

Application Form and Guide for an EPEA Registration Code of Practice for Wastewater Systems Using a Wastewater Lagoon

Introduction

The attached form and guidelines outline the information required for an application for a registration for wastewater systems using a wastewater lagoon. The application has been prepared in accordance with the *Environmental Protection and Enhancement Act (EPEA) RSA 2000, cE-12*, the *Approvals and Registrations Procedure Regulation 113/1993*, and the *Wastewater and Storm Drainage Regulation 119/1993*. Please ensure that each section of the application is completed in a concise and clear manner.

Wastewater systems using a wastewater lagoon consists of one or more designed and constructed surface impoundments used for biological and physical treatment of wastewater, but does not include such a plant where it uses mechanical aeration. Wastewater lagoon systems also include sewers, valves, fittings, pumping / lift stations, and collection systems. For your information, the general steps and procedures that are followed when reviewing and issuing a Registration for a municipal wastewater lagoon is illustrated by the attached flow chart (Figure 1).

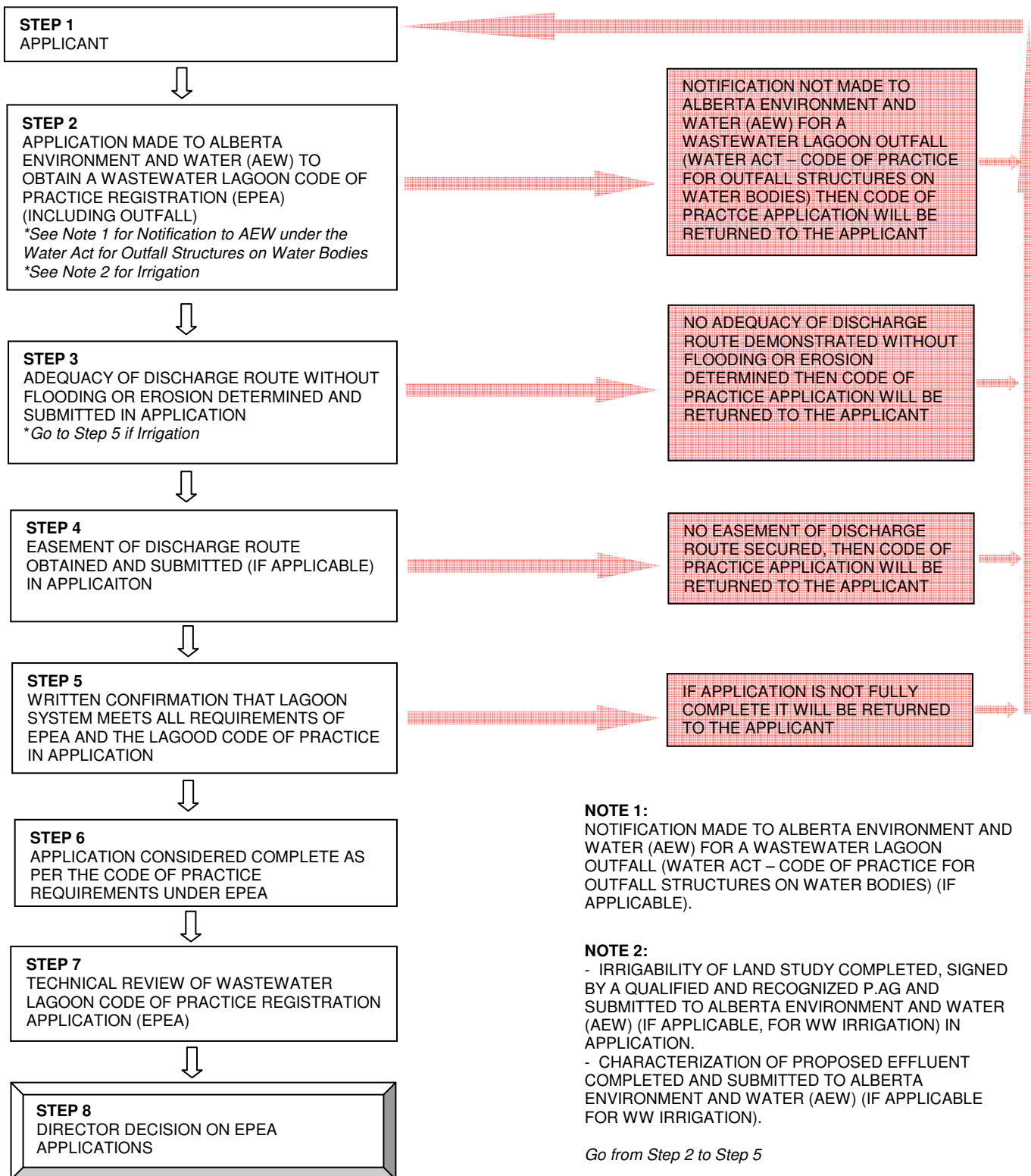
Application for a new Registration under the Code of Practice for systems using a wastewater lagoon must contain written confirmation, by a Professional Engineer, that all aspects of the wastewater lagoon design (including cell liner(s)) conform to the requirements of the Code of Practice, the Regulations under the Act, or a statement identifying and justifying any deviation. The plans and specifications submitted in support of the Code of Practice registration must also be signed and stamped by a Professional Engineer.

