STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

December 7, 2007

Mr. Roger Barrett
AAA Interstate Septic Services, Inc.
147 Lane Road
New Sharon, Maine 04955

RE: Permit Compliance System Tracking #MEU509012
Maine Waste Discharge License (WDL) Application #W009012-5J-A-N
Final License

Dear Mr. Barrett:

Enclosed please find a copy of your **final** Maine WDL which was approved by the Department of Environmental Protection. Please read the license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State Law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

If you have any questions regarding this matter, please feel free to call me at 287-7658.

Sincerely,

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.
cc: Denise Behr, DEP/CMRO
Sandy Lao, USEPA

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

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PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
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STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

AAA INTERSTATE SEPTIC SERVICES INC.	)	PROTECTION AND IMPROVEMENT
NEW SHARON, FRANKLIN COUNTY, MAINE	)	OF WATERS
SURFACE WASTE WATER DISPOSAL SYSTEM	)	
MEU509012	)	WASTE DISCHARGE LICENSE
W009012-5J-A-N **APPROVAL**	)	**NEW**

Pursuant to the provisions of 38 M.R.S.A., Section 414-A et seq., and applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of AAA INTERSTATE SEPTIC SERVICES INC. (AAA hereinafter) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

AAA has submitted an application to the Department for a new Maine Waste Discharge License (WDL) for the disposal of up to approximately 1,000,000 gallons per year of supernatant from a septage dewatering operation located in New Sharon Maine. The waste water will be disposed via a surface waste water disposal system (spray irrigation) on a 4.5 –acre parcel of land at the dewatering facility.

LICENSE SUMMARY

1. This WDL establishes daily maximum technology based concentration limits for biochemical oxygen demand (BOD), total suspended solids (TSS) and pH for the lagoon effluent;

2. Establishes daily maximum reporting requirements for nitrate nitrogen and a suite of metals for the lagoon effluent;

3. Establishes a weekly application rate of 40,725 gallons/acre for the 4.5 acre spray irrigation site;

4. Establishes a daily maximum limitation for nitrate-nitrogen in the ground water monitoring wells that is consistent with National Primary Drinking Water Standards;

5. Establishes annual ground water monitoring;

6. Establishes a number of numeric and narrative operational constraints for the treatment and disposal system;

7. Establishes a requirement for the submission of an Operations and Maintenance (O&M) Plan and Ground Water Quality Monitoring Plan for review and approval by the Department.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated September 26, 2007, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 MRSA Section 464(4)(F), will be met, in that:

   (a) Existing water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department APPROVES the above noted application of AAA INTERSTATE SEPTIC SERVICES INC., to operate a surface waste water disposal system to receive and treat up to approximately 15,000 gallons per day of supernatant at a septage dewatering facility and dispose of up to 40,725 gallons/acre/week on a 4.5-acre spray irrigation area, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. Standard Conditions of Industrial Waste Discharge Licenses (revised 8/14/96), copy attached.

2. The attached Special Conditions, including effluent limitations and monitoring requirements.

3. This license expires five (5) years from the date of signature, below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 6TH DAY OF DECEMBER, 2007.

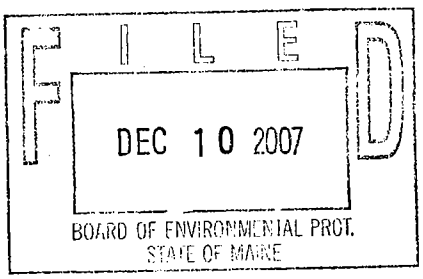
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____ for
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 21, 2007

Date of application acceptance: June 26, 2007



Date filed with Board of Environmental Protection _____

This Order prepared by GREGG WOOD, BUREAU OF LAND & WATER QUALITY

W90125J 12/6/07

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of the license, the licensee is authorized to operate a surface waste water treatment and disposal system. The **STORAGE LAGOON EFFLUENT (OUTFALL 001)** [(1)] shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations	Minimum Monitoring Requirements	
	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Biochemical Oxygen Demand *[00310]*	100 mg/L *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
Total Suspended Solids *[00530]*	100 mg/L *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
Nitrate-Nitrogen *[00620]*	Report mg/L *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
pH (Standard Units) *[00400]*	6.0 -8.5 S.U. *[12]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
Metals (Total): Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc *[01002, 01027, 01034, 01042, 01051, 71900, 01067, 01092]*	Report ug/L *[28]*	1/5 Years[(3)] *[01/5Y]*	Grab *[GR]*

The bracketed italicized numeric values in the table above are code numbers that the Department personnel utilize to code the monthly Discharge Monitoring Reports.

Footnotes: - See page 7 of this license.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning the effective date of the license, application of waste water to the land via a spray irrigation system shall be limited to the time period **April 15th to November 15th of each calendar year**. The **SPRAY-IRRIGATION FIELD (SF-1)** shall be limited and monitored as specified below.

	Monthly Total as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Application Rate (4) *[51125]*	---	40,725 gal/acre/week(5) (1.5 in/acre/week) [8B]	---	1/Week *[01/07]*	Measure *[MS]*
Flow - Total Gallons(4) *[51500]*	Report (Gallons) *[57]*	---	---	1/Month *[01/30]*	Calculate *[CA]*

The bracketed italicized numeric values in the table above are code numbers that the Department personnel utilize to code the monthly Discharge Monitoring Reports.

Footnotes: - See page 7 of this license.

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS

3. **GROUND WATER MONITORING WELLS**: During the period beginning the effective date of the license and lasting through the license expiration date, **GROUND WATER MONITORING WELL(S)** shall be limited and monitored as specified below.

Monitoring Parameters	Daily Maximum	Minimum Measurement Frequency	Sample Type
Depth to Water Level Below Landsurface *[72019]*	Report (feet)(6) [27]	1/Month(6) *[01/30]*	Measure *[MS]*
Nitrate-Nitrogen *[00620]*	10 mg/L*[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Ammonia-(as N) *[61574]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Total kjeldahl nitrogen *[00625]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Chloride (Total) *[00940]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Total Organic Carbon *[00680]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Specific Conductance*[00095]*	Report (umhos/cm)(8) *[11]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Total Dissolved Solids *[70296]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Temperature (°F) *[00011]*	Report (°F) *[15]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Dissolved Oxygen *[00300]*	Report, mg/L *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
pH (Standard Units) *[00400]*	Report (S.U.) *[12]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Total Suspended Solids*[00530]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Calcium (Total) *[00916]*	Report (mg/L) *[19]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Turbidity *[00070]*	Report (NTU) *[43]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Arsenic (Total) *[00102]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Iron (Total) *[01047]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Magnesium (Total) *[00927]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Manganese (Total) *[01055]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Potassium (Total) *[00937]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Sodium (Total) *[00929]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*
Sulfate (as S) *[00154]*	Report (ug/L) *[28]*	2/Year(7) *[02/YR]*	Grab *[GR]*

SPECIAL CONDITIONS
A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes – [Special Condition A(1), A(2) & A(3)]

Lagoon Effluent

(1) Lagoon effluent shall be sampled as it exits the lagoon to be sprayed and shall be representative of what is actually sprayed on the spray-irrigation field.

(2) Lagoon effluent sampling shall be conducted in **April, May, August, and October** of each calendar year in accordance with federally approved methods for sampling, handling and preservation. Samples shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services and in accordance with methods approved by 40 Code of Federal Regulations (CFR) Part 136.

Note: The licensee is not required to test for these parameters during a month where no waste water is disposed of via the spray irrigation system.

(3) Metals testing shall be performed in the first 12-month period following issuance of the license and then again in the 12-month period prior to the expiration date of the license.

Spray-Irrigation Fields

(4) A field's daily or weekly application rate is the total gallons sprayed over the applicable period of time divided by the size of the wetted area of the spray-irrigation field in or the size in acres of that portion of the field utilized. Note: 27,152 gallons is equivalent to one acre-inch. The licensee shall measure the flow of waste water to the irrigation area by the use of a flow measuring device that is checked for calibration by an independent third party at least once per calendar year. Weekly is defined as Sunday through Saturday.

