Act – Technical Assessment, BC Ministry of Environment, September 25, 2010<sup>1</sup>](#)
- [Guidelines for Groundwater Modelling to Assess Impacts of Proposed Natural Resource Development Activities, BC Ministry of Environment, April 2012<sup>2</sup>](#)
- [Interim Technical Guidance 11 Environmental Management Act Development and Use of Initial Dilution Zones in Effluent Discharge Authorizations v. 1.0, September 2018](#)
- [Manual of British Columbia Hydrometric Standards v. 1.0, Ministry of Environment, March 12, 2009](#)
- [Municipal Wastewater Regulation](#)
- [Reclaimed Water Guideline](#)
- [Water and Air Baseline Monitoring Guidance Document for Mine Proponents and Operators, BC Ministry of Environment, October 9, 2012<sup>3</sup>](#)

<sup>1</sup> <https://www2.gov.bc.ca/assets/gov/environment/waste-management/waste-discharge-authorization/guides/assessment.pdf>

<sup>2</sup> [http://www.env.gov.bc.ca/wsd/plan\\_protect\\_sustain/groundwater/groundwater\\_modelling\\_guidelines\\_final-2012.pdf](http://www.env.gov.bc.ca/wsd/plan_protect_sustain/groundwater/groundwater_modelling_guidelines_final-2012.pdf)

[https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/tg11\\_development\\_and\\_use\\_of\\_idz.pdf](https://www2.gov.bc.ca/assets/gov/environment/waste-management/industrial-waste/industrial-waste/mining-smelt-energy/guidance-documents/tg11_development_and_use_of_idz.pdf)

[https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/science-data/man\\_bc\\_hydrometric\\_stand\\_v10.pdf](https://www2.gov.bc.ca/assets/gov/environment/air-land-water/water/science-data/man_bc_hydrometric_stand_v10.pdf)

[http://www.bclaws.ca/EPLibraries/bclaws\\_new/document/ID/freeside/87\\_2012](http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/87_2012)

<https://www2.gov.bc.ca/assets/gov/environment/waste-management/sewage/reclaimedwater.pdf>

<sup>3</sup> [http://www2.gov.bc.ca/gov/DownloadAsset?assetId=E49A49E800814C8FB2D6868B7F119AD6&filename=water\\_air\\_baseline\\_monitoring.pdf](http://www2.gov.bc.ca/gov/DownloadAsset?assetId=E49A49E800814C8FB2D6868B7F119AD6&filename=water_air_baseline_monitoring.pdf)