APPENDICES

APPENDIX A

WPCF PERMIT &
RECYCLED WATER USE PLAN

WATER POLLUTION CONTROL FACILITIES WASTE DISCHARGE PERMIT

Oregon Department of Environmental Quality
Western Region – Salem Office
750 Front Street NE, Suite 120, Salem, OR 97301-1039
Telephone: (503) 378-8240
Issued pursuant to ORS 468B.050

ISSUED TO:

City of Donald
PO Box 388
Donald, OR 97020-0388

SOURCES COVERED BY THIS PERMIT:

Type of Waste	Outfall Number	Outfall Location
Recycled Water	001	Specified in Recycled Water Use Plan

FACILITY TYPE AND LOCATION:

STEP- Stabilization Lagoons
Donald STP
10501 Donald Rd
Donald, OR 97020-0388

Treatment System Class Level: 1
Collection System Class Level: 1

RECEIVING STREAM INFORMATION:

WRD Basin: Willamette
USGS Subbasin: Middle Willamette
Receiving Stream: N/A
LLID: 1227618456580
County: Marion

Issued in response to application #971250 received October 21, 2009 and based on the land use compatibility statement in the permit record.

Steve Schnurbusch, Acting Water Quality Manager-Western Region	12/28/12 Issuance Date	1/17/2013 Effective Date

PERMITTED ACTIVITIES

Until this permit expires or is modified or revoked, the permittee is authorized to: 1) operate a wastewater collection, treatment, control and disposal system; and 2) discharge treated wastewater only from the authorized discharge point or points in Schedule A in conformance with the requirements, limits, and conditions set forth in this permit.

Unless specifically authorized by this permit, by another NPDES or WPCF permit, or by Oregon statute or administrative rule, any other direct or indirect discharge of pollutants to waters of the state is prohibited.

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SCHEDULE A
Waste Discharge Limits

1. **Treated Effluent Outfall 001**
   The permittee is authorized to distribute recycled water if it is:
   a. The Permitee must notify DEQ in writing which recycled water treatment, Class D or Class C is employed prior to irrigation. DEQ must be notified prior to any change in treatment Class. Once notified, DEQ will give written approval to the permittee for recycled water treatment class prior to recycled water use.
   b. Treated and used according to the criteria listed in Table A1 (below).
   c. Managed as described in its DEQ-approved Recycled Water Use Plan unless exempt as provided in Schedule D, condition D.3.
   d. Used in a manner and applied at a rate that does not impact groundwater quality.
   e. Applied at a rate and in accordance with site management practices that ensure continued agricultural, horticultural, or silvicultural production and does not reduce the productivity of the site.
   f. Irrigated using sound irrigation practices to prevent:
      i. Offsite surface runoff or subsurface drainage through drainage tile;
      ii. Creation of odors, fly and mosquito breeding, or other nuisance conditions; and
      iii. Overloading of land with nutrients, organics, or other pollutants.

Table A1: Recycled Water Limits

Class	Level of Treatment (after disinfection unless otherwise specified)	Beneficial Uses
C	Oxidized[1] and disinfected. Total coliform may not exceed: • A median of 23 total coliform organisms per 100 mL, based on results of the last 7 days that analyses have been completed[2]. • 240 total coliform organisms per 100 mL in any two consecutive samples.	• Class D and nondisinfected uses. • Irrigation of processed food crops; irrigation of orchards or vineyards if an irrigation method is used to apply recycled water directly to the soil. • Landscape irrigation of golf courses, cemeteries, highway medians, or industrial or business campuses. • Industrial, commercial, or construction uses limited to: industrial cooling, rock crushing, aggregate washing, mixing concrete, dust control, nonstructural fire fighting using aircraft, street sweeping, or sanitary sewer flushing.
D	Oxidized[3] and disinfected. *E. coli* may not exceed: • A 30-day log mean of 126 organisms per 100 mL. • 406 organisms per 100 mL in any single sample.	• Nondisinfected uses. • Irrigation of firewood, ornamental nursery stock, Christmas trees, sod, or pasture for animals.

2. **Groundwater Protection**
   The permittee may not conduct any activities that could cause an adverse impact on existing or potential beneficial uses of groundwater. All wastewater and process related residuals must be managed and disposed of in a manner that will prevent a violation of the Groundwater Quality Protection Rules (OAR Chapter 340, Division 40).