(5) For Discharge Monitoring Report (DMR) reporting purposes, the licensee shall report the highest weekly and daily application rate for the month in the applicable box on the form.

Groundwater Monitoring

(6) Measured to the nearest one-tenth of a foot as referenced from the surface of the ground at the base of the monitoring well. Measurements shall be taken in **April thru October.**

(7) Ground water sampling shall be conducted using low flow sampling techniques in the month of **May and October** of each year in accordance with Department approved methods for sampling, handling, and preservation. See Attachment D of the Fact Sheet of this license for Department guidance on low flow sampling techniques. Samples shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services and in accordance with methods approved by 40 Code of Federal Regulations (CFR) Part 136. Samples that are sent to a POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended February 13, 2000).

SPECIAL CONDITIONS

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes – [Special Condition A(1), A(2) & A(3)]

(8) Temperature calibrated to 25.0° C. Specific Conductance values indicating a statistically significant trend upwards or sudden spikes from previous levels may necessitate the need for additional ground water testing requirements.

B. TREATMENT PLANT OPERATOR

This treatment facility must be operated by a person holding a minimum of a Maine **Grade SITS-I** certificate (or a Maine Professional Engineer [P.E.]) pursuant to Title 32 M.R.S.A., Section 4171 et seq and Department Rule Chapter 531. All proposed contracts for facility operation by any person must be approved by the Department prior to the licensee engaging the services of the contract operator.

C. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Forms provide by the Department and **postmarked on or before the thirteenth (13th) day of the month and submitted in a timely fashion such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the Discharge Monitoring Report and all other reports required herein shall be submitted to the Department's facility compliance inspector at the following address:

Maine Department of Environmental Protection
Central Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
State House Station #17
Augusta, Maine 04333

SPECIAL CONDITIONS

D. AUTHORIZED DISCHARGES

The licensee is authorized to discharge treated sanitary waste water only in accordance with the terms and conditions of this license and only to spray irrigation field (SF1) and from those sources as indicated in the Waste Discharge License Application. Discharge of waste water from any other location or from sources other than those indicated on said application requires formal modification of this license.

E. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain materials in concentrations or combinations which would impair the usages designated by the classification of the groundwater.

2. Notwithstanding specific conditions of this license the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

F. NOTIFICATION REQUIREMENT

In accordance with Standard Condition #6 of this license, the licensee shall notify the Department of the following.

1. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system.

2. For the purposes of this section, adequate notice shall include information on:

   (a) the quality and quantity of waste water introduced into the wastewater treatment system; and

   (b) any anticipated impact of the change in the quantity or quality of the waste water to be discharged from the treatment system.

SPECIAL CONDITIONS

G. GENERAL OPERATIONAL CONSTRAINTS

1. All waste waters shall receive pretreatment through tanks and a properly designed, operated and maintained lagoon system prior to land irrigation.

2. The spray irrigation facilities shall be effectively maintained and operated at all times so that there is no discharge to surface waters, nor any contamination of ground waters which will render them unsatisfactory for usage as a public drinking water supply.

3. The surface waste water disposal system shall not cause the lowering of the quality of the ground water, as measured in the groundwater monitoring wells specified by this license, below the State Primary and Secondary Drinking Water Standards specified in the Maine State Drinking Water Regulations pursuant to Maine Law 22 M.R.S.A. § 2601.

   In the event that groundwater monitoring results indicate adverse effects, the licensee may be required to take immediate remedial action(s), which may include but are not limited to, adjustment of the irrigation schedule or application rates, a reduction of the pollutant loading, or ceasing operation of the system until the ground water attains applicable standards.

4. The Department shall be notified as soon as the licensee becomes aware of any threat to public health, unlicensed discharge of waste water, or any malfunction that threatens the proper operation of the system, and what action(s) will be taken to repair/correct, and prevent recurrence. Notification shall be made in accordance with the attached Standard Conditions of this license.

5. The licensee shall maintain a file on the location of all system components and relevant features. Each component shall be mapped and field located sufficiently to allow adequate inspections and monitoring by both the licensee and the Department.

6. All system components including collection pipes, tanks, manholes, pumps, pumping stations, spray disposal fields, and monitoring wells shall be identified and referenced by a unique system identifier in all logs and reports.

SPECIAL CONDITIONS

H. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS

1. The licensee shall be limited by and monitor the spray irrigation system for the parameters in the table titled "*Effluent Limitations and Monitoring Requirements*" Special Condition A(2) of this license at the monitoring frequency specified.

2. The maximum waste water application rate shall not exceed 40,725 gallons/acre/week.

3. Irrigation shall be limited to the time period between **April 15 and November 15** each calendar year. Compliance with other operational constraints must be maintained at all times.

4. A suitable year round vegetative cover shall be maintained and waste water may not be applied to areas without established vegetation or ground cover (organic matter) covering at least 75% of the surface of the ground.

5. Irrigation events shall be scheduled, timed and interrupted so that:

   - No surface runoff occurs during irrigation from the spray area;
   - There must be at least 10 inches of separation between the ground surface and the ground water table at the time of spray irrigation events. The root zone shall not be completely saturated at the conclusion of irrigation;
   - And, the effects of evaporation from the soil and transpiration by plants AKA evapo-transpiration as influenced by temperature (soil & air), wind, relative humidity and sunlight are maximized.

6. The licensee shall manage irrigation to prevent surface water runoff and shall not irrigate land areas when water is ponded on the land surface for longer than 15 minutes at a time.

7. No waste water shall be applied to the site following a rainfall or precipitation accumulation exceeding 1.0 inch within the previous 24-hour period. The licensee shall also manage application rates by taking into consideration the forecast for rain events in the 48-hour period in the future. A rain gauge shall be located on site to monitor daily precipitation.

8. No waste water shall be applied where there is snow present on the surface of the ground.

9. No waste water shall be applied when there is frost within the upper 18 inches of the soil profile.

10. No traffic or equipment shall be allowed in the spray-irrigation field except where installation occurs or where normal maintenance or repairs are performed.

SPECIAL CONDITIONS

I. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS

1. **Prior to the commencement of spray irrigation for the season,** the licensee shall notify the Department's compliance inspector in writing that they have verified that soil conditions, are appropriate (absence of frozen ground, soil drainage, moisture conditions, etc) for spray irrigation.

2. **Each day prior to irrigating**, the licensee shall visually inspect (or have another suitable Department approved method for assessing) the spray irrigation site to determine if area conditions are appropriate for spraying and all the operational constraints listed above are met.

   Observations may include:

   - The level of free water in an auger hole, a nearby well, or observation pit;
   - Methods for estimating the amount of water present in the soil, either by feel or soil moisture measurement devices;
   - Current and past weather conditions (such as when and how much precipitation has occured, potential for evapo-transpiration as influenced by temperature, wind, and relative humidity).

3. **Within one hour after start-up of the spray-irrigation system and at the conclusion of the spray-event**, the licensee shall walk the spray irrigation site to check the system for leakage in the piping system and determine if individual sprayheads and pump(s) are functioning as designed, and verify that application rates are appropriate for the existing site conditions. Should significant malfunctions or leaks be detected, the licensee must shut down the portion of the spray system malfunctioning and make necessary repairs before resuming operation of the spray system. An irrigation cycle shall be stopped if runoff or ponding occurs.

4. **The licensee shall maintain a daily log of all spray irrigation operations** which records, date, weather and soil conditions, rainfall, lagoon freeboard (top of lagoon to the water surface), areas irrigated, volume sprayed (gallons), application rates (daily and hourly), and other relevant observations/comments from daily inspections. The log shall be in accordance with the format of the "Monthly Operations Log" provided as Attachment "A" of this license .

SPECIAL CONDITIONS

I. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS (cont'd)

Weekly spray application rates shall be reported in accordance with the format of the "Spray Application Report by Week" provided as Attachment "B" of this license. Depth to water below land surface observed in monitoring wells shall be reported in accordance with the format of the Depth to Ground Water provided as Attachment "C" of this license.