All information spaces in this application must be filled in or marked not applicable (N/A). Failure to provide all necessary information may cause the application to be rejected and returned to the applicant. All applications must be forwarded to:

Alberta Environment and Parks
Regulatory Approvals Center
5th Floor, South Petroleum Plaza
9915 108 Street
Edmonton, AB T5K 2G8
Phone: 780-427-6311
Fax: 780-422-0154
E-mail: aep.epeaapplications@gov.ab.ca

FOIP STATEMENT: Personal information on this form is collected under the authority of section 33(c) of the Freedom of Information and Protection of Privacy (FOIP) Act and will be used to administer the *Environmental Protection and Enhancement Act* and its associated regulations. This form is a public record that is available to anyone. All information contained on this form (including personal information) is disclosed by Alberta Environment and Parks to anyone requesting a copy in accordance with Section 2 of the *Environmental Protection and Enhancement Act*, Disclosure of Information Regulation. For further information about the collection and use of this information please contact Alberta Environment and Parks – Regulatory Approvals Centre at aep.epeaapplications@gov.ab.ca or call 780-427-6311.

FIGURE 1: THE PROCEDURE FOR A CODE OF PRACTICE REGISTRATION FOR WASTEWATER SYSTEMS USING A WASTEWATER LAGOON



Application Form and Guide for an EPEA Registration Code of Practice for Wastewater Systems Using a Wastewater Lagoon

1.0 Administrative Information

1.1 Name of the proposed wastewater lagoon system:

1.2 Name and Address of wastewater lagoon system owner (Municipality / Commission / Utility / Water Co-op / Company):

Name: _____

Address: _____

Contact Person: _____ Position: _____

Telephone: _____ Fax: _____

Email Address: _____

Is your organization listed and in good standing on the Corporate Registry?

Yes No

1.3 Legal land description of the existing or proposed wastewater lagoon system:

Land Location: _____ SEC _____ TWP _____ RG _____ M _____

Land Location: _____ SEC _____ TWP _____ RG _____ M _____

Land Location: _____ SEC _____ TWP _____ RG _____ M _____

Land Location: _____ SEC _____ TWP _____ RG _____ M _____

1.4 Submission of a map / plan of the area showing the location of the following landmarks must be submitted in support of the lagoon application. The map should show the following:

- (a) all sanitary lift stations;
- (b) the wastewater lagoon relative to the subdivision / Town / Village / Hamlet; (including a 300 meter setback circumference from the lagoon);
- (c) the overall specific cell layout of the lagoon, with cell types, and a flow diagram through the lagoon cells;
- (d) any and all flow meter(s) in the proposed lagoon system;
- (e) any disinfection and or dechlorination facility (if applicable);

- (f) any and all treated effluent pump stations (if applicable);
- (g) any and all agricultural fields, golf courses or parks that will receive wastewater through wastewater irrigation (if applicable);
- (h) the treated effluent outfall from the final storage cell (if applicable); and
- (i) the wastewater collection piping in the present or proposed treated wastewater collection system for the development that are or will be part of the lagoon system.

1.5 Have setbacks under the *Municipal Government Act* and / or the *Environmental Protection and Enhancement Act* been applied for and issued by the local Subdivision Approving Authority relative to this existing or proposed wastewater lagoon system?