3. **Septage Requirements**
   Septage may not be accepted at this facility for treatment or processing without written approval from DEQ.

SCHEDULE B
Minimum Monitoring and Reporting Requirements

1. **Monitoring and Reporting Protocols**
   a. Quality Assurance and Quality Control (QA/QC)
   For instructions on proper sampling techniques, test methods and QA/QC procedures, see Schedule F, Sections B.1 and C.

   b. Re-analysis, Re-sampling and Reporting of Data if QA/QC Requirements Not Met
   If QA/QC requirements are not met for any analysis, the permittee must have the sample re-analyzed. If the sample cannot be re-analyzed, the permittee must re-sample at the earliest available opportunity. If a sample result does not meet QA/QC requirements, the result must be included in the DMR along with a notation but must not be used in any calculation required by the permit.

   c. Reporting Procedures
      i. Significant Figures
      The permittee must report the same number of significant digits as the permit limit for a given parameter. Regardless of the rounding conventions used by the permittee (i.e., rounding 5 up for the calculated results or, in the case of laboratory results, rounding 5 to the nearest even number), the permittee must use the convention consistently, and must ensure that laboratories employed by the permittee use the same convention.

2. **Influent Monitoring Requirements**
   The permittee must monitor influent from both the City's collection system and the Fargo Interchange Service District at the following locations:
   -Sampling port in the shop building (for the City)
   -Vault in front of shop building (for the Fargo Interchange Service District).

Table B1: Influent Monitoring

Item or Parameter	Time Period	Minimum Frequency	Sample Type	Report
Total Flow (MGD)	Year-round	Daily	Measurement	Daily values
Flow Meter Calibration	Year-round	Annually	Verification	Report that calibration was completed is due by January 31 of each year.

3. **Effluent Monitoring Requirements**
   The permittee must monitor effluent for Outfall 001 from the discharge side of the irrigation pump as listed below in Table B2.

4. **Recycled Water Monitoring Requirements: Outfall #001.**
   The permittee must monitor recycled water as listed below. The samples must be representative of the recycled water delivered for beneficial reuse at a location identified in the Recycled Water Use Plan.

Table B2: Recycled Water Monitoring

Item or Parameter	Minimum Frequency	Sample Type
Total Flow (MGD) or Quantity Irrigated (inches/acre)	Daily	Measurement
Flow Meter Calibration	Annually	Verification
Quantity Chlorine Used (lbs)	Daily	Measurement
Chlorine, Total Residual (mg/L)	Daily	Grab
pH	2/Week	Grab
Total Coliform (See note a)	Weekly (Class C)	Grab
E. coli (See note a)	Weekly (Class D, See note b)	Grab
Nutrients (TKN, NO_2+NO_3-N, NH_3, Total Phosphorus)	Quarterly	Grab
Note a: Only one bacteria monitoring requirement is required at this time. The permittee may use both Class D and/or C in the same year with written approvals (C and/or D) from the Department. b. The permittee must have a DEQ approved, Recycled Water Reuse plan prior to land applying Class D recycled water. See Schedule D, Item 3 for details		

5. Minimum Reporting Requirements

The permittee must report monitoring results as listed below. This permit requires monitoring results to be submitted monthly. Monthly reports must be submitted by the 15th day of the following month (including "no discharge" reports if any) as follows:

a. Monitoring results must be reported on approved forms. The reporting period is the calendar month. Reports must be submitted to the appropriate DEQ office by the 15th day of the following month.

b. State monitoring reports must identify the name, certificate classification and grade level of each principal operator designated by the permittee as responsible for supervising the wastewater collection and treatment systems during the reporting period. Monitoring reports must also identify each system classification as found on page one of this permit.

c. Monitoring reports must include a record of the quantity and method of use of all sludge removed from the treatment facility and a record of all applicable equipment breakdowns and bypassing.

Table B3: Reporting Requirements and Due Dates

Reporting Requirement	Frequency	Due Date	Report Form (unless otherwise specified in writing)	Submit To:
1. Recycled water annual report describing effectiveness of recycled water system in complying with the DEQ-approved recycled water use plan, OAR 340-055, and this permit. See Schedule D for more detail.	Annually	January 15	2 hard copies	One each to: • DEQ Regional Office • DEQ Water Reuse Program Coordinator
Inflow and infiltration report	Annually	February 1	1 hard copy	DEQ Regional Office

Notes:

a. Name, certificate classification, and grade level of each responsible principal operator as well as identification of each system classification must be included on DMRs.

b. Equipment breakdowns and bypass events must be noted on DMRs.