The daily operational logs and weekly spray application reports for each month shall be submitted to the Department as an attachment to the monthly Discharge Monitoring Reports (DMR's). Copies will also be maintained on site for Department review and for license operation maintenance purposes.

J. VEGETATION MANAGEMENT

1. The licensee shall remove vegetation in the spray-irrigation areas as necessary as not to impair the operation of the spray-irrigation system and to ensure uniform distribution of wastewater over the desired application area.

2. The vegetative buffer zones along the perimeter of the site shall be maintained to maximize vegetation and forest canopy density in order to minimize off-site drift of spray.

K. LAGOON MAINTENANCE

1. The banks of the lagoon shall be inspected weekly during the operating season and properly maintained. There shall be no overflow through or over the banks. Any signs of leaks, destructive animal activity or soil erosion of the berms shall be repaired immediately. The Department shall be notified by phone immediately and then in writing within five (5) days of such incidents documenting the corrective action(s) that were taken to eliminate the overflow.

2. Annual maintenance of the banks of the lagoon shall be conducted to keep them free of woody vegetation and other vegetation that may be detrimental to the integrity of the berm and or lagoon liner.

3. The waters within the lagoon shall be kept free of all vegetation (i.e. grasses, reeds, cattails, etc) that hinders the operation of the lagoon.

4. The lagoon shall be dredged as necessary to maintain the proper operating depths that will provide best practicable treatment of the wastewater. All material removed from the lagoon(s) shall be properly disposed of in accordance with all applicable State and Federal rules and regulations.

SPECIAL CONDITIONS

K. LAGOON MAINTENANCE (cont'd)

5. At the end of each spray season, the lagoon shall be lowered to a level sufficient to allow for storage of precipitation and/or infiltration during the period the spray system is not being used and/or operated.

6. The licensee shall maintain the lagoon freeboard at design levels or at least two (2) feet whichever is greater. Freeboard measured to the nearest tenth of a foot, shall be reported on the daily operational logs `as the mathematical difference between the water level in the lagoon and the lowest elevation point on the lagoon berm at the beginning and end of spray irrigation.

L. INSPECTIONS AND MAINTENANCE

1. All inspections shall include an evaluation of any repair, upgrades, pumping, operational and/or maintenance needs.

2. The inspection report or log shall include the date of the inspection, the names of the person performing the inspection, and other relevant system operations.

3. Maintenance logs shall be maintained for each system component including pumps, pump stations, septic tanks, lagoons, spray apparatus, and pipes. At a minimum, the log shall include the alphanumeric ID, the date of maintenance, type of maintenance performed, names or person performing the maintenance, and other relevant system observations.

M. PUMPING STATIONS

A manual check of the operation of the pump, testing all level controls, switches and alarms shall be performed and recorded at least once per month during the operation of the surface disposal system. See Attachment E of the Fact Sheet of this license for an example checklist.

N. PUMPING (SOLIDS REMOVAL FROM PUMPING STATIONS, AND OTHER TREATMENT TANKS)

1. The licensee shall keep a pumping log including the date of pumping, quantity of material removed (solids % capacity), name and number of licensed contractor, pumping frequency and other relevant observations.

2. Following pumping, the tanks shall be checked for damage at key joints and the inlet and outlet baffles, and repaired promptly if damaged.

SPECIAL CONDITIONS

O. SUBMITTAL OF SPRAY IRRIGATION PERFORMANCE REPORT

As a exhibit to the next application for license renewal, the licensee shall submit to the Department for review and approval a report of the treatment system's performance covering the previous four years. The annual report shall include, but is not necessarily limited to, the following topics:

- Yearly totals and monthly summaries of the number of days sprayed, spray volumes and average application rates for the previous calendar year and a trend analysis for the previous five-year period.
- Tank Inspections & Pumping Log.
- Summary of significant maintenance activities and repairs.
- Additions/Deletions to the system and an updated schematic if applicable.
- A listing of all wastewater overflows including pumping stations.
- System performance evaluation in regards to compliance with the terms and conditions of the license.
- Any system calibrations performed during the term of the license.
- The report shall be dated and signed by the operator in responsible charge of the system.

P. OPERATIONS AND MAINTENANCE (O & M) PLAN AND SITE PLAN

This facility shall have a current written comprehensive Operation & Maintenance (O&M) Plan. **On or before April 1, 2008,** ***[PCS Code 15599]*** the licensee shall submit a copy of an O&M plan to the Department's compliance inspector for review and approval. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

The operational and maintenance plan shall include 11" x 17" site plan(s) (to scale) of the lagoon and spray irrigation areas. The plan shall include, but not be limited to showing the location of the lagoon(s), ground water monitoring wells, observation pits, spray irrigation pump station(s), layout of the mainline and lateral piping distribution system, individual spray heads, soil types, and contour lines at 20 foot intervals or less. Any property boundary or surface water within 500 feet of the lagoon or spray irrigation field must be shown on the plan. All system components shall be identified by unique alphanumeric identifiers.

SPECIAL CONDITIONS

P. OPERATIONS AND MAINTENANCE (O & M) PLAN AND SITE PLAN

It shall be the responsibility of the licensee to keep the plans current over the course of the license, and for the plans to reflect any modifications or additions to the system. If significant changes to the operations and maintenance plan are warranted, the licensee shall inform the Department facility inspector in writing and within 10 days of implementing said actions. The plans shall be kept on-site at all times and made available to the Department upon request.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the waste water treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the waste water treatment facility, the permittee shall submit the updated O&M Plan to their Department's compliance inspector for review and comment.

Q. GROUND WATER MONITORING WELLS

On or before February 1, 2008, ***[PCS Code 25599]*** the licensee shall submit to the Department for review and approval, a Ground Water Quality Monitoring Plan. See Attachments F & G of the Fact Sheet of this license for Department guidance on said plan as well as guidance on the proper installation of ground water monitoring wells.

On or before the substantial complete of the construction of the surface waste water disposal system, the licensee shall have all monitoring wells properly installed and sampled at least once to determine background levels of the ground water quality prior to commencing operation of the facility

The Department reserves the right to require increasing the depth and or relocating any of the groundwater monitoring wells if the well is perennially dry or is determined not to be representative of groundwater conditions.

SPECIAL CONDITIONS

R. PUBLIC ACCESS TO LAND APPLICATION SITES AND SIGNAGE

Public access to the land application sites shall be controlled during the season of active site use. Such controls shall include the posting of signs showing the activities being conducted at each site.

The licensee shall install signs measuring at least 8 ½" x 11" around the perimeter of the lagoon and spray irrigation site that inform the general public that the area is being used to dispose of sanitary wastewaters. Each sign must be placed such that at least two other signs (one left, one right) may be seen from any one posted sign. The signs must be constructed of materials that are weather resistant.

The licensee must walk the perimeter of the lagoon and spray site prior to the beginning of each spray season and make any necessary repairs to the signage to comply with this condition.

S. REOPENING OF LICENSE FOR MODIFICATIONS

Upon evaluation of any required test results, results of inspections and/or reporting required by the Special Conditions of this licensing action, additional site specific or any other pertinent information or test results obtained during the term of this license, the Department may, at anytime and with notice to the licensee, modify this license to require additional monitoring, inspections and/or reporting based on the new information.

T. SEVERABILITY

In the event that any provision, or part thereof, of this license is declared to be unlawful by a reviewing court, the remainder of this license shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision or part thereof, had been omitted, unless otherwise ordered by the court.