Yes No

If Yes to Section 1.5, then please provide copies of all setbacks variances that have been issued for this wastewater system:

Setback Waiver #1: Issued _____

Setback Waiver #2: Issued _____

Setback Waiver #3: Issued _____

1.6 If Yes to Section 1.5, then please provide a map detailing the location of all properties and corresponding legal land locations relating to the setback variances that have been issued relative to this wastewater system.

1.7 Operating staff and person(s) that will be responsible for the day to day operation of the lagoon system:

Lagoon Treatment

NAME OF OPERATOR(S)	POSITION	AEW CERTIFICATION		WORK PHONE #
		CERT. #	CLASS	

1.8 Operating staff and person(s) that will be responsible for the day to day operation of the lagoon wastewater collection system:

Wastewater Collection

NAME OF OPERATOR(S)	POSITION	AEW CERTIFICATION		WORK PHONE #
		CERT. #	CLASS	

2.0 Wastewater System (Technical Data)

- 2.1 Present or projected population served by the wastewater lagoon system: _____
- 2.2 Projected life of the wastewater treatment plant: _____
- 2.3 Projected population at end of life for the wastewater lagoon system: _____
- 2.4 Are there any other Municipality(ies), Development(s) Commissions / Co-ops / or Companies outside the municipal boundaries that discharge raw or partially treated wastewater into the wastewater collection system (other than septic truck haul)?
 Yes No

If Yes, please provide a list of the systems, the name and phone number of the contact person(s) and approximate annual flows or population.

NAME OF SYSTEM	CONTACT PERSON	PHONE NUMBER	ANNUAL FLOW (M ³) OR POPULATION

- 2.5 Does your wastewater lagoon system receive septic tank waste? Yes No

If Yes, please detail the septage management plan: (including septage hauler agreements, annual volume of septage, conditions of wastewater facility use, limitation of access, surveillance, sampling):

If No, please detail the concerns or circumstances that preclude septage from being received:

Is the septic waste metered? Yes No Average monthly flows (m³) _____

- 2.6 Submission of engineering drawings and specifications for the wastewater lagoon (including cell capacities) (signed and stamped by a Professional Engineer) of the proposed wastewater lagoon system. Yes

2.7 Submission of engineering drawings and specification including piping profiles and design capacity (signed and stamped by a Professional Engineer) of the proposed wastewater collection system. Yes

2.8 All aspects of the design of the wastewater collection systems complies with the design requirements of:

(a) this Code of Practice; and

(b) the regulations under the Act.

Yes No

If No, identification and justification of the deviation from this Code of Practice and/or the regulations under the Act: (with Engineer's signature and stamp)

If Yes, *Environmental Protection and Enhancement Act* Project sign-off sheet must be signed, stamped and included at the end of this application form.

3.0 Raw Wastewater Collection System

3.1 Are there sanitary sewer use bylaw(s) in place to ensure the integrity of the wastewater treatment process? Yes No

3.2 Do the sanitary sewer use bylaw(s) either preclude discharge of some waste(s) or require pre-treatment for industrial or non-compatible waste? Yes No

If No, please explain:

3.3 Raw Wastewater Pumping Stations (lift stations):

LIFT STATION NUMBER AND LOCATION	EMERGENCY OVERFLOW / DISCHARGE ROUTE	POWER RATING (KW)	CAPACITY (L/S)

WASTEWATER LAGOON REQUIREMENTS

Average Daily Design Flow (m ³ /day)	Number of Anaerobic Cells (2 day retention/cell)	Requirement for Facultative Cell(s) (60 day retention/cell)	Requirement for 12 Month Storage Cell(s) (average daily design flow)
≤ 250	0	Yes, maximum depth 1.5 meters	Yes, maximum depth 3.0 meters
250 to ≤ 500	2 in series minimum depth 3.0 meters	Yes, maximum depth 1.5 meters	Yes, maximum depth 3.0 meters
> 500	4 in series minimum depth 3.0 meters	Yes, maximum depth 1.5 meters	Yes, maximum depth 3.0 meters

3.4 Lagoon system description and capacities:

Proposed Wastewater Lagoon System

Proposed or existing Average Daily Flow (m³ / day): _____
 Anaerobic cells – number of cells: _____, volume / cell (m³): _____
 Facultative cells – number of cells: _____, volume / cell (m³): _____
 Final storage cell – number of cells: _____, volume / cell (m³): _____

3.5 Are there any septage dump stations? Yes No
 If Yes, how many _____ locations _____

Are the septage dump stations metered? Yes No
 Average monthly flows (m³) _____

3.6 Wastewater system metering:

Wastewater flow monitoring location(s): _____

3.7 Wastewater pumping: Yes No

UNIT	POWER RATING (KW)	CAPACITY (L/S)

Total pumping capacity _____ (L/s).