SCHEDULE D
Special Conditions

1. **Inflow and Infiltration**
   An annual inflow and infiltration report must be submitted to DEQ as directed in Schedule B. The report must include the following:
   a. Details of activities performed in the previous year to identify and reduce inflow and infiltration.
   b. Details of activities planned for the following year to identify and reduce inflow and infiltration.
   c. A summary of sanitary sewer overflows that occurred during the previous year.

2. **Emergency Response and Public Notification Plan**
   The permittee must develop and maintain an Emergency Response and Public Notification Plan (the Plan) per Schedule F, Section B, and Conditions 7 & 8. The permit holder must develop the plan within six months of permit issuance and update the Plan annually to ensure that telephone and email contact information for applicable public agencies are current and accurate. An updated copy of the plan must be kept on file at the wastewater treatment facility for Department review. The latest plan revision date must be listed on the Plan cover along with the reviewer's initials or signature.

3. **Recycled Water**
   a. Recycled Water Use Plan
   The permittee must maintain a Recycled Water Use Plan meeting the requirements in OAR 340-055-0025. Prior to distributing Class D recycled water for beneficial use, the permittee must submit to DEQ a Recycled Water Use plan for public comment and approval meeting the requirements in OAR 340-055-0025.. Application of Class D recycled water is only allowed after final approval by DEQ. The permittee must submit substantial modifications to an existing plan to DEQ for approval at least 60 days prior to making the proposed changes. Conditions in the plan are enforceable requirements under this permit.

   b. Exempt Activities
   The permittee is exempt from the requirement to prepare a Recycled Water Use Plan and the limits in condition A.1 when recycled water is used at the wastewater treatment system for landscape irrigation or for in-plant processes at a wastewater treatment system and all of the following conditions are met:
   i. The recycled water is an oxidized and disinfected wastewater.
   ii. The recycled water is used at the wastewater treatment system site where it is generated or at an auxiliary wastewater or sludge treatment facility that is subject to the same NPDES or WPCF permit as the wastewater treatment system. Contiguous property to the parcel of land upon which the treatment system is located is considered the wastewater treatment system site if under the same ownership.
   iii. Spray or drift or both from the use does not occur off the site.
   iv. Public access to the site is restricted.

4. **Lagoon Solids**
   At least six months prior to the removal of accumulated solids from the lagoon, the permittee must submit to DEQ a biosolids management plan and land application plan developed in accordance with OAR 340-050. DEQ will provide an opportunity for comment on the biosolids management plan and land application plan as directed by OAR 340-050-0015(8).The permittee must follow the conditions in the approved plan.

5. **Operator Certification**
   a. Definitions
      i. "Supervise" means to have full and active responsibility for the daily on site technical operation of a wastewater treatment system or wastewater collection system.
      ii. "Supervisor" or "designated operator", means the operator delegated authority by the permittee for establishing and executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system in accordance with the policies of the owner of the system and any permit requirements.
      iii. "Shift Supervisor" means the operator delegated authority by the permittee for executing the specific practice and procedures for operating the wastewater treatment system or wastewater collection system when the system is operated on more than one daily shift.
      iv. "System" includes both the collection system and the treatment systems.

   b. The permittee must comply with OAR Chapter 340, Division 49, "Regulations Pertaining to Certification of Wastewater System Operator Personnel" and designate a supervisor whose certification corresponds with the classification of the collection and/or treatment system as specified on p. 1 of this permit.

   c. The permittee must have its system supervised full-time by one or more operators who hold a valid certificate for the type of wastewater treatment or wastewater collection system, and at a grade equal to or greater than the wastewater system's classification as specified on p. 1 one of this permit.

   d. The permittee's wastewater system may not be without the designated supervisor for more than 30 days. During this period, there must be another person available to supervise who is certified at no more than one grade lower than the classification of the wastewater system. The permittee must delegate authority to this operator to supervise the operation of the system.

   e. If the wastewater system has more than one daily shift, the permittee must have another properly certified operator available to supervise operation of the system. Each shift supervisor, if any, must be certified at no more than one grade lower than the system classification.