Monthly Operations Log **Attachment A** **(Month/Year)** _____)

AAA Interstate Septic Services Inc. WDL #W009012-5J-A-N; Field #SF#1 Weekly Application Rate: 40,725 gallons/week

	A	B	C	D	E	F	G	H	I	J	K
Day	Date	PRECIP Inches	Temp	WEATHER	WIND-Direction/ Speed	Soil Moisture	Quantity-Total Gallons Pumped	Name of Field(s) Used	Acres Sprayed (Sum of Col H x Area of Each Field)	Gallons/Acre (Col G divided by I)	Total Inches
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	10										
	11										
	12										
	13										
	14										
	15										
	16										
	17										
	18										
	19										
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	21										
	22										
	23										
	24										
	25										
	26										
	27										
	28										
	29										
	30										
	31										
Monthly Total =											

Spray Application Report by Week **Attachment B** **Facility Name_____;**

Facility Name: AAA Interstate Septic Services Inc. W009012-5J-A-N

(Month _____, Year _____) Weekly Application Rate 40,725 gallons/acre or 1.5 inches)

Field Name/#	Effective Spray Area (Acres)	Weekly Limit (Gallons/Acre)	Actual Spray Application Rates (Gallons per Acre)					Number of Exceptions to Weekly Limit	Monthly Average
			Week 1	Week 2	Week 3	Week 4	Week 5		

Note: 1 acre-inch is equivalent to 27,150 gallons of liquid
27,150 gallons per acre is equivalent to 1.0 inch

Total Number of Exceptions

A spray-field's weekly application rate if the total gallons sprayed (Sunday through Saturday) divided by the size of the spray-field in acres or the size in acres of that portion of the spray field utilized.

Signature of Responsible Official: _____, Date _____

Depth to Groundwater (Tenths of Feet) **Attachment C** (Month _____, Year _____)

Facility Name: AAA Interstate Septic Services Inc. W009012-5J-A-N

Field Name/#	Monitoring Location	1. Depth to Groundwater (Measured From Ground Surface in Tenths of Feet)					Number of Exceptions	Monthly Average Depth
		Week 1	Week 2	Week 3	Week 4	Week 5		
					Total Number of Exceptions			

Note: Special Condition H of the License requires that a depth of 10 inches from the ground surface to the groundwater table must be present prior to spraying.

Signature of Responsible Official: _____, Date _____

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **September 26, 2007**

PERMIT COMPLIANCE TRACKING SYSTEM NUMBER: **MEU509012**

LICENSE NUMBER: **W009012-5J-A-N**

NAME AND MAILING ADDRESS OF APPLICANT:

AAA INTERSTATE SEPTIC SERVICES INC.
Attn: Roger Barrett
147 Lane Road
New Sharon, Maine 04955

COUNTY: **Franklin County**

NAME AND ADDRESS OF FACILITY:

147 Lane Road
New Sharon, ME. 04955

RECEIVING WATER/ CLASSIFICATION: **Groundwater /Class GW-A**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Roger Barrett (Operator)**
207-778-2467

Percy Harris (Owner)
207-778-2467

1. APPLICATION SUMMARY

a. Application: AAA has submitted an application to the Department for a new Maine Waste Discharge License (WDL) for the disposal of up to 1,000,000 gallons per year of supernatant from a septage dewatering operation located in New Sharon Maine. The waste water will be disposed via a surface waste water disposal system (spray irrigation) on a 4.5 –acre parcel of land at the dewatering facility. See Attachment "A" of this Fact Sheet for a location map of the facility.

1. APPLICATION SUMMARY (cont'd)

b. Source Description: The licensee pumps out septic tanks for residential customers. It's customer base is located primarily in Franklin and Somerset counties in western Maine. The licensee services anywhere from 900 – 1,200 customers per year which generates as high as 15,000 gallons/day and as high as 1,000,000 gallons/year. The licensee currently spreads the septage onto fields which is regulated by a permit via the Department's Bureau of Remediation and Waste Management or is trucked to a municipal waste water treatment facility that is permitted to accept septage.

c. Waste Water Treatment (Spray-Irrigation): The licensee is proposing to construct a surface waste water disposal system to treat and seasonally dispose of the liquid fraction (supernatant) of the septage to a 4.5 –acre parcel of land that has historically been used to spread septage. The septage brought into the facility will receive treatment by screening (via a rotary screen), dewatering (via gravity filtration), conveyed to two 15,000-gallon tanks to be aerated via a fine bubble diffusion apparatus and then pumped to storage lagoon for ultimate disposal via a spray irrigation system. See Attachment "B" of this Fact Sheet for schematic of the treatment processes.

The licensee has conducted a Class A High Intensity soil survey in the 4.5 – acre spray site. This area contains Dixfield, Elmwood, Nicholville and Roundabout soils that are fine to very fine sandy loams soils. Seasonally high water tables range from 15 to 27 inches below the surface of the ground.

The proposed storage lagoon will be 12 feet deep with 10 feet of working capacity and 2 feet dedicated to freeboard. The total working capacity of the storage lagoon is approximately 196,000 gallons. The lagoon will be lined with a six-inch bentonite clay layer, covered by six inches of sand to prevent suspension of the clay. Though this is not enough holding capacity for the septage received during the non-spray season (mid-November through mid-April), the licensee has indicated it has other acceptable disposal options such as trucking the septage to a number of municipal waste water treatment facilities permitted by the Department.

The proposed spray site will be approximately 4.5 acres and will consist of 4 laterals with a total of 13 spray heads. Each spray head will deliver the waste water in a circular pattern that measures 140 feet in diameter. The licensee has indicated it plans to rotate the location of the spray heads after each spray application event. At a licensed application rate of 1.5 inches/week (40,725 gallons/acre/week) the site (4.5 acres) will be able to accept up to approximately 183,262 gallons/week. With approximately one million gallons of waste water to dispose of annually, all waste water can be disposed of in 5-6 week period of time. Given this license establishes a spray season on April 15-November 15 of each year, the spray site is generously sized to accept all of the waste water expected to be generated.

2. LICENSE SUMMARY

a. Terms and Conditions – This license;

1. Establishes daily maximum technology based concentration limits for biochemical oxygen demand (BOD), total suspended solids (TSS) and pH for the lagoon effluent.

2. Establishes daily maximum reporting requirements for nitrate nitrogen and a suite of metals for the lagoon effluent.

3. Establishes a weekly application rate of 40,725 gallons/acre for the 4.5 acre spray irrigation site.

4. Establishes a daily maximum limitation for nitrate-nitrogen in the ground water monitoring wells that is consistent with National Primary Drinking Water Standards.

5. Establishes ground water monitoring.

6. Establishes a number of numeric and narrative operational constraints for the treatment and disposal system.

7. Establishes a requirement for the submission of an Operations and Maintenance (O&M) Plan and Ground Water Quality Monitoring Plan for review and approval by the Department.

3. CONDITIONS OF THE LICENSE

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Water Classification System.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A § 470 indicates the groundwater at the point of discharge is classified as Class GW-A receiving waters. Maine law, 38 M.R.S.A., §465-C describes the standards for Class GW-A waters as the highest classification of groundwater and shall be of such quality that it can be used for public water supplies. These waters shall be free of radioactive matter or any matter that imparts color, turbidity, taste or odor which would impair the usage of these waters, other than occurring from natural phenomena.

5. TREATMENT

Slow rate land irrigation treatment is an environmentally sound and appropriate technology for best practicable treatment and disposal of sanitary wastewater. The soils and vegetation within the irrigation area will provide adequate filtration and absorption to preserve the integrity of the soil, and both the surface and groundwater quality in the area.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. Monitoring Parameters – Monitoring parameters identified below provide an indication of the effectiveness of the treatment process and the condition of the waste water being applied to the land via spray irrigation. Lagoon monitoring is being required four times per year when waste water is being disposed of via the spray irrigation system. Ground water monitoring is required at the frequency of twice per year, once at the beginning of the spray season and once at the end of the spray season. The locations of the ground water monitoring wells will be determined once the ground water quality monitoring plan required by Special Condition Q of this license is approved by the Department.

Biochemical Oxygen Demand (BOD) *and Total Suspended Solids (TSS)* – Monitoring for BOD and TSS in lagoon effluent provides an indication of the condition of the waste water being applied and the degree of loading of organic material and the effectiveness of the spray irrigation treatment process. Monitoring for TSS in the ground water monitoring wells provides information as to the integrity of seal of the monitoring well. This licensing action is establishing a daily maximum limit of 100 mg/L for the lagoon effluent for both parameters which is consistent with limitations established for like facilities and is considered by the Department as a best practicable treatment (BPT) standard. Sampling for BOD and TSS are required 1/Month in the months of April, May, August and October of each year when waste water is disposed of via the spray irrigation system. For the ground water monitoring wells, monitoring is only required twice per year, at the beginning of the spray season in May and at the end of the spray season in October.

pH: Measuring pH in the lagoon effluent is important as waste waters with low pH applied to soils may result in the leaching of metals from the soil and in turn, elevate metal concentrations in the ground water. The pH limits established in this license are considered best practicable treatment standards and are considered a surveillance level monitoring parameter that is used as an indicator of potential contamination.

