IN THE MATTER OF

WALDOBORO UTILITY DISTRICT	)	PROTECTION AND IMPROVEMENT
WALDOBORO, KNOX COUNTY, MAINE	)	OF WATERS
SURFACE WASTEWATER DISPOSAL SYSTEM	)	
#MEU508114	)	WASTE DISCHARGE LICENSE
#W-008114-5L-B-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of Maine law, 38 M.R.S.A., Section 414-A et seq., and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the WALDOBORO UTILITY DISTRICT (WUD) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The applicant has applied to the Department for renewal of Maine Waste Discharge License (WDL) #W-008114-5L-A-N, which was issued on December 20, 2002 for a five-year term, and subsequently modified by the Department on July 12, 2004 and July 11, 2005. The WDL authorized the operation of a surface wastewater disposal (spray-irrigation) system for the treatment and seasonal disposal of treated sanitary wastewater and commercial processing wastewater onto land in Waldoboro, Maine. The treatment system has a design capacity of 0.15 million gallons per day (MGD). The facility has been assigned Permit Compliance System (PCS) Tracking #MEU508114 to facilitate compliance tracking and record keeping.

LICENSE SUMMARY

This licensing action is similar to the December 20, 2002 WDL and subsequent license modifications noted above, in that it is carrying forward the:

1. storage lagoon effluent limitations and reporting requirements for biochemical oxygen demand (BOD_5), total suspended solids (TSS), nitrate-nitrogen, pH, and certain metals;
2. spray irrigation application rates for Spray Field (SF) #1, SF#2, SF#4, and SF#5;
3. reporting requirement for total monthly flow through spray irrigation;
4. groundwater monitoring well monitoring characteristics and requirements;
5. lagoon underdrain monitoring characteristics and requirements;
6. requirements to notify the Department of changes in the influent waste-stream;
7. spray field vegetation management requirements;
8. facility inspection and maintenance requirements;
9. requirements to maintain a current Operations and Maintenance Plan for the facility;
10. public access and signage requirements;
11. prohibition on accepting septage into the wastewater treatment facility; and
12. provisions for reopening the WDL for modification.

This licensing action is different from the December 20, 2002 WDL and noted license modifications, in that it is:

1. revising required storage lagoon effluent sampling dates;
2. requiring measurement and reporting of storage lagoon freeboard;
3. revising the timing of required testing for certain metals in storage lagoon effluent and groundwater monitoring wells;
4. revising the seasonal spray irrigation period to April 1 – November 30;
5. increasing the allowable spray irrigation rate for SF#3 to 81,456 gallons/acre/week (3.0 inches/acre/week), equivalent to the rate for SF#2;
6. specifying conditions for additional testing of specific conductance in groundwater;
7. changing the lagoon underdrain temperature requirement from Fahrenheit to Celsius;
8. updating facility General Operational Constraints;
9. updating Spray Irrigation Operational Constraints, Logs, and Reports requirements;
10. updating Lagoon Maintenance requirements;
11. updating Groundwater Monitoring Wells and Water Quality Monitoring Plan Details;
12. establishing a schedule of compliance to provide for repair or replacement of monitoring well #MW8;
13. updating Monitoring and Reporting procedures;
14. updating required reporting forms included as license attachments;
15. eliminating the *Spray Irrigation Performance Report* as an exhibit to the application for the next license renewal; and
16. generally establishing limitations, monitoring, and operational requirements for the storage lagoons, spray-irrigation fields, groundwater monitoring wells, and lagoon underdrains to provide consistency across similar facilities licensed by the Department.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated February 7, 2008 and revised March 10, 2008, 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 M.R.S.A., Section 464(4)(F), will be met, in that:

   (a) Existing in-stream 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 the WALDOBORO UTILITY DISTRICT, to operate a surface wastewater disposal (spray irrigation) system with a design capacity of 0.15 MGD, for the treatment and seasonal disposal (April 1 – November 30) of up to 54,300 gallons per acre per week (Spray Fields # 1, 4, and 5) and 81,456 gallons per acre per week (Spray Fields # 2 and 3) of treated sanitary wastewater and commercial processing wastewater onto land in Waldoboro, Maine, SUBJECT TO THE FOLLOWING CONDITIONS, and all applicable standards and regulations including:

1. *Standard Conditions of Approval for POTW Waste Discharge Licenses* revised July 16, 1996, 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 11th DAY OF March, 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: August 30, 2007

Date of application acceptance: September 7, 2007

Date filed with Board of Environmental Protection _____

This Order prepared by Robert D. Stratton, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS
A. LIMITATIONS AND MONITORING REQUIREMENTS

1. The licensee is authorized to operate a surface wastewater treatment and disposal system. The **STORAGE LAGOON EFFLUENT** (**OUTFALL #001A)** shall be limited and monitored as specified below. **(1)**

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS		MINIMUM MONITORING REQUIREMENTS	
	Daily Minimum as specified	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}*	---	Report S.U. *[12]*	1/Month(2) *[01/30]*	Grab *[GR]*
Lagoon Freeboard (3) *[82564]*	Report feet *[27]*	---	1/Week *[01/07]*	Measure *[MS]*
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(4) *[01/5Y]*	Grab *[GR]*

The italicized numeric values bracketed in the table above and on the following pages are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs). Footnotes are included on Pages 9-10.

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

2. The application of wastewater to the land via a spray irrigation system shall be limited to the time period **April 1 to November 30 of each calendar year**. The **SPRAY IRRIGATION FIELDS (SF#1, SF#2, SF#3, SF#4 and SF#5) (OUTFALLS #SF1A, #SF2A, #SF3A, #SF4A, #SF5A)** shall be limited and monitored as specified below.

EFFLUENT CHARACTERISTIC	DISCHARGE LIMITATIONS			MINIMUM MONITORING REQUIREMENTS	
	Monthly Total as specified	Weekly Maximum as specified	Daily Maximum As specified	Measurement Frequency as specified	Sample Type as specified
Application Rate (SF#1, SF#4, SF#5)	---	54,300 gal/acre(5) (2.0 inches/acre)	---	1/Week	Calculate
Application Rate (SF#2, SF#3) *[51125]*	---	81,456 gal/acre(5) (3.0 inches/acre) *[8B]*	---	1/Week *[01/07]*	Calculate *[CA]*
Flow - Total Gallons *[82220}*	Report (Gallons) *[80]*	---	---	1/Month *[01/30]*	Calculate *[CA]*

The italicized numeric values bracketed in the table above and on the following pages are code numbers that Department personnel utilize to code the monthly DMRs. Footnotes are included on Pages 9-10.

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SPECIAL CONDITIONS
A. LIMITATIONS AND MONITORING REQUIREMENTS

3. **GROUNDWATER MONITORING WELLS MW-1, MW-2, MW-7, MW-8, MW-9 AND MW-11 (OUTFALLS #MW1A, #MW2A, #MW7A, #MW8A, #MW9A, M11A)** shall be limited and monitored as specified below.