   f. The permittee is not required to have a supervisor on site at all times; however, the supervisor must be available to the permittee and operator at all times.

   g. The permittee must notify DEQ in writing of the name of the system supervisor. The permittee may replace or re-designate the system supervisor with another properly certified operator at any time and must notify DEQ in writing within 30 days of replacement or re-designation of operator in charge. As of this writing, the notice of replacement or re-designation must be sent to Water Quality Division, Operator Certification Program, 2020 SW 4th Avenue, Suite 400, Portland, OR 97201.

   h. Upon written request, DEQ may grant the permittee reasonable time, not to exceed 120 days, to obtain the services of a qualified person to supervise the wastewater system. The written request must include a justification for the time needed, schedule for recruiting and hiring, date the system supervisor availability ceased, and name of the alternate system supervisor as required by above.

6. **Maintenance of septic tanks.** The permittee shall implement preventative maintenance practices or corrections in accordance with the following time schedule:
   Pump residential septic tanks either when sludge and scum volume exceeds 25 percent of the liquid capacity of the tanks or every five (5) years, whichever is less; and commercial septic tanks either when sludge and scum volume exceeds 25 percent of the liquid capacity of the tanks or every 4 years, whichever is less.

SCHEDULE F

WPCF GENERAL CONDITIONS – DOMESTIC FACILITIES

SECTION A. STANDARD CONDITIONS

1. Duty to Comply with Permit

The permittee must comply with all conditions of this permit. Failure to comply with any permit condition is a violation of Oregon Revised Statutes (ORS) 468B.025 and grounds for an enforcement action. Failure to comply is also grounds for the Department to modify, revoke, or deny renewal of a permit.

2. Property Rights and Other Legal Requirements

Issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, or authorize any injury to persons or property or invasion of any other rights, or any infringement of federal, tribal, state, or local laws or regulations.

3. Liability

The Department of Environmental Quality or its officers, agents, or employees may not sustain any liability on account of the issuance of this permit or on account of the construction or maintenance of facilities or systems because of this permit.

4. Permit Actions

After notice by the Department, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including but not limited to the following:

a. Violation of any term or condition of this permit, any applicable rule or statute, or any order of the Commission;

b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts.

5. Transfer of Permit

This permit may not be transferred to a third party without prior written approval from the Department. The Department may approve transfers where the transferee acquires a property interest in the permitted activity and agrees in writing to fully comply with all the terms and conditions of this permit and the rules of the Commission. A transfer application and filing fee must be submitted to the Department.

6. Permit Fees

The permittee must pay the fees required by Oregon Administrative Rules.

SECTION B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

At all times the permittee must maintain in good working order and properly operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to comply with the terms and conditions of this permit.

2. Standard Operation and Maintenance

All waste collection, control, treatment, and disposal facilities or systems must be operated in a manner consistent with the following:

a. At all times, all facilities or systems must be operated as efficiently as possible in a manner that will prevent discharges, health hazards, and nuisance conditions.

b. All screenings, grit, and sludge must be disposed of in a manner approved by the Department to prevent any pollutant from the materials from reaching waters of the state, creating a public health hazard, or causing a nuisance condition.

c. Bypassing untreated waste is generally prohibited. Bypassing may not occur without prior written permission from the Department except where unavoidable to prevent loss of life, personal injury, or severe property damage.

3. Noncompliance and Notification Procedures

If the permittee is unable to comply with conditions of this permit because of surfacing sewage; a breakdown of equipment, facilities or systems; an accident caused by human error or negligence; or any other cause such as an act of nature, the permittee must:

a. Immediately take action to stop, contain, and clean up the unauthorized discharges and correct the problem.

b. Immediately notify the Department's Regional office so that an investigation can be made to evaluate the impact and the corrective actions taken, and to determine any additional action that must be taken.

c. Within 5 days of the time the permittee becomes aware of the circumstances, the permittee must submit to the Department a detailed written report describing the breakdown, the actual quantity and quality of waste discharged, corrective action taken, steps taken to prevent a recurrence, and any other pertinent information.

Compliance with these requirements does not relieve the permittee from responsibility to maintain continuous compliance with the conditions of this permit or liability for failure to comply.