Metals – Metals testing of the lagoon effluent shall be performed in the first 12-month period following issuance of the license to establish a baseline level of metals loading to the spray irrigation site. Annual metals testing in the ground water monitoring wells is being established to ensure the cation exchange capacity of the soil in the spray irrigation site is maintained.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Nitrate-Nitrogen & Total Kjeldahl-Nitrogen (TKN)– Nitrogen compounds are by-products of the biological breakdown of ammonia and are inherent in domestic-like sanitary waste water. TKN is defined as organic nitrogen plus ammonia nitrogen and is a good indicator of the nitrogen compounds being applied to the spray irrigation site. Because nitrate-nitrogen is weakly absorbed by soil, it functions as a reliable indicator of contamination from waste disposal sites. Elevated levels of nitrate-nitrogen in drinking water supplies are human health concerns. The nitrate-nitrogen limit of 10 mg/L is a National Primary Drinking Water standard. Like BOD and TSS, lagoon effluent sampling for nitrate-nitrogen and TKN is required 1/Month in the months of April, May, August and October of each year when waste water is disposed of via the spray irrigation system. Ground water monitoring wells are only required to be sampled for nitrate-nitrogen twice per year, at the beginning of the spray season in May and at the end of the spray season in October.

Specific Conductance and Temperature – These parameters are required to be monitored in the ground water monitoring wells as they are considered to be a "field" parameter meaning that it is measured directly in the field via instrumentation and does not require laboratory analysis. Actual conductivity is dependent on the temperature of the sample collected. This licensing action is requiring the licensee to measure specific conductance in order to provide standardized sampling methodology among similar types of facilities. This parameter is considered to be a surveillance level monitoring parameter and is used as an early warning indicator of potential ground water contamination when there exists a trend in the data. Sampling is required twice per year, at the beginning of the spray season in May and at the end of the spray season in October.

b. Application rates: - This licensing action is establishing a spray application rate of 1.5 inches/week or 40,725 gallons/acre per week. With a spray application area of approximately 4.5 acres, the licensee is authorized to apply up to 183,262 gallons per week provided the operational constraint in Special Conditions G and H of this license are adhered to. Regardless of the calculated rate, the system operator shall monitor each waste application to verify adequate infiltration of the waste into the soil and an irrigation cycle should be stopped if runoff or ponding start to occur.

7. SYSTEM CALIBRATION

Discharge rates, application rates and uniformity of application change over time as equipment gets older and components wear, or if the system is operated differently from the assumed design. Operating below design pressure greatly reduces the coverage diameter and application uniformity (resulting in increased ponding). For these reasons, the licensee should field calibrate their equipment on a regular basis (annually at a minimum) to ensure proper application and uniformity, and when operating conditions are changed from the assumed design.

7. SYSTEM CALIBRATION (cont'd)

Calibration involves collecting and measuring flow at several locations in the application area (typically a grid pattern of containers with uniform diameters). Rain gauges work best because they already have a graduated scale from which to read the application amount without having to perform additional calculations.

Attachment "C" of this Fact Sheet entitled "*Example Spray-Irrigation Field Calibration Report Form*" is provided as an aid to the licensee in the re-calibration process. It is recommended that this form or similar form be submitted to the Department Compliance Inspector shortly after re-licensing and annually thereafter, or whenever operating conditions are changed from the assumed design.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As licensed, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the water body to meet standards for Class GW-A classification.

9. PUBLIC COMMENTS

Public notice of this application was made in the Franklin Journal newspaper on or about June 20, 2007. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft licenses shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

10. DEPARTMENT CONTACTS

Additional information concerning this licensing action may be obtained from and written comments should be sent to:

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017
Telephone (207) 287-7693

11. RESPONSE TO COMMENTS

During the period of September 26, 2007, through the issuance date of the permit/license, the Department solicited comments on the proposed draft license for the AAA Interstate operation. The Department did not receive comments from the permittee, state or federal agencies or interested parties that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.