MONITORING CHARACTERISTIC	LIMITATIONS	MINIMUM MONITORING REQUIREMENTS	
	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Depth to Water Level Below Land Surface	Report (feet)(6)	2/Year(7)	Measure
[72019]	*[27]*	*[02/YR]*	*[MS]*
Nitrate-Nitrogen	10 mg/L	2/Year(7)	Grab
[00620]	*[19]*	*[02/YR]*	*[GR]*
Specific Conductance(8,9)	Report (umhos/cm)	2/Year(7)	Grab
[00095}	*[11]*	*[02/YR]*	*[GR]*
Temperature(8)	Report (°C)	2/Year(7)	Grab
[00011}	*[04]*	*[02/YR]*	*[GR]*
pH (Standard Units) (8)	Report (S.U.)	2/Year(7)	Grab
[00400}	*[12]*	*[02/YR]*	*[GR]*
Total Suspended Solids	Report (mg/L)	2/Year(7)	Grab
[00530}	*[19]*	*[02/YR]*	*[GR]*
Metals (Total): Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel and Zinc	Report ug/L	1/5 Years(4)	Grab
[01002, 01027, 01034, 01042, 01051, 71900, 01067, 01092]	*[28]*	*[01/5Y]*	*[GR]*

The italicized numeric values bracketed in the table above and on the following pages are code numbers that Department personnel utilize to code the monthly DMRs. Footnotes are included on Pages 9-10.

SPECIAL CONDITIONS
A. LIMITATIONS AND MONITORING REQUIREMENTS

4. Sampling of the **LAGOON UNDERDRAINS (UD1 – Lagoon #1, UD2 – Lagoon #2 and UD3 – Storage Lagoon)** (**OUTFALLS #UD1A, #UD2A, #UD3A)** shall be conducted as specified below.

MONITORING CHARACTERISTIC	LIMITATIONS		MINIMUM MONITORING REQUIREMENTS	
	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow Rate *[00058]*	---	Report GPM *[78]*	3/Year(10) *[03/YR]*	Estimate *[ES]*
Specific Conductance *[00095]*	---	Report (umhos/cm) *[11]*	3/Year(10) *[03/YR]*	Grab *[GR]*
Temperature *[00011]*	---	Report (°C) *[04]*	3/Year(10) *[03/YR]*	Grab *[GR]*

The italicized numeric values bracketed in the table above and on the following pages are code numbers that Department personnel utilize to code the monthly DMRs. Footnotes are included on Pages 9-10.

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

Footnotes

Sampling –Any change in sampling location(s) must be reviewed and approved by the Department in writing. Sampling and analysis must be conducted in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services. 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).

All detectable analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit.

1. **Storage Lagoon Effluent Sampling Location -** Storage lagoon effluent sampling shall be conducted at the spray field pump station and shall be representative of what is actually sprayed on the spray-irrigation fields.

2. **Storage Lagoon Effluent Sampling Frequency –** Storage lagoon effluent sampling shall be conducted at a minimum frequency of once per month during the months of **April, May, August, and October** of each year, unless otherwise specified by the Department. In the event that no wastewater is disposed of via the spray irrigation system for an entire month leading up to the sample period, the licensee is not required to conduct effluent monitoring for the parameters indicated.

3. **Lagoon Freeboard** – Storage lagoon freeboard shall be reported as the mathematical difference between the water level in the lagoon and the lowest elevation point in the lagoon berm. It shall be measured weekly to the nearest one tenth ($1/10^{th}$) of a foot, with the minimum monthly value reported on the DMR. If site conditions prevent safe or accurate measurements, the licensee shall estimate this value and indicate this to the Department.

4. **Screening Level Metals Testing –** The licensee shall conduct one round of testing for the specified metals **during the fourth calendar quarter of the fourth year of the license**, unless otherwise specified by the Department.

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

5. **Weekly Maximum for Spray Irrigation -** "Weekly" is defined as Sunday through Saturday. A field's weekly application rate is the total gallons sprayed over the applicable period of time divided by the size of the area of the field(s) utilized. Note: 27,152 gallons is equivalent to 1 acre-inch. The licensee shall measure the flow of wastewater to the irrigation area by the use of a flow measuring device that is checked for calibration at least once per calendar year. For Discharge Monitoring Report (DMR) reporting purposes, the licensee shall report the highest weekly application rate for the month in the applicable box on the form. Compliance with weekly reporting requirements must be reported for the month in which the calendar week ends**.**

6. **Depth to Water Level -** Depth to water level shall be measured to the nearest one-tenth ($1/10^{th}$) of a foot as referenced from the surface of the ground at the base of the monitoring well.

7. **Groundwater Monitoring Period –** Groundwater monitoring wells shall be sampled during the months of **May and October** of each year, unless otherwise specified by the Department.

8. **Field Measurements** – Specific conductance (calibrated to 25.0° C), temperature, and pH are considered to be "field" parameters, and are to be measured in the field via instrumentation. The licensee is required to test for these parameters whether wastewater was disposed of via the spray-irrigation system or not.

9. **Specific Conductance** – Temperature must be 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 groundwater testing requirements to determine causes and effects as related to spray irrigation activities.

10. **Lagoon Underdrain Monitoring** – Lagoon underdrain sampling shall be conducted in the months of **July, August and September** of each year, unless otherwise specified by the Department.

B. NARRATIVE EFFLUENT LIMITATIONS

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

2. The effluent must not lower the quality of any classified body of water (groundwater is a classified body of water under Title 38, Section 465-C) below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

SPECIAL CONDITIONS
C. TREATMENT PLANT OPERATOR

The wastewater treatment facility must be operated under the direction of a person holding a minimum of a **Grade II** Spray Irrigation Treatment System (SITS) certificate [or Maine Professional Engineer (PE) certificate] pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

D. AUTHORIZED DISCHARGES

The licensee is authorized to discharge only in accordance with 1) the licensee's General Application for Waste Discharge Permit, accepted for processing on September 7, 2007; 2) the terms and conditions of this license; and 3) to the spray irrigation disposal fields identified in the Waste Discharge License application. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition #4 of this license.

E. NOTIFICATION REQUIREMENT

In accordance with Standard Condition #6, *Change of Discharge,* the licensee shall notify the Department of:

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and

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

Additionally, **all results of testing for uranium** in the Waldoboro Water District's (WWD) water treatment filter backwash wastewater conducted pursuant to the WWD and WUD pretreatment agreement / permit **shall be maintained at the WUD facility and made available to Department staff upon request**.

SPECIAL CONDITIONS
F. GENERAL OPERATIONAL CONSTRAINTS

1. All wastewaters shall receive biological treatment through a properly designed, operated and maintained lagoon system prior to disposal via spray 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 groundwater which will render it unsatisfactory for usage as a public drinking water supply.