4. Wastewater System Personnel

The permittee must provide an adequate operating staff that is duly qualified to carry out the operation, maintenance, and monitoring requirements to assure continuous compliance with the conditions of this permit.

5. Public Notification of Effluent Violation or Overflow

If effluent limitations specified in this permit are exceeded or an overflow occurs that threatens public health, the permittee must take such steps as are necessary to alert the public, health agencies and other affected entities (e.g., public water systems) about the extent and nature of the discharge in accordance with the notification procedures developed under General Condition B.6. Such steps may include, but are not limited to, posting of the river at access points and other places, news releases, and paid announcements on radio and television.

6. Emergency Response and Public Notification Plan

The permittee must develop and implement an emergency response and public notification plan that identifies measures to protect public health from overflows, bypasses or upsets that may endanger public health. At a minimum the plan must include mechanisms to:

a. Ensure that the permittee is aware (to the greatest extent possible) of such events;
b. Ensure notification of appropriate personnel and ensure that they are immediately dispatched for investigation and response;
c. Ensure immediate notification to the public, health agencies, and other affected public entities (including public water systems). The overflow response plan must identify the public health and other officials who will receive immediate notification;
d. Ensure that appropriate personnel are aware of and follow the plan and are appropriately trained;
e. Provide emergency operations; and
f. Ensure that DEQ is notified of the public notification steps taken.

SECTION C. MONITORING AND RECORDS

1. Inspection and Entry

The permittee must at all reasonable times allow authorized representatives of the Department to:

a. Enter upon the permittee's premises where a waste source or disposal system is located or where any records are required to be kept under the terms and conditions of this permit;

b. Have access to and copy any records required by this permit;

c. Inspect any treatment or disposal system, practices, operations, monitoring equipment, or monitoring method regulated or required by this permit; or

d. Sample or monitor any substances or permit parameters at any location at reasonable times for the purpose of assuring permit compliance or as otherwise authorized by state law...

2. Averaging of Measurements

Calculations of averages of measurements required for all parameters except bacteria must use an arithmetic mean; bacteria must be averaged as specified in the permit.

3. Monitoring Procedures

Monitoring must be conducted according to test procedures specified in the most recent edition of **Standard Methods for the Examination of Water and Wastewater**, unless other test procedures have been approved in writing by the Department and specified in this permit.

4. Retention of Records

The permittee must retain records of all monitoring and maintenance information, including all calibrations, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. The Department may extend this period at any time.

SECTION D. REPORTING REQUIREMENTS

1. Plan Submittal

Pursuant to Oregon Revised Statute 468B.055, unless specifically exempted by rule, construction, installation, or modification of disposal systems, treatment works, or sewerage systems may not commence until plans and specifications are submitted to and approved in writing by the Department. All construction, installation, or modification shall be in strict conformance with the Department's written approval of the plans.

2. Change in Discharge

Whenever a facility expansion, production increase, or process modification is expected to result in a change in the character of pollutants to be discharged or in a new or increased discharge that will exceed the conditions of this permit, a new application must be submitted together with the necessary reports, plans, and specifications for the proposed changes. A change may not be made until plans have been approved and a new permit or permit modification has been issued.

3. Signatory Requirements

All applications, reports, or information submitted to the Department must be signed and certified by the official applicant of record (owner) or authorized designee.

4. Twenty-Four Hour Reporting

The permittee must report any noncompliance that may endanger health or the environment. Any information must be provided orally (by telephone) to DEQ or to the Oregon Emergency Response System (1-800-452-0311) as specified below within 24 hours from the time the permittee becomes aware of the circumstances.

a. Overflows.

(1) Oral Reporting within 24 hours.

i. For overflows other than basement backups, the following information must be reported to the Oregon Emergency Response System (OERS) at 1-800-452-0311. For basement backups, this information should be reported directly to DEQ.

a) The location of the overflow;
b) The receiving water (if there is one);
c) An estimate of the volume of the overflow;
d) A description of the sewer system component from which the release occurred (e.g., manhole, constructed overflow pipe, crack in pipe); and
e) The estimated date and time when the overflow began and stopped or will be stopped.

ii. The following information must be reported to the Department's Regional office within 24 hours, or during normal business hours, whichever is first:

a) The OERS incident number (if applicable) along with a brief description of the event.