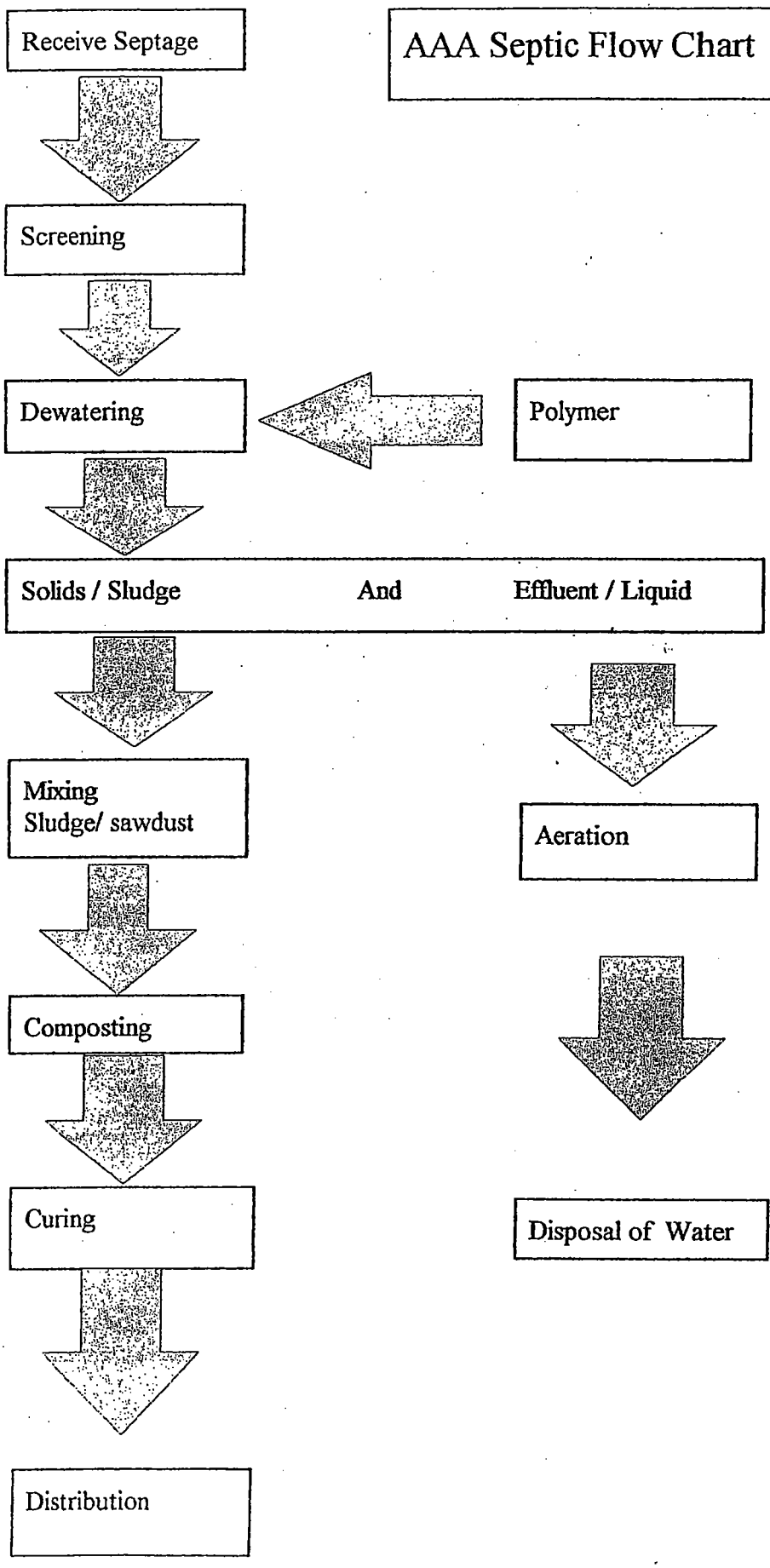
ATTACHMENT A


SITE
Farmington
Farmington Fairground
New Sharon
Farmington Falls
Allens Mills
Bullen Mills
Weeks Mills
Mercer
Mercer Bog
Witham Corner
North Chesterville
Chesterville
Knowltons Corner
Vienna
Mount Vernon
Seaveys Corner
Rome Corner
Belgrade Lakes
Titcomb Hill
Perham Hill
Cape Cod Hill
Hampshire Hill
York Hill
Martin Hill
Morrill Hill
Mt Philip
Roberts Hill
Sanders Hill
Old Bluff Hill
Zion Hill
Blabon Hill
Hoyt Hill
Berry Hill
Vienna Mtn
John Brown Mtn
Eaton Mtn
Round Top
Yallaly Hill
Sanborn Hill
Blueberry Hill
Beech Hill
Little Beech Hill
Chesterville Esker
Crowell Pond
Kimball Pond
Locke Pond
Sand Pond
Horseshoe Pond
Ladd Pond
FRANKLIN
KENNEBEC
SOMERSET
KENNEBEC
COUNTY
COUNTY
M E R C E R
V I E N N A
MOUNT VERNON
©DeLorme
70°05'00"
70.0833°
70°00'00"
70.0000°
KENTS HILL
Continue on Map 12

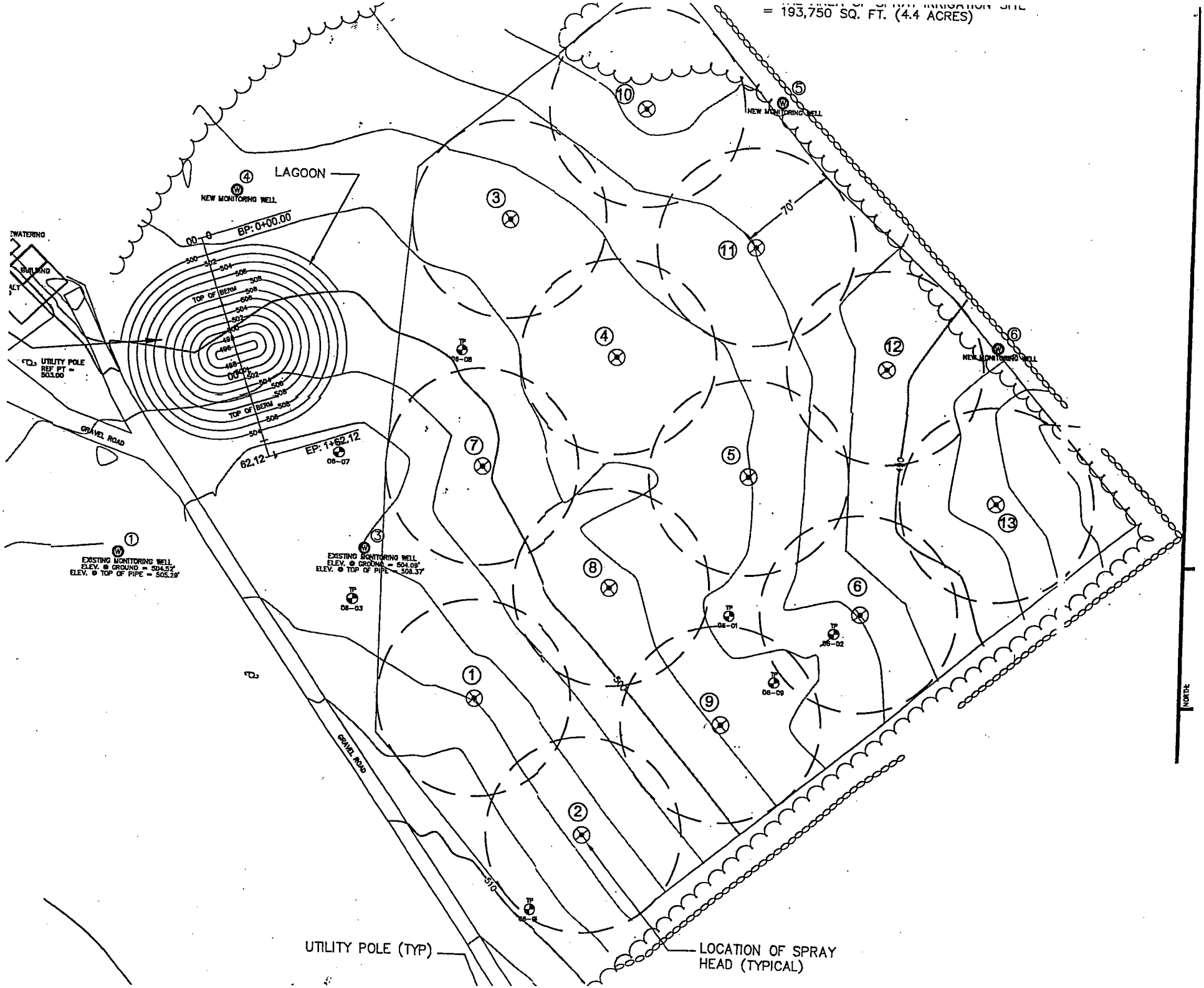
20

ATTACHMENT B

AAA Septic Flow Chart



= 193,750 SQ. FT. (4.4 ACRES)



ATTACHMENT C

Example Spray Irrigation Field Calibration Report Form

Background Data

Describe the reasons for system re-calibration (example annual calibration or change in operating conditions). When there has been a change in operating conditions list the specific changes such as new components (pumps, spray heads, size or type of pipes, etc.) or previously approved design changes.

Describe the current method for estimating the flow of wastewater to the irrigation area, ie, meter or pump calibration data. When using pump calibration data list the estimated flow rate of the pump for the existing site conditions (example gallons per minute). Also note the assumed diameter of coverage for the individual spray heads and the resulting area of application (acreage). Based on this information what is the assumed application rate in inches per hour and gallons per acre. Note: 1 acre-inch equals 27,150 gallons.

System Calibration

Describe or attach illustrations of the system calibration procedure, ie, grid layout or rain gauge or other uniform containers.

List the actual radius of spray coverage of the individual spray heads as measured during the field calibration and note any application uniformity problems such as noticeable ponding or uneven applications.

Calculate the acreage of the application based on the actual radius of coverage measured in the field. Show calculations.

Example: (27,150 gallons/acre/week)(1.5 inch/week)(1.3 acres) = 52,942 gallons/week

Calculate the estimated hourly application rate in inches per hour and gallons per acre obtained during the above calibration. Show calculations.

New Calibration Data

What changes to the estimates of wastewater flow are proposed, if any and why? And are the licensed application rates satisfied?

Any adjustments to improve uniformity of spray applications?

Submitted by: Signature of Operator in Responsible Charge	On Date:
Reviewed by: Signature of Operator in Responsible Charge	On Date:

ATTACHMENT D

Maine Department of Environmental Protection

Information Sheet: Low Flow Ground Water Sampling (June 1996)

Introduction

Maine DEP encourages the use of low flow ground water sampling (LFS) procedures to retrieve samples that are more representative of groundwater chemistry than samples collected using traditional bailing and purging techniques. The procedures to be used in low flow sampling are clearly outlined in the EPA Ground Water Issue Paper, Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures (Puls and Barcelona, 1996). DEP refers all interested parties to this paper for the specifics of the procedure. *We do not wish to spell out the procedure in a "cook book" method because we believe that the characteristics of each site will determine the details of the sampling procedure. The specifics will be worked out through collaboration with the DEP geologist assigned to the site and will be written into the site sampling plan. In some, but not all, cases DEP will require low flow sampling procedures to be used.*

What is Low Flow Sampling (LFS)?

Low flow sampling is a technique to minimize the hydraulic stress on the aquifer during purging and sampling. This is done by using an adjustable rate pump to remove water from the screened zone at a rate that will cause minimal drawdown of the water level in the well. (The use of bailers for purging or sampling is not acceptable in LFS.) Drawdown is measured in the well concurrent with pumping using a water level meter.