3. The surface wastewater disposal system shall not cause the lowering of the quality of the groundwater, 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 the groundwater monitoring results indicate adverse effects, the licensee may be required to take immediate remedial action(s), which may include but not be limited to, adjustment of the irrigation schedule or application rates, a reduction of the pollutant loading, or ceasing operation of the system until the groundwater 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 wastewater, sanitary system overflows (SSO's) or any malfunction that threatens the proper operation of the system. Notification shall be made in accordance with the attached Standard Condition #4 of this license.
   A *sanitary sewer overflow* (SSO) is the release of raw sewage from a sanitary collection system prior to reaching the treatment plant or facility. Spills out of manholes, into basements, onto municipal or private property, etc, and into the waters of the State are all considered to be SSO's.

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. 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.

7. The licensee shall at all times maintain in good working order and operate at maximum efficiency all wastewater collection, treatment and/or control facilities. **Within one hour after start-up of the spray-irrigation system**, the licensee shall inspect the spray-irrigation site ***or*** have other means 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. The procedures used to determine the system is functioning as designed shall be described in the facility's O&M manual. Should significant malfunctions or leaks be detected, the

SPECIAL CONDITIONS
F. GENERAL OPERATIONAL CONSTRAINTS (cont'd)

licensee must shut down the malfunctioning/leaking sections of the spray system and make necessary repairs before resuming operation. The licensee shall cease irrigation if runoff is observed outside the designated boundaries of the spray field(s). The licensee shall field calibrate equipment to ensure proper and uniform spray applications when operating. Calibration involves collecting and measuring application rate at different locations within the application area. A description of the calibration procedures and a log sheet that have been used for recording calibration results shall be included as part of the Operations & Maintenance manual.

8. **The licensee shall maintain a daily log** of all spray irrigation which records the date, weather, rainfall, areas irrigated, volume sprayed (gallons), application rates (daily and weekly), and other relevant observations/comments from daily inspections. The log shall be in accordance with the general format of the *"Monthly Operations Log"* form provided as Attachment A of this license, or other format approved by the Department. Weekly application rates shall be reported in accordance with the general format of the *"Spray Application Report by Week"* form provided as Attachment B of this license or other format as approved by the Department. The *Monthly Operations Log and Spray Application Report by Week* for each month shall be submitted to the Department as an attachment to the monthly Discharge Monitoring Reports (DMRs) in a format approved by the Department. Copies will also be maintained on site for Department review and for license operation maintenance purposes.

G. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS, LOGS, AND REPORTS

1. Suitable vegetative cover shall be maintained. Wastewater shall not be applied to areas without sufficient vegetation or ground cover as to prevent erosion or surface water runoff outside the designated boundaries of the spray fields. The licensee shall have an updated facilities management plan that includes provisions for maintaining the spray irrigation area in optimum condition for the uptake of nutrients and moisture holding capacity.

2. At least 10 inches of separation from the ground surface to the ground water table shall be present prior to spray irrigating.

3. No wastewater shall be spray irrigated following a rainfall accumulation exceeding 1.0 inches within the previous 24-hour period. A rain gauge shall be located on site to monitor daily precipitation. The licensee shall also manage application rates by taking into consideration the forecast for rain events in the 48-hour period in the future.

4. No wastewater shall be spray irrigated where there is snow present on the surface of the ground or there is any evidence of frost or frozen ground within the upper 10 inches of the soil profile.

SPECIAL CONDITIONS
G. SPRAY IRRIGATION OPERATIONAL CONSTRAINTS, LOGS, AND REPORTS (cont'd)

5. No traffic or equipment shall be allowed in the spray-irrigation field(s) except where installation occurs or where normal operations and maintenance are performed (this shall include forest management operations).

6. 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 conditions, moisture, etc.) for spray irrigation.

7. The licensee shall install the equivalent of one ground water level inspection well per spray field to verify that 10 inches of separation from the ground surface to the observed ground water level is present prior to spraying. Depth to ground water shall be reported in accordance with the general format of *"Depth to Groundwater"* report form provided as Attachment C of this license or other format as approved by the Department.

H. VEGETATION MANAGEMENT

1. The licensee shall remove grasses and other vegetation such as shrubs and trees if necessary so as not to impair the operation of the spray-irrigation system, ensure uniform distribution of wastewater over the desired application area and to optimize nutrient uptake and removal.

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.

I. LAGOON MAINTENANCE

1. The banks of the lagoon shall be inspected periodically during the operating season (at least two times per year) and properly maintained at all times. There shall be no overflow through or over the banks. Any signs of leaks, destructive animal activity or soil erosion of the banks shall be repaired immediately.

2. The banks of the lagoon shall be maintained to keep them free of woody vegetation and other vegetation that may be detrimental to the integrity of the bank and/or lagoon liner. The waters within the lagoons shall be kept free of all vegetation (i.e. grasses, reeds, cattails, etc) that hinders the operation of the lagoon.

3. The licensee shall maintain the lagoon freeboard at a level no higher than design levels.

4. The treatment and storage lagoons shall be dredged as necessary to maintain the proper operating depths in all lagoons 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

J. INSPECTIONS AND MAINTENANCE

The licensee shall periodically inspect all system components to ensure the facility is being operated and maintained in accordance with the design of the system. Maintenance logs shall be maintained for each major system component including pumps, pump stations, septic tanks, lagoons, spray apparatus, and pipes. At a minimum, the logs shall include the unique identifier [see Special Condition F(6)], the date of maintenance performed, name(s) of person(s) performing the maintenance, and other relevant system observations.

K. GROUNDWATER MONITORING WELLS AND WATER QUALITY MONITORING PLAN DETAILS

1. The licensee shall maintain an approved groundwater quality monitoring plan prepared by a professional qualified in water chemistry. The plan shall include historical and current monitoring data for each monitoring point, represented in tabular and graphical form.

2. All monitoring wells shall be equipped with a cap and lock to limit access and shall be maintained in a secured state at all times. The integrity of the monitoring wells shall also be verified annually in order to ensure representative samples of groundwater quality.

3. 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.

L. SCHEDULE OF COMPLIANCE

The Department is establishing a schedule of compliance for the repair or replacement of groundwater monitoring well #MW8 based on a long-term trend of monitoring data viewed as not representative of groundwater conditions and pursuant to Permit Special Condition K.3. The Department views this well as important in monitoring groundwater conditions at the WUD site, as it is the only monitoring well positioned downgradient of spray field SF #2.

On or before April 1, 2008, the licensee shall investigate and report to the Department on measures necessary to repair monitoring well #MW8, such as regrouting the well; assessing the integrity of the protective stick-up casing and repairing it as necessary, and/or other measures so that #MW8 provides accurate groundwater data. By this date, if the licensee determines that repair of #MW8 is infeasible, WUD shall provide a scope of work for replacement of #MW8, complete with a recommended location with its soil, geologic, and groundwater conditions, for Department review. ***[53999]***

SPECIAL CONDITIONS
L. SCHEDULE OF COMPLIANCE (cont'd)

On or before July 1, 2008, the licensee shall ensure the functionality of #MW8 or have installed and made operational a replacement monitoring well for #MW8 that assesses groundwater conditions downgradient of SF#2. ***[24599]***

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

This facility shall have a current written comprehensive Operation & Maintenance (O & M) Plan. The plan shall provide a systematic approach by which the licensee shall at all times, properly operate and maintain all facilities and the systems of treatment and control (and related appurtenances) which are installed or used by the licensee to achieve compliance with the conditions of this license.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the licensee shall evaluate and modify the O& M Plan including site plan(s) and schematic(s) for the wastewater 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 the Department personnel upon request.