Description and location of fuel source for pumping: _____

3.8 Inventory of all water treatment chemicals used. (Please identify all the chemicals used seasonally or continuously, including pH adjusters, oxidants or disinfectants).

CHEMICAL NAME	NSF APPROVED Y/N	CHEMICAL TYPE	POINT OF INJECTION	SEASONAL / CONTINUOUS

4.0 Treated Effluent Discharge

4.1 Treated effluent discharge method:

(a) Batch discharge to watercourse or water body:

Description, volume and location of the treated effluent storage:

Land Location _____ SEC _____ TWP _____ RG _____ M _____

or other (i.e.: street address) _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

Description and location of the treated effluent outfall:

Land Location _____ SEC _____ TWP _____ RG _____ M _____

or other (i.e.: street address) _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

Description of the existing or proposed discharge times and durations from the treated effluent storage:

Description and determination of adequate outlet regarding the discharge route:
Immediate:

Ultimately to:

Have easement(s) been obtained for the discharge route? Yes No
If No please explain:

Description, volume and location of the treated effluent storage:

Land Location _____SEC_____TWP_____RG_____M_____

or other (i.e.: street address)_____

GPS Co-ordinates: Latitude: _____ Longitude: _____

(b) Wastewater irrigation

Type of the irrigation system:

- Permanent in-ground
- Hand move
- Wheel move
- Pivot
- Other: _____

Topographical description of the irrigated land(s):

Total land area irrigated: _____ hectares

Land Locations of the irrigated land(s):

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

Land irrigability study (as per EPEA Guidelines for Municipal Wastewater Irrigation) must be submitted for irrigated lands in support of this application:

Date of study completion: _____

Existing or Projected wastewater irrigation application volume (annual total):
_____ mm (total).

Existing or Projected wastewater irrigation application rate:
_____ mm/hr or mm/irrig. event

(c) Continuous or batch discharge to landlocked wetland.

Description, approximately area (hectares) and location of the wetland:

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

(d) Continuous or batch discharge to a wetland with subsequent discharge to a watercourse or water body.

Type of wetland: Natural Man Made/Designed Hybrid

Purpose of wetland:

Wastewater treatment (recognized part of treatment train)
Wastewater Polishing
Additional Wastewater storage
Other: _____

Wetland Management Plans in place: Yes No
Volume and water level management
Aquatic plant management
Phosphorus management

Description, volume and location of the treated effluent storage:
(pre-wetland - if applicable)

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

Description, approximately area (hectares²) and location of the wetland:

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

Land Location _____ SEC _____ TWP _____ RG _____ M _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

Description and location of the treated effluent outfall to watercourse from wetland:

Land Location _____ SEC _____ TWP _____ RG _____ M _____

GPS Co-ordinates: Latitude: _____ Longitude: _____

5.0 Groundwater Monitoring Program

5.1 Groundwater wells: (around lagoon site)

Number of groundwater wells: _____

Well No.	Legal Land Location
	GPS Co-ordinates

5.2 Confirmation that water samples will be taken and analyzed from groundwater wells prior to putting lagoon into operation: Yes

5.3 Confirmation that water samples will be taken and analyzed from groundwater wells three (3) times, three months apart during the first year of operation: Yes

5.4 Groundwater Analyses / monitoring (prior to lagoon start-up and during first year of operation):

Parameters	Monitoring Frequency (in each groundwater well)
pH	Once before operational, 3 times, 3 months apart during first year
Electrical Conductivity	
Calcium	
Magnesium	
Total Hardness	
Sodium	
Potassium	
Iron	
Total Phosphorus	
Nitrate-Nitrogen	

Parameters	Monitoring Frequency (in each groundwater well)
Nitrite-Nitrogen	Once before operational, 3 times, 3 months apart during first year
Ammonia-Nitrogen	
Chloride	
Fluoride	
Sulphate	
Carbonate	
Bicarbonate	
Total Alkalinity	
Total Dissolved Solids (TDS)	
Total Kjeldahl Nitrogen	
Chemical Oxygen Demand	
Depth to groundwater level	