LFS does not require a specific flow rate or purge volume. A sample can be collected after the water level and measured field parameters (such as pH or dissolved oxygen or others) stabilize over three consecutive readings taken three to five minutes apart.

Special Considerations:

Pump Selection: Any adjustable flow rate pump may be used including, in some cases, peristaltic pumps. Although peristaltic pumps may decrease VOC concentrations, they are an improvement over bailers and may be less costly than other pumps.

Well Performance Evaluation: The DEP recommends that slug tests be performed before the initial sampling date and used to estimate optimal sample flow rate. We also recommend field testing the sampling procedure (including field parameters) prior to the first sampling round, and evaluating pump performance on site before purchasing specific dedicated pumps.

Cold Weather Sampling: Flow cells are difficult to use during cold winter weather. If sufficient LFS monitoring data is available, the use of flow cells can be eliminated during the cold weather months. In some cases eliminating winter sampling events may be acceptable to DEP.

Low Permeability Formations: A properly designed, constructed and developed well is extremely important in low permeability formations. No amount of creative sampling technology can overcome a bad well. The use of a hollow stem auger to drill a monitor well in a low permeability formation is not recommended and may not be approved by DEP. If the permeability of the aquifer is so low as to make low flow sampling impracticable, an alternative technique will be approved.

Low Flow Ground Water Sampling (June 1996)

Field Parameters: DEP recommends the measurement of water level, flow rate, pH, Eh, temperature, specific conductance, dissolved oxygen, and turbidity as field parameters to determine when a representative ground water sample can be collected. (Eh and dissolved oxygen must be obtained with the use of a flow cell.) After more is known about the aquifer, the number and types of field parameters may reduced or increased as long as sampling objectives are being met. Monitoring programs should continually be evaluated to determine if the goals are being met. Keep in mind that some field parameters in addition to equilibration testing are useful for chemical characterization.

Vertical Profiling: DEP strongly encouraged the use of low flow sampling to characterize the distribution of contamination within the aquifer. LFS removes the water sample from the aquifer in close proximity to the depth of the pump or the intake end of the sampling tube. By sampling from different depths within the screened interval, the vertical distribution of the contamination in the aquifer can be delineated. This is particularly important for understanding contaminant flow in stratified aquifers.

Misconceptions about Low Flow Sampling

Purge Volume Requirements: The LFS procedure does not use pre-calculated purge volumes to determine when samples can be collected. Samples are collected when water level and field parameters stabilize during pumping.

LFS is only for inorganics or high turbidity wells. LFS is a specific water delivery technique that is designed to produce a sample that most closely resembles the water quality in the screened zone. Other techniques place undue stresses on the aquifer that may alter the chemistry of the sample.

Common Questions

Why do low flow samples sometimes produce results that are no different than those achieved with earlier methods?

Due to chemical and hydrogeologic factors. some parameters are not as sensitive as others to sampling technique. For example, measurement of barium in a turbid sample from a bailed well will be vastly different from the barium concentration in a low turbidity sample collected by LFS techniques. In contrast, a gasoline concentration (GRO) may be similar no matter what turbidity the sampling method induces.

Why does Maine DEP encourage the use of LFS?

LFS is designed to collect a sample that most truly represents the water in the screened section of the aquifer surrounding the monitor well. It does not come from water that is mixed within the well by a bailer or inertial sampler, nor does it come from an average of water that flowed the full length of a long screened interval.

Low Flow Ground Water Sampling (June 1996)

The low flow sample can most often be trusted to best represent the contamination or (lack thereof) in the aquifer because it was produced by a process that minimized stress on the aquifer or well. Low flow sampling also reduces the variability in sampling technique that is inherent in traditional bailing and purging procedures. In summary LFS reduces the physical and chemical stresses, reduces the variability in sample procedures, and reduces the chance that changes in chemical concentrations are induced by the sampling technique.

Is LFS only for sites with Long Term Monitoring Programs?

No. Many investigations would benefit from the field data collected using LFS procedures. The investigator should review the Data Quality Objectives(DQOs) and consult with the DEP site geologist before selecting a sampling technique.

Reference:

Puls, R.W., and Barcelona M.J., 1996. EPA Ground Water Issue Low-Flow(Minimal Drawdown) Ground-Water Sampling Procedures, EPA/540/S-95/504.

ATTACHMENT E

Station Name and Address								Initials:
Date 00/05	Alarm Light Test	Alarm Horn Test	Alarms Noted	Dialer Test	Floats/ Transducer Tested	Floats/ Transducer Cleaned	#1 Pump Hours	#2 Pump Hours
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

Generator Fuel Level:
Oil:
Battery:
Radiator Block Heater:
Estimated Time in Hours:
Fire Extinguisher Checked:

OBSERVATIONS/COMMENTS:

ATTACHMENT F

Water Quality Monitoring Plan Details

Bureau of Land & Water Quality, Div. of Environmental Assessment

For projects required to monitor the quality and/or levels of surfacewater or groundwater, a water quality monitoring plan/protocol document must be provided as a separate manual, for ease-of-reference by the applicant, consultants, and the Department. This manual must be prepared, signed, and dated by a professional qualified in water chemistry interpretation (and when groundwater flow interpretations and monitoring well selection are conducted to prepare the plan, endorsed by a Certified Geologist), and must in-clude the following, at a minimum:

1. Identification/summary of all monitoring points (e.g. monitoring wells, lysimeters, springs, etc.) to be used for measurement of water levels or for water quality analysis. Monitoring points must have an assigned identification symbol (alpha/numeric), and, where appropriate, elevation referenced to an es-tablished, permanent benchmark. Include a map showing all monitoring points.

2. Outline of the monitoring frequency at each monitoring point, by the number of sampling/analysis events per year (e.g. quarterly, etc.) and by month (e.g. April, September, etc.).

3. Provision for obtaining adequate data on background water quality and/or levels, and for using a statistically-valid method for determining a significant increase in parameter concentrations (e.g. contamination levels, but not necessarily MCL's/MEG's). At a minimum, determination of background water quality or levels must consist of quarterly sampling/analysis for 1 year.

4. List of parameters to be analyzed, including references to the laboratory analysis methods to be utilized for each parameter, detection limits for each analysis method, and the MCL's/MEG's for all applicable parameters. All monitoring must include field parameters (conductivity, temperature, pH, and TDS), in addition to parameters specific to the monitoring program objectives.

5. Identification of the qualified personnel to take water level measurements and water quality analysis samples. These tasks should not be done by the applicant or employee of the applicant, but if proposed, then item 6 below must be addressed.

6. Written certification from a qualified expert that personnel to conduct monitoring are or will be adequately trained to properly collect measurements and/or samples by approved methods and protocols.

7. Description of the equipment and methods to be employed for water level measurement and/or water quality analysis sample-taking.

8. Description of the quality assurance/quality control and chain-of-custody protocols to be followed for water quality sampling, preservation, storage, transport, and laboratory analysis.

9. Provision for a professional qualified in water chemistry or groundwater flow interpretation to summarize, evaluate, and provide recommendations on the monitoring results that is submitted annually to the Department, unless a problem is evident, in which case the Department is to be notified immediately. Annual reports must include historical, as well as the most recent year's monitoring data for each monitoring point, which is presented in a tabular format. Reports must be signed/dated by the professional responsible for their preparation.

10. A provision that, if water levels or water quality monitoring results indicate adverse effects are occurring as a result of the project activity, then an evaluation will be made by a qualified professional and an appropriate remedial action/mitigation plan will be developed and submitted to the Department for re-view and approval.

ATTACHMENT G

Monitoring Well Installation Guidance

Standards For The Installation, Construction And Maintenance Of Wells And Piezometers, And For The Advancement Of Borings. This section describes requirements for wells, piezometers and borings for all types of monitoring and investigations at all types of facilities.

A. **Construction of wells and piezometers.** Monitoring wells and piezometers must be installed in a manner that maintains the integrity of the bore hole. The design and construction of the well or piezometer directly affects the quality and representativeness of the samples collected. The following criteria must be followed during the construction of wells, piezometers and borings.