Within 90 days of completion of new and substantial upgrades of the wastewater treatment facility, the licensee shall submit the updated O&M Plan to their Department inspector for review and comment.

N. PUBLIC ACCESS TO LAND APPLICATION SITES AND SIGNAGE

Access to the land application sites shall be limited during the season of active site use. The licensee shall install signs measuring at least 8 ½" x 11", in areas of concern around the perimeter of the lagoon and spray irrigation sites that inform the general public that the area is being used to dispose of sanitary wastewaters. The signs must be constructed of materials that are weather resistant. The licensee must annually inspect and make any necessary repairs to the signage to comply with this condition.

O. DISPOSAL OF SEPTAGE IN WASTEWATER TREATMENT FACILITY

The licensee is prohibited from accepting septage for disposal into any part or parts of the wastewater disposal system. Septage shall mean any waste, refuse, effluent, sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added.

SPECIAL CONDITIONS

P. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to a Department Regional Office 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 DMR and all other reports required herein shall be submitted to the Department assigned compliance inspector (unless otherwise specified) at the following address:

Maine Department of Environmental Protection
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, ME 04333-0017

Q. 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 including that related to uranium testing, 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.

R. 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 the license shall remain in full force and effect, and shall be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

(Monthly Operations Log)

WALDOBORO UTILITY DISTRICT **Monthly Operations Log** **(Month/Year) (_____/_____)**

#W008114-5L-B-R / #MEU508114; Fields #_____ Weekly Application Rate: _____ gallons/acre (_____ inches)

	A	B	C	D	E	F	G	H	I	J	K
Day	Date	Precip Inches	Temp	Weather	Wind-Dir/Speed	Soil Moisture	Quantity -Total Gal Pumped	Name of Field(s) Used	Acres Sprayed	Gallons/Acre (Col G / I)	Total Inches Sprayed
	1										
	2										
	3										
	4										
	5										
	6										
	7										
	8										
	9										
	10										
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	24										
	25										
	26										
	27										
	28										
	29										
	30										
	31										
Monthly Total =											

ATTACHMENT B

(Spray Application Report by Week Form)

WALDOBORO UTILITY DISTRICT **Spray Application Report by Week** **(Month/Year) (_____/_____)**

#W008114-5L-B-R / #MEU508114; Weekly Application Rate _____ gallons/acre; _____ 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		
SF#1	12	54,300							
SF#2	12	81,456							
SF#3	12	81,456							
SF#4	12	54,300							
SF#5	12	54,300							

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 is 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 _____

ATTACHMENT C

(Depth to Groundwater Report Form)

WALDOBORO UTILITY DISTRICT **Depth to Groundwater (Tenths of Feet) (Month/Year) (_____/_____)**

#W008114-5L-B-R / #MEU508114

Field Name/#	Monitoring Location	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		
SF#1								
SF#2								
SF#3								
SF#4								
SF#5								
					Total Number of Exceptions			

Note: Special Condition G 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: February 7, 2008
Revised: March 10, 2008

PCS TRACKING NUMBER: **#MEU508114**
MAINE WDL NUMBER: **#W-008114-5L-B-R**

NAME AND ADDRESS OF APPLICANT:

WALDOBORO UTILITY DISTRICT
P. O. Box 848
Waldoboro, Maine 04572

COUNTY: WALDO

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

850 Union Road
Waldoboro, Maine 04572

RECEIVING WATER/CLASSIFICATION: **Ground Water/Class GW-A**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: Mr. John Fancy
(207) 832-0422(Waldoboro)
wud@midcoast.com

1. APPLICATION SUMMARY

Application: The Waldoboro Utility District (WUD) has applied to the Department for renewal of Maine Waste Discharge License (WDL) #W-008114-5L-A-N, which was issued on December 20, 2002 for a five-year term, and subsequently modified by the Department on July 12, 2004 and July 11, 2005. The WDL authorized the operation of a surface wastewater disposal (spray-irrigation) system for the treatment and seasonal disposal of treated sanitary wastewater and commercial processing wastewater onto land in Waldoboro, Maine. The treatment system has a design capacity of 0.15 million gallons per day (MGD). The facility has been assigned Permit Compliance System (PCS) Tracking #MEU508114 to facilitate compliance tracking and record keeping.

2. LICENSE SUMMARY

a. Conditions: This licensing action is similar to the December 20, 2002 WDL and subsequent license modifications noted above, in that it is carrying forward the:

1. storage lagoon effluent limitations and reporting requirements for biochemical oxygen demand (BOD_5), total suspended solids (TSS), nitrate-nitrogen, pH, and certain metals;
2. spray irrigation application rates for Spray Field (SF) #1, SF#2, SF#4, and SF#5;
3. reporting requirement for total monthly flow through spray irrigation;
4. groundwater monitoring well monitoring characteristics and requirements;
5. lagoon underdrain monitoring characteristics and requirements;
6. requirements to notify the Department of changes in the influent waste-stream;
7. spray field vegetation management requirements;
8. facility inspection and maintenance requirements;
9. requirements to maintain a current Operations and Maintenance Plan for the facility;
10. public access and signage requirements;
11. prohibition on accepting Septage into the wastewater treatment facility; and
12. provisions for reopening the WDL for modification.

This licensing action is different from the December 20, 2002 WDL and noted license modifications, in that it is:

1. revising required storage lagoon effluent sampling dates;
2. requiring measurement and reporting of storage lagoon freeboard;
3. revising the timing of required testing for certain metals in storage lagoon effluent and groundwater monitoring wells;
4. revising the seasonal spray irrigation period to April 1 – November 30;
5. increasing the allowable spray irrigation rate for SF#3 to 81,456 gallons/acre/week (3.0 inches/acre/week), equivalent to the rate for SF#2;
6. specifying conditions for additional testing of specific conductance in groundwater;
7. changing the lagoon underdrain temperature requirement from Fahrenheit to Celsius;
8. updating facility General Operational Constraints;
9. updating Spray Irrigation Operational Constraints, Logs, and Reports requirements;
10. updating Lagoon Maintenance requirements;
11. updating Groundwater Monitoring Wells and Water Quality Monitoring Plan Details;
12. establishing a schedule of compliance to provide for repair or replacement of monitoring well #MW8;
13. updating Monitoring and Reporting procedures;
14. updating required reporting forms included as license attachments;
15. eliminating the *Spray Irrigation Performance Report* as an exhibit to the application for the next license renewal; and
16. generally establishing limitations, monitoring, and operational requirements for the storage lagoons, spray-irrigation fields, groundwater monitoring wells, and lagoon underdrains to provide consistency across similar facilities licensed by the Department.