5.5 Groundwater Analyses / monitoring (after first year and for subsequent years of operation):

Parameters	Monitoring Frequency (in each groundwater well)
Depth to groundwater level	Immediately before lagoon discharge
	Immediately after lagoon discharge is complete
	Approximately one month after lagoon discharge(s)

6.0 Treated Effluent Limits and Monitoring

6.1 Lagoon Discharge – Monitoring

Direct Discharge - Monitoring

Parameters	Sample Type	Sampling Location	Minimum Monitoring Frequency
Carbonaceous Biochemical Oxygen Demand (CBOD)	Grab	Point at which treated wastewater is discharged from the wastewater lagoon	Once during discharge, after the first day of discharge
Total Suspended Solids (TSS)			

6.2 Wastewater Irrigation - Limits

Wastewater Irrigation - Treated Wastewater Limits

Parameter	Limit
Carbonaceous Biochemical Oxygen Demand (CBOD)	< 100 mg/L
Chemical Oxygen Demand (COD)	< 150 mg/L
Total Suspended Solids (TSS)	< 100 mg/L

Parameter	Limit
Electrical Conductivity (EC)	< 2.5 dS/m
Sodium Absorption Ratio (SAR)	< 9 (*SAR greater than 9 is unacceptable) *consult WW irrigation guidelines for corresponding unrestricted and restricted SAR values
pH	6.5 to 8.5

6.3 Wastewater Irrigation – Monitoring

Wastewater Irrigation - Treated Wastewater Monitoring

TREATED WASTEWATER USED FOR IRRIGATION FOR EACH IRRIGATION SITE			
Parameters	Minimum Monitoring Frequency	Sample Type	Sample Location
Carbonaceous Biochemical Oxygen Demand (CBOD)	One sample each: (a) prior to each irrigation application season, and (b) at the mid point of each irrigation season	Grab	At the treated wastewater irrigation intake point
Chemical Oxygen Demand (COD)			
Total Suspended Solids (TSS)			
Electrical Conductivity (EC)			
Sodium Absorption Ratio (SAR)			
pH			

Additional Wastewater Irrigation Treated Wastewater Limits for Golf Course and Park Irrigation

Parameter	Limit
Total coliform counts	< 1000 per 100 ml, based on the monthly geometric mean
Fecal coliform counts	< 200 per 100 ml, based on the monthly geometric mean
Total Chlorine Residual	< 2.0 mg/L, based on the monthly arithmetic mean of daily grab samples

7.0 Wastewater Application Signature (Owner)

- 7.1 The *Environmental Protection and Enhancement Act* and Regulations, provide a specific definition for the "owner" and "person responsible for a wastewater system". Therefore, the person(s) responsible/person signing this document should be familiar with the applicable sections of the *Environmental Protection and Enhancement Act* and the Regulations.

The sections of the *Environmental Protection and Enhancement Act* and Regulations that are of particular relevance to wastewater systems are:

- (a) *Environmental Protection and Enhancement Act (EPEA) RSA 2000, cE-12;*
- (b) *Activities Designation Regulation 276/2003;*
- (c) *Approvals and Registrations Procedure Regulation 113/1993;*
- (d) *Wastewater and Storm Drainage Regulation 119/1993;*
- (e) *Code of Practice for Wastewater Systems Using a Wastewater Lagoon September 2003.*

I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief, such information is true, complete and accurate.

Printed Name of Person Signing

Title

Corporate Address

Corporate Postal Code

Corporate Telephone Number

Corporate Fax Number

Date of Application

Signature

EPEA Code of Practice for Wastewater Systems Using a Wastewater Lagoon

Project Name/Type _____

Location _____

Municipality _____

I acknowledge that I have reviewed the *Standards and Guidelines for Municipal Wastewater, Wastewater, and Storm Drainage Systems*, January 2006, and the Code of Practice for Wastewater Systems Using a Wastewater Lagoon, and certify that the design of the above noted project complies with all of the design requirements noted specified.

SIGNED AND STAMPED by a professional engineer.

NAME

COMPANY

Submissions that are found to not be in accordance with the Standards and Guidelines may result in enforcement action and/or referral to APEGGA.

For projects that do not comply with all of the Standards and Guidelines please submit a detailed explanation of the deficiency and why it is necessary.