(1) Construction and installation of wells and piezometers must be appropriate to insure that ground water samples and head measurements characterize discrete hydrogeologic units; and to prevent leakage of ground water, surface water or contaminants along the well annulus. If leakage is detected it must be corrected or the well abandoned. Wells installed for the purpose of ground water sampling and analysis must be capable of producing samples low in turbidity.

(2) All ground water monitoring wells must be constructed of PVC well casing material. Monitoring well casing must have a minimum inside diameter of 2 inches. Wells constructed in unconsolidated material less than 100 feet in depth must be constructed using a minimum of schedule 40 PVC well casing.

(3) All casing must be constructed of flush threaded joints or threaded coupling joints. All joints must be fitted with an "O" ring or wrapped with Teflon tape. Solvent welded joints are not acceptable.

(4) Wells and piezometers may be placed individually or as clusters. Clusters consist of individual wells or piezometers at varying depths in close proximity, each installed in its own boring.

(5) Appropriate precautions must be taken during drilling and construction of wells and piezometers to avoid introducing contaminants into the borehole. Unless otherwise approved by the Department based on site-specific characteristics, only potable water may be used in drilling. In some cases, analysis of water used in drilling may be required.

(6) All equipment to be placed into the boring must be properly decontaminated before use at the site and between boreholes.

(7) Borings for wells and piezometers must not be placed through or into waste unless prior Department approval has been granted and sufficient safety precautions are employed.

(8) Well screens are required for all wells and for open standpipe piezometers. All screens must be factory slotted and sized to retain at least 90% of the grain size of the filter pack. Water table variations, site stratigraphy, expected contaminant behavior, and ground water flow must be considered in determining screen position and length. Unless otherwise approved by the Department based on site-specific characteristics, screens for water table observation wells and monitoring wells must not exceed 10 feet in length. Screens for piezometers must not exceed 2 feet in length. Technical justification for the screen length chosen must be provided.

(9) Well screens must be located to readily detect changes in ground water chemistry in each potentially affected hydrogeologic unit. Monitoring wells must not be screened across hydrogeologic unit boundaries. Where surficial hydrogeologic units exceed 20 feet in saturated thickness, a monitoring well cluster of two or more wells is required, the screens of which must each not exceed 10 feet in length.

(10) Proposals for alternate instrumentation for piezometric measurements in sediments with hydraulic conductivity of less than 10E-6 cm/sec may be submitted to the Department for review and approval.

(11) The sand pack surrounding the well screen must consist of clean, inert siliceous material. The sand pack must minimize the amount of fine material entering the well and must not inhibit the flow of water into the well. The sand pack must be placed in the annular space around the well screen and extend two feet or twenty percent of the screen length (whichever is greater) above the top, and six inches below the bottom, of the screen. The sand pack material must be placed using the tremie method and must avoid bridging. The sand pack must be checked for proper placement. A finer grained sand pack material (100% passing the No. 30 sieve and less than 2% passing the No. 200 sieve) six inches thick must be placed above the sand pack and below the bentonite seal.

(12) Bentonite must be placed above the sand pack using the tremie or other approved method to form a seal at least three feet thick. If pellets or chips are used, sufficient time (usually 4 to 24 hours) must be allotted to allow for sufficient hydration of the bentonite prior to placement of overlying materials.

(13) Grout of cement and bentonite, bentonite alone, or other suitable, low permeability material, if approved by the Department, must completely fill the remaining annular space to the base of the surface seal. The sealing material must set up without being diluted by formation water, and must displace water in the annular space to insure a continuous seal. The sealant must be placed under pressure using a tremie or other method approved by the Department. Backfill of native material to construct the annular seal is prohibited.

(14) A bentonite or concrete surface seal and protective, lockable steel casing must be installed around all monitoring wells and long-term observation wells and piezometers. If a concrete surface seal is constructed, it must extend from below the level of frost action at least to the ground surface. The surface seal must prevent surface water or runoff from ponding around the well casing. The protective steel casing must be set at least six inches lower than the base of the surface seal and extend approximately two inches above the top of the PVC riser. The surface seal must be designed to minimize or eliminate heaving due to frost action. Both the surface seal and the protective steel casing must be designed and constructed so that neither is mechanically coupled to the PVC riser. The diameter of the protective casing must be at least two inches larger than the PVC riser. The protective casing, as well as the PVC riser, must be vented near the top to allow the escape of gasses and the equilibration of water level with atmospheric pressure changes. The protective casing must also have a drain hole at the base. A permanent, distinctive and readily visible marker identifying the well's designation must be affixed to the protective casing or near the well; and a means to locate the well during periods of high snow cover must also be provided. In areas of traffic, bumper guards or other suitable protection for the well are required.

B. Geologic sampling. A boring program is necessary to define site hydrogeology. Borings must be carefully sampled to provide surficial and lithological information.

(1) Borings must be continuously sampled throughout the length of the hole at all locations where surficial stratigraphy and bedrock characteristics have not previously been determined.

(2) In any additional borings not continuously sampled, samples must be taken at five foot intervals, at each stratigraphic change, and at the screened interval in surficial deposits and, in rock, as required by the Department.

(3) At a minimum, the screened interval of each surficial installation must be analyzed.

(4) At well or piezometer clusters, continuous samples must be taken from the surface to the base of the deepest boring. Other wells or piezometer borings in the cluster must be sampled at the screened interval.

(5) Bedrock must be sampled with a standard size NX or larger diameter core barrel. All other materials must be sampled using the split spoon or equivalent method.

(6) Bedrock refusal must be distinguished from boulder refusal by a minimum of ten feet of continuous rock core. Where core lithology does not conform to known bedrock characteristics, a longer core may be required to confirm bedrock refusal.

(7) Core samples must be securely stored and accessible throughout the life of the facility.

(8) Unconsolidated samples must be retained for five years after the original permit is issued. The location of the storage area must be designated in the operating record for the solid waste facility.

C. **Well and piezometer development.** Monitoring wells and piezometers must be constructed, installed and developed in a manner which assures that the well or piezometer is in good hydraulic contact with the hydrogeologic unit and that samples obtained will be representative of formation water. Wells installed for the purpose of ground water sampling and analysis must be capable of producing samples low in turbidity.

(1) All wells and piezometers must be developed as soon as possible after installation but not before the well seal and grout have set.

(2) Water must not be introduced into the well except with approval from the Department.

(3) Any contaminated water withdrawn during development must be properly managed.

(4) The entire saturated screened interval must be developed.

(5) Well development methods selected must insure that sediment-free water can be obtained. The Department may require multiple attempts at well development to ensure that sediment-free water can be obtained.

(6) Acceptable well development methods are specified in US EPA (1992A) "RCRA Ground-Water Monitoring: Draft Technical Guidance", and references listed therein. The development method selected must be appropriate for the stratigraphy/conditions encountered. Placement of screens in fine grained strata may require gentle development techniques to avoid pulling sediments into the well. The selected method must minimize to the greatest extent possible the amount of turbidity in the well.

D. **In-situ hydraulic conductivity testing and well performance evaluation.** In-situ hydraulic conductivity testing of each monitoring well must be performed to provide information on the hydraulic conductivity in the immediate vicinity of the monitoring well. A well performance evaluation must be performed on each monitoring well to determine the rate at which each well can be pumped without significant continued drawdown. In-situ hydraulic conductivity testing must be done in all monitoring wells and piezometers. The testing methods must not introduce contaminants into the well. Any contaminated water removed from the well must be properly managed.

DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated: May 2004 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's *General Laws*, 38 M.R.S.A. § 341-D(4), and its *Rules Concerning the Processing of Applications and Other Administrative Matters* (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted:

1. *Aggrieved Status.* Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.

6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.

7. *New or additional evidence to be offered.* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5).

Other Considerations in Appealing a Decision to the Board

1. *Be familiar with all relevant material in the DEP record.* A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.

2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.

3. *The filing of an appeal does not operate as a stay to any decision.* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

What to Expect Once You File a Timely Appeal with the Board

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

II. Appeals to Maine Superior Court

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

Additional Information

If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.