2. LICENSE SUMMARY (cont'd)

b. History: The most recent relevant regulatory actions and or significant events include the following:

August 10, 1987 – The US Environmental Protection Agency (USEPA) issued a renewal of National Pollutant Discharge Elimination System (NPDES) Permit #ME0100714 to the WUD for the discharge of wastewater from an activated sludge treatment facility to the Medomak River in Waldoboro. The permit was issued for a five year term.

March 17, 1994 – The WUD filed a timely application with the USEPA to renew the NPDES permit for the activated sludge treatment facility, however the application was never acted on.

February 23, 1999 – The Department issued WDL renewal #W002677-5L-B-R to the WUD for the discharge of up to 0.2 MGD of wastewater from an activated sludge treatment facility to the Medomak River in Waldoboro. The WDL was issued for a five-year term.

January 20, 2000 – The Department issued Site Location of Development Permit #L-19998-26-A-N to the WUD for the site development work for a new surface wastewater treatment facility.

April 4, 2000 – The WUD submitted an application to the Department for a WDL to operate a surface wastewater disposal system.

November 2001 – Construction of the new surface wastewater disposal system was completed. The new facility began receiving wastewaters into the aerated lagoons and the discharge to the Medomak River from the activated sludge treatment facility, pursuant to Maine WDL #W-002677-5L-B-R and NPDES Permit #ME0100714, ceased.

June 7, 2002 – The Department issued a letter to the WUD authorizing the facility to operate the surface wastewater disposal system in accordance with interim limitations and monitoring requirements specified.

December 20, 2002 – The Department issued WDL #W-008114-5L-A-N / PCS Tracking #MEU508114 to the WUD for the operation of a surface wastewater disposal (spray-irrigation) system in Waldoboro, Maine for the treatment and disposal of up to 55 million gallons per year of treated sanitary wastewater. The WDL was issued for a five year term.

July 12, 2004 – The Department issued an Administrative Modification of WDL #W-008114-5L-A-N / PCS Tracking #MEU508114, eliminating requirements for development of a soil sampling plan, collection of soil samples, and reporting of sample results to the Department. All other terms and conditions of the WDL remained in place.

2. LICENSE SUMMARY (cont'd)

July 11, 2005 - The Department issued an Administrative Modification of WDL #W-008114-5L-A-N / PCS Tracking #MEU508114, increasing the allowable spray irrigation application rate for spray field #2. All other terms and conditions of the WDL remained in place.

August 30, 2007 – The WUD submitted a timely application for renewal of its WDL. The application was assigned WDL # W-008114-5L-B-R / PCS Tracking #MEU508114.

c. Source Description: - The WUD receives approximately 73,500 gallons per day and 27.5 – 31 million gallons per year of sanitary wastewater from approximately 375 residential and commercial customers within a 35 square mile area of the town of Waldoboro. The majority of its customers are single and multi-family housing units. The WUD has five pump stations, which route wastewater flows through 315 feet of 6-inch diameter piping, 26,850 feet of 8-inch piping, and 4,440 feet of 15-inch piping. Previously WUD also received sanitary wastewater from two industrial facilities. However, both Best Felts and Osram Sylvania have since ceased operations in Waldoboro.

The WUD has placed, or will place, pretreatment requirements on two of its contributing facilities: the Waldoboro Water District (WWD) and the Ocean Organics Corporation. The WWD's pretreatment agreement relates to its discharge of up to 50 pounds per year of uranium (U-238) in its ion exchange unit filter backwash. The levels of radionuclides in groundwater in the Waldoboro area necessitate either blending with other sources or treatment (filtration) of the drinking water supply. A treatment system requires periodic maintenance (backwashing), which potentially results in the U-238 discharge described. The WWD installed four new production wells in 2006, the improved quality of which was projected to reduce the U-238 contribution to the wastewater stream by 75% from previous levels. In January 2008, WUD reported that it had yet to receive a discharge from the WWD. Though such a discharge is still possible, the new supply wells have been reportedly performing better than anticipated, so that the WWD filters have not been used or backwashed, and a discharge to the WUD has not been necessary to date. The potential WWD waste-stream is further discussed in Fact Sheet Section 5b, Storage Lagoon Effluent Monitoring Requirements. The Ocean Organics Corporation seasonally processes seaweed and manufactures lawn care products, generating up to 2,000 gallons per day of cleanup water. The WUD has prepared a pretreatment agreement for the Ocean Organics Corp., to be implemented prior to receipt of any wastewater from the facility. To date, the Ocean Organics Corp. has transported its wastewater to the Interstate Septic facility in Rockland for treatment and disposal and has not yet discharged wastewater to the WUD.

WUD has no combined sewer overflows (CSO's) and does not receive septage from local septage haulers. Wastewater treatment is provided as described below.

2. LICENSE SUMMARY (cont'd)

d. Wastewater Treatment: The WUD wastewater treatment facility is located on a 350-acre parcel of land to the northeast of Waldoboro village on Route 235. Wastewater flows received at the WUD facility are first screened through a mechanical bar screen at the Main Pump Station near the center of Waldoboro village. The WUD provides secondary treatment of wastewater through two, 2.77-million gallon aerated facultative lagoons. Each treatment lagoon has a surface area of approximately 1.03 acres and a depth of 15-feet with 3-feet of freeboard. The two lagoons have a total volume of 5.5-million gallons and provide aeration, biological oxidation and settling. At the projected average daily flow rate of 150,000 gpd, the aerated lagoon system provides for a detention time of 35 days. Wastewater enters Lagoon #1 through a diffuser pipe that distributes the flow across the lagoon, then passes through a flow structure to Lagoon #2. The two lagoons are operated in series, but pipes and valves exist to allow Lagoon #2 to be operated independently if desired. Following lagoon treatment, wastewater flows are passed through a flow structure to the WUD's 57-million gallon holding lagoon. The storage lagoon has a surface area of approximately 10.5 acres and a depth of 20-feet with 5-feet of freeboard. The storage lagoon is capable of storing up to seven months of wastewater and precipitation. The permittee reports operating the facility as designed, but regularly needing to operate the storage lagoon at above the design level. As the permittee has determined the higher operating levels to be safe, the WUD questions the accuracy of the design level. All three lagoons are constructed with a 60-mil high density polyethylene (HPDE) liner over a sand blanket and 18-inches of till. From April 1 to November 30, treated wastewater is spray irrigated. From December 1 to May 31, wastewater is stored in the storage lagoon until the approved spray period.

The WUD has five spray irrigation fields, designated as Spray Fields (SF) 1 through 5, located adjacent to the aeration lagoons and storage lagoon. The spray fields total approximately 60-acres in size and have a design treatment capacity of 0.15 million (150,000) gallons per day. Each spray field contains 30 spray heads and each spray head distributes water in a circular pattern measuring 150-feet in diameter or 17,660-square feet. Portions of SF#2 and SF#3 consist of hayfield, while remaining spray areas consist of an even-aged (25-30 years) cover of mixed hardwood or spruce-fir forest. Swaths measuring approximately 100 feet wide have been cut through the wooded areas to place piping for the irrigation system, maximize the effectiveness of each spray nozzle and enhance the movement of air through the spray fields to aid in evaporation rates. The WUD is licensed to spray irrigate 54,300-gallons per acre (2-inches/acre) for SF #1, #4, and #5 and 81,455-gallons per acre (3-inches/acre) for SF #2 and #3. Typically, wastewater is sprayed on only one field at a time. The spray irrigation can be operationally limited based on the volume applied via computer (typical) or by the length of time of the application via timer. Generally, each field is sprayed twice each day for four days each week (Monday–Thursday) and "rested" for three days each week (Friday-Sunday) prior to receiving wastewater again. A field approved for 2-inches of wastewater per week will receive 0.25-inches of wastewater, eight times.

2. LICENSE SUMMARY (cont'd)

The WUD site contains two background groundwater monitoring wells (MW-9, MW-11) and four downgradient monitoring wells (MW-1, MW-2, MW-7, MW-8) that are monitored to determine any wastewater discharge related groundwater problems and provide for remedial action (see Section 2e below). The WUD also has a lagoon underdrain system that is monitored to detect any problems with the facility treatment and storage lagoons.

The facility is located over a sand and gravel aquifer or a fractured bedrock aquifer. Soil types found in various extents in the spray fields consist of Brayton, Colonel, Dixfield, Hermon, Lamoine, Marlow, Scantic, and Tunbridge series, which range from poorly drained to somewhat excessively drained soils. A high intensity Class B soil survey of the site indicates the soils in the spray area are suitable for attenuating pollutant loading based on spray irrigation application rates in this licensing action. See Fact Sheet Attachment A for a location map for the WUD wastewater treatment facility and Fact Sheet Attachment B for a spray irrigation distribution plan.

e. Ground Water Monitoring Wells: The WUD monitors the following groundwater monitoring wells for compliance with this WDL.

Monitoring Wells	PCS Identifier	Location
#MW 1	#MW1A	Downgradient – East of SF#3
#MW 2	#MW2A	Downgradient – Northeast of SF#4
#MW 7	#MW7A	Downgradient – West of SF#1 and storage lagoon
#MW 8	#MW8A	Downgradient – South of SF#1, West of SF#2
#MW 9	#MW9A	Background – East of SF#2, West of SF#3
#MW 11	#M11A	Background – North of storage lagoon, South of SF#5

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 Surface Water and Groundwater Classification Systems.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A. § 470 states, *"All ground water* (including that at the point of discharge) *shall be classified as not less than Class GW-A, except as otherwise provided in this section."* Maine law, 38 M.R.S.A. § 465-C(1) states, *"Class GW-A … shall be of such quality that it can be used for public drinking water supplies. These waters shall be free of radioactive matter or any matter that imparts color, turbidity, taste or odor which would impair usages of these waters, other than that occurring from natural phenomena."*

5. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. Explanation of Monitoring Parameters: The following parameters are required to be monitored and/or limited in this licensing action. A summary of monitoring data for each parameter for the WUD for spray seasons 2003 through 2007 is included on subsequent pages.

1. Biochemical Oxygen Demand (BOD_5) - BOD_5 monitoring is required in the storage lagoon effluent (limit established), carried forward from the previous licensing action. Monitoring for BOD_5 yields an indication of the condition of the wastewater being applied from the lagoon, of the degree of loading of organic material, and the effectiveness of the spray-irrigation treatment process. The limit of 100 mg/L established in the previous license as a best practicable treatment (BPT) standard is being carried forward in this licensing action.

2. Total Suspended Solids (TSS) – TSS monitoring is required in the storage lagoon effluent (limit established) and in the monitoring wells (monitoring only), carried forward from the previous licensing action. TSS in the groundwater yields an indication of the integrity of the monitoring wells and of treatment efficiency. The limit of 100 mg/L established in the previous license as a BPT standard is being carried forward in this licensing action.

3. Nitrate-nitrogen – Nitrate-nitrogen monitoring is required in the storage lagoon effluent (monitoring only) and in the monitoring wells (limit established), carried forward from the previous licensing action. Nitrate-nitrogen compounds are by-products of the biological breakdown of ammonia and are inherent in domestic like sanitary wastewater. 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 the drinking water supply are of human health concern. The limit of 10 mg/L established in the previous license is a National Primary Drinking Water standard and is being carried forward in this licensing action.

4. Specific Conductance, Temperature and pH - Specific conductance, temperature and pH monitoring are required in the monitoring wells and specific conductance and temperature monitoring are required in the under-drains, carried forward from the previous licensing action. These parameters are considered to be “field” parameters meaning that they are measured directly in the field via instrumentation and do not require laboratory analysis. These parameters are considered as surveillance level monitoring parameters and are used as early-warning indicators of potential groundwater contamination when there exists a statistically significant trend upwards in the data or sudden spikes from previous levels. Temperature data is important in calibrating the conductance measurements.

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

5. Metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc): Metals monitoring is required in the storage lagoon effluent and in the monitoring wells, carried forward from the previous licensing action. The previous licensing action established metals monitoring and reporting requirements at a screening level frequency (one round of testing during the 12-month period prior to license expiration). This licensing action is revising the metals testing requirements to the fourth calendar quarter of the fourth year of the license to provide for earlier availability of data. The Department reserves the right to reopen this license in accordance with Special Condition Q based on new information provided by the licensee.

6. Chlorides – Chloride monitoring was required in the monitoring wells in the previous licensing action, but is not being carried forward in this licensing action. Chlorides were previously considered as another early warning indicator of potential groundwater contamination by wastewater, however the Department no longer considers it a necessary parameter to monitor for this type of facility.

Additional operation related parameters for the spray irrigation fields, groundwater monitoring wells, and lagoon under-drains are addressed within the text and tables below.

b. Storage Lagoon Effluent Monitoring Requirements: As described above, the previous licensing action established storage lagoon effluent (Outfall #001A) monitoring requirements for: 1) biochemical oxygen demand (BOD_5); 2) total suspended solids (TSS); 3) nitrate-nitrogen, 4) pH; and 5) certain metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc), which are being carried forward in this licensing action based on Department Best Professional Judgement (BPJ). In this licensing action, lagoon effluent monitoring requirements are being revised for all parameters except the metals, to be conducted during the months of April, May, August, and October of each year. Lagoon effluent monitoring for the specified metals is being revised such that it is only required to be performed during the fourth calendar quarter of the fourth year of the license. This licensing action requires measurement and reporting of storage lagoon freeboard as a demonstration of best management practices.

The Department reviewed Discharge Monitoring Report (DMR) data for the WUD for spray seasons 2003 through 2007 and found the following storage lagoon effluent information.

STORAGE LAGOON EFFLUENT (OUTFALL #001A) (2003 – 2007)

Parameter	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
BOD_5	3 mg/L	49 mg/L	14 mg/L	28
TSS	2 mg/L	46 mg/L	14 mg/L	28
Nitrate N	0.1 mg/L	15.4 mg/L	1.9 mg/L	28
pH	7.0 S.U.	10.6 S.U.	---	28

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

In November 2004, based on the presence of uranium in wastewater discharged from the Waldoboro Water District's drinking water treatment system to the WUD, the Maine Radiation Control Program (RCP) of the Maine Department of Health and Human Services reviewed results of U-234 and U-238 sampling in WUD's holding lagoon and projected the amounts of uranium to be spray irrigated and accumulated in the upper portion of the soil. The RCP characterized the uranium addition to be "*very small*" and "*within the natural variation of uranium concentrations in soil*". As discussed in Fact Sheet Section 2c, the WWD installed four new production wells in 2006, the improved quality of which was projected to reduce the U-238 contribution to the wastewater stream by 75% from previous levels. In January 2008, WUD reported that due to better than anticipated performance of WWD's new wells, it had yet to receive a discharge from the WWD. The WUD has placed pretreatment requirements on the WWD for the discharge of U-238 in its drinking water supply ion exchange unit filter backwash. These requirements include containment and testing of any WWD filter backwash wastewater for uranium prior to acceptance by the WUD. Based on the RCP's 2004 analysis of soil changes associated with the previous water supply, projected significant improvements in uranium levels from WWD's new drinking water supply wells, and the performance of WWD's new system to date, this licensing action does not establish effluent limits or monitoring requirements for uranium at this time. However, pursuant to WDL Special Condition E, Notification Requirement, this licensing action requires that all results of testing for uranium in the WWD's water treatment filter backwash wastewater conducted pursuant to the WWD and WUD pretreatment agreement / permit shall be maintained at the WUD facility and made available to Department staff upon request.

c. Spray Field Wastewater Application Rate: The previous licensing action established both daily maximum and weekly average wastewater application rates of 54,300 gal/acre/day (2 inches / acre) for spray irrigation fields SF#1, SF#2, SF#3, SF#4, and SF#5. In a July 11, 2005 Administrative Modification, the Department revised the rate for SF#2 to a weekly average of 81,456 gal/acre/day (3 inches / acre), continued the weekly average rates for the other spray fields noted above, and eliminated the daily maximum rate limit for all spray fields. In its 2007 renewal application, WUD requested that the application rate limit for SF#3 also be increased to 81,456 gal/acre/day (3 inches / acre) based on its adjacency to SF#2, similar elevation and soil types, and anticipation that SF#3 will be able to accommodate the same spray rate. Based on the soil types and geology of the spray fields, as well as past monitoring data, this licensing action is carrying forward the spray application limit of 54,300 gal/acre/day (2 inches / acre) for spray fields SF#1, SF#4, and SF#5, the application limit of 81,456 gal/acre/day (3 inches / acre) for SF#2, and establishing an application limit of 81,456 gal/acre/day (3 inches / acre) for SF#3. The previous licensing action also established a monthly total flow reporting requirement for each spray field, which is being carried forward in this licensing action. The weekly application limits are established as a margin of safety against hydraulically overloading a spray field and are based on the treatment capabilities of the in-situ soils. Regardless of the calculated rate, the system operator shall monitor each waste application to verify adequate infiltration of the waste into

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

the soil and an irrigation cycle must be stopped if runoff occurs outside the boundary of the designated spray areas.

The Department reviewed DMR data for the WUD for spray seasons 2003 through 2007 and found the following spray application rate information.

SPRAY IRRIGATION FIELD WASTEWATER APPLICATION RATES (2003 – 2007)

Daily Maximum	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
SF#1	6,749 gal/acre/day	27,914 gal/acre/day	14,080 gal/acre/day	34
SF#2	7,170 gal/acre/day	43,824 gal/acre/day	18,000 gal/acre/day	33
SF#3	6,641 gal/acre/day	40,027 gal/acre/day	14,726 gal/acre/day	34
SF#4	3,292 gal/acre/day	43,383 gal/acre/day	12,153 gal/acre/day	29
SF#5	1,842 gal/acre/day	17,625 gal/acre/day	11,548 gal/acre/day	29

Weekly Average	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
SF#1	13,090 gal/acre/week	53,992 gal/acre/week	47,222 gal/acre/week	34
SF#2	12,225 gal/acre/week	81,088 gal/acre/week	62,657 gal/acre/week	32
SF#3	11,808 gal/acre/week	53,992 gal/acre/week	50,088 gal/acre/week	34
SF#4	6,371 gal/acre/week	53,316 gal/acre/week	31,249 gal/acre/week	29
SF#5	1,842 gal/acre/week	53,307 gal/acre/week	27,633 gal/acre/week	29

Monthly Total Flow	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
SF#1	0.407 mill. gal / month	3.253 mill. gal / month	2.09 mill. gal / month	33
SF#2	0.446 mill. gal / month	4.831 mill. gal / month	2.85 mill. gal / month	33
SF#3	0.416 mill. gal / month	3.213 mill. gal / month	2.23 mill. gal / month	32
SF#4	0.102 mill. gal / month	2.835 mill. gal / month	1.07 mill. gal / month	29
SF#5	0.022 mill. gal / month	1.701 mill. gal / month	0.93 mill. gal / month	29

The licensee shall field-calibrate their equipment on a regular basis to ensure proper application and uniformity, and when operating conditions are changed from the assumed design. Calibration involves collecting and measuring flow at several locations in the application area (typically a grid pattern of containers with uniform diameters).

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

d. Groundwater Monitoring Well Monitoring Requirements: As indicated above, the previous licensing action established Ground Water Monitoring Well (Outfalls #MW1A, #MW2A, #MW7A, #MW8A, #MW9A, and #M11A) monitoring requirements of: 1) depth to water level below surface; 2) nitrate-nitrogen (daily maximum concentration limit of 10 mg/L based on the National Primary Drinking Water standard); 3) specific conductance; 4) temperature (˚C); 5) pH; 6) total suspended solids (TSS); and 7) certain metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) , which are being carried forward in this licensing action based on Department BPJ. As noted above, this licensing action is eliminating monitoring well monitoring requirements for chloride, established in the previous licensing action, as the Department no longer considers it a necessary parameter to monitor for this type of facility. Groundwater well monitoring for all parameters except the metals shall be conducted during the months of May and October of each year. Groundwater well monitoring for the specified metals is only required to be performed during the fourth calendar quarter of the fourth year of the license.

The Department reviewed DMR data for the WUD for spray seasons 2003 through 2007 and found the following monitoring well information.

MONITORING WELL SAMPLE DATA (2003 – 2007)

Depth to groundwater	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	5.0 feet	6.5 feet	5.9 feet	7
MW#2 (DG)	2.5 feet	5.2 feet	4.1 feet	9
MW#7 (DG)	1.4 feet	4.1 feet	3.2 feet	9
MW#8 (DG)	0.0 feet	2.5 feet	1.5 feet	9
MW#9 (BG)	8.8 feet	12.8 feet	11.7 feet	9
MW#11 (BG)	0.9 feet	3.7 feet	2.8 feet	9

DG = downgradient well; BG = background well

Nitrate N	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	0.3 mg/L	2.1 mg/L	1.1 mg/L	7
MW#2 (DG)	0 mg/L	0.3 mg/L	0.2 mg/L	8
MW#7 (DG)	1.0 mg/L	2.3 mg/L	1.4 mg/L	9
MW#8 (DG)	0.8 mg/L	3.3 mg/L	1.7 mg/L	9
MW#9 (BG)	0.3 mg/L	1.7 mg/L	1.0 mg/L	9
MW#11 (BG)	0 mg/L	0.5 mg/L	0.17 mg/L	9

DG = downgradient well; BG = background well

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

MONITORING WELL SAMPLE DATA (2003 – 2007)

Specific Conductance	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	208 umhos/cm	320 umhos/cm	281 umhos/cm	7
MW#2 (DG)	81 umhos/cm	151 umhos/cm	102 umhos/cm	9
MW#7 (DG)	142 umhos/cm	293 umhos/cm	219 umhos/cm	9
MW#8 (DG)	122 umhos/cm	385 umhos/cm	261 umhos/cm	9
MW#9 (BG)	68 umhos/cm	327 umhos/cm	171 umhos/cm	9
MW#11 (BG)	208 umhos/cm	581 umhos/cm	374 umhos/cm	9

DG = downgradient well; BG = background well

Temperature	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	6.9 ºC	10.6 ºC	9.3 ºC	7
MW#2 (DG)	6.9 ºC	12.6 ºC	10.1 ºC	8
MW#7 (DG)	7.7 ºC	12.5 ºC	11.0 ºC	9
MW#8 (DG)	8.1 ºC	11.9 ºC	10.2 ºC	9
MW#9 (BG)	8.2 ºC	13.3 ºC	10.6 ºC	7
MW#11 (BG)	8.0 ºC	14.8 ºC	11.5 ºC	9

DG = downgradient well; BG = background well

pH	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	5.75 S.U.	7.27 S.U.	---	6
MW#2 (DG)	6.08 S.U.	7.24 S.U.	---	9
MW#7 (DG)	5.37 S.U.	7.13 S.U.	---	9
MW#8 (DG)	5.48 S.U.	7.15 S.U.	---	9
MW#9 (BG)	4.38 S.U.	7.20 S.U.	---	9
MW#11 (BG)	6.55 S.U.	7.43 S.U.	---	9

DG = downgradient well; BG = background well

Total Suspended Solids	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	2 mg/L	21 mg/L	8 mg/L	7
MW#2 (DG)	4 mg/L	29 mg/L	12 mg/L	9
MW#7 (DG)	6 mg/L	29 mg/L	14 mg/L	9
MW#8 (DG)	142 mg/L	412 mg/L	258 mg/L	9
MW#9 (BG)	2 mg/L	8 mg/L	4 mg/L	9
MW#11 (BG)	1 mg/L	14 mg/L	5 mg/L	9

DG = downgradient well; BG = background well

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

MONITORING WELL SAMPLE DATA (2003 – 2007)

Chloride	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
MW#1 (DG)	19.5 mg/L	76.8 mg/L	50.9 mg/L	7
MW#2 (DG)	3.5 mg/L	8.1 mg/L	5.1 mg/L	9
MW#7 (DG)	14.8 mg/L	77.4 mg/L	37.4 mg/L	9
MW#8 (DG)	10.5 mg/L	76.9 mg/L	43.4 mg/L	9
MW#9 (BG)	8.4 mg/L	58.8 mg/L	28.7 mg/L	9
MW#11 (BG)	4.0 mg/L	10.7 mg/L	6.6 mg/L	9

DG = downgradient well; BG = background well

The monitoring data presented above raises concerns with the integrity of #MW8 and its ability to provide data representative of groundwater conditions. The Department views this well as important in monitoring groundwater conditions at the WUD site, as it is the only monitoring well positioned downgradient of SF #2. Therefore, this licensing action establishes a schedule of compliance (Permit Special Condition L) that requires the WUD to investigate what is needed to repair or replace monitoring well #MW8 by April 1, 2008 and to ensure the functionality of #MW8 or its replacement by July 1, 2008.

e. Lagoon Under-Drain Monitoring Requirements: The previous licensing action established lagoon under-drain monitoring requirements for: 1) flow rate; 2) specific conductance; and 3) temperature, which are being carried forward in this licensing action based on Department BPJ. At the licensee's request, the reporting requirement for temperature is being changed from degrees Fahrenheit (˚F) to degrees Celsius (˚C). Outfall #UD1A is associated with treatment lagoon #1, Outfall #UD2A with treatment lagoon #2, and Outfall #UD3A with the storage lagoon.

The Department reviewed DMR data for the WUD for spray seasons 2003 through 2007 and found the following under-drain monitoring information based on only one reported discharge event.

LAGOON UNDERDRAIN SAMPLE DATA (2003 – 2007)

Flow Rate	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
UD#1 (L1)	no data / discharge	no data / discharge	no data / discharge	0
UD#2 (L2)	0.15 gal/minute	0.15 gal/minute	0.15 gal/minute	1
UD#3 (SL)	2 gal/minute	2 gal/minute	2 gal/minute	1

L1 = Lagoon #1; L2 = Lagoon #2; SL = Storage Lagoon

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

LAGOON UNDERDRAIN SAMPLE DATA (2003 – 2007)

Specific Conductance	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
UD#1 (L1)	no data / discharge	no data / discharge	no data / discharge	0
UD#2 (L2)	938 umhos/cm	938 umhos/cm	938 umhos/cm	1
UD#3 (SL)	326 umhos/cm	326 umhos/cm	326 umhos/cm	1

L1 = Lagoon #1; L2 = Lagoon #2; SL = Storage Lagoon

Temperature	Minimum	Maximum	Arithmetic Mean	# Samples (DMRs)
UD#1 (L1)	no data / discharge	no data / discharge	no data / discharge	0
UD#2 (L2)	62 ºF	62 ºF	62 ºF	1
UD#3 (SL)	58ºF	58ºF	58ºF	1

L1 = Lagoon #1; L2 = Lagoon #2; SL = Storage Lagoon

6. 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.

7. PUBLIC COMMENTS

Public notice of this application was made in the Lincoln County News newspaper on or about August 23, 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 *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

8. DEPARTMENT CONTACTS:

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

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Bureau of Land and Water Quality
Department of Environmental Protection
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Augusta, Maine 04333-0017

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Fax (207) 287-3435
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9. RESPONSE TO COMMENTS:

During the period of February 7, 2008 through March 10, 2008, the Department solicited comments on the proposed draft Maine Waste Discharge License to be issued to the Waldoboro Utility District for the proposed discharge. The Department did not receive any comments that resulted in significant revisions to the license, but made some minor internal revisions. Therefore, no response to comments has been prepared.