(2) Written reporting within 5 days.

i. The following information must be provided in writing to the Department's Regional office within 5 days of the time the permittee becomes aware of the overflow:

a) The OERS incident number (if applicable);
b) The cause or suspected cause of the overflow;
c) Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
d) Steps taken or planned to mitigate the impact(s) of the overflow and a schedule of major milestones for those steps; and
e) (for storm-related overflows) The rainfall intensity (inches/hour) and duration of the storm associated with the overflow.

The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

b. Other instances of noncompliance.

(1) The following instances of noncompliance must be reported:

i. Any unanticipated bypass that exceeds any effluent limitation in this permit;
ii. Any upset that exceeds any effluent limitation in this permit;
iii. Violation of maximum daily discharge limitation for any of the pollutants listed by the Department in this permit; and
iv. Any noncompliance that may endanger human health or the environment.

(2) During normal business hours, the Department's Regional office must be called. Outside of normal business hours, the Department must be contacted at 1-800-452-0311 (Oregon Emergency Response System).

(3) A written submission must be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission must contain:

i. A description of the noncompliance and its cause;
ii. The period of noncompliance, including exact dates and times;
iii. The estimated time noncompliance is expected to continue if it has not been corrected;
iv. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and
v. Public notification steps taken, pursuant to General Condition B.6.

(4) The Department may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

SECTION E. DEFINITIONS

1. *BOD_5* means five-day biochemical oxygen demand.
2. *TSS* means total suspended solids.
3. *FC* means fecal coliform bacteria.
4. *NH_3-N* means Ammonia Nitrogen.
5. *NO_3-N* means Nitrate Nitrogen.
6. *NO_2-N* means Nitrite Nitrogen.
7. *TKN* means Total Kjeldahl Nitrogen.
8. *Cl* means Chloride.
9. *TN* means Total Nitrogen.
10. "*Bacteria*" includes but is not limited to fecal coliform bacteria, total coliform bacteria, and E. coli bacteria.
11. *Total residual chlorine* means combined chlorine forms plus free residual chlorine.
12. *mg/l* means milligrams per liter.
13. *ug/l* means micrograms per liter.
14. *kg* means kilograms.
15. *GPD* means gallons per day.
16. *MGD* means million gallons per day.
17. *Grab sample* means an individual discrete sample collected over a period of time not to exceed 15 minutes.
18. *Composite sample* means a combination of samples collected, generally at equal intervals over a 24-hour period, and based on either time or flow.
19. *Week* means a calendar week of Sunday through Saturday.
20. *Month* means a calendar month.
21. *Quarter* means January through March, April through June, July through September, or October through December.

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[1] The rules don't specify what "oxidized" means. The term is not intended to prescribe a form of treatment, instead it is intended to ensure recycled water is treated to the point that it is not putrid.

[2] In the event that a permit holder collects multiple samples on a single day, the accepted practice is that the permittee should report the median of all the samples collected on that day. This median value is then one of the required 7 values. See OAR 340-055-0012(5)(c) and (d) for Class C recycled water.

[3] The rules don't specify what "oxidized" means. The term is not intended to prescribe a form of treatment. Rather the term is intended to ensure recycled water is treated to the point that it is not putrid.

RECYCLE PLAN

City of Donald, Oregon

RECYCLED WATER USE PLAN

WINTERTIME HOLDING - SUMMERTIME IRRIGATION

OPERATION PLAN

July 2010

Boatwright Engineering Inc.
2613 12th ST SE, SALEM, OREGON 97302
civil engineers • land surveyors

City of Donald, Oregon

RECYCLED WATER USE PLAN

WINTERTIME HOLDING - SUMMERTIME IRRIGATION

OPERATION PLAN
July 2010

REGISTERED PROFESSIONAL ENGINEER
58876PE
OREGON
JANUARY 12, 1999
JANELLE D. POE

Expires 12/31/10

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- *FOR 2010 ONLY WITH IRRIGATION BEGINNING IN JULY*
- *WATER BALANCE WITH CALCULATED FLOW FOR DONALD, AND ACTUAL INFLOW FOR FARGO*
- *WATER BALANCE WITH ACTUAL INFLOW FOR DONALD AND FARGO LAGOONS*

APPENDIX B: LAGOON MAPS

- *ORIGINAL 3 LAGOONS*
- *SITE PLAN OF 4TH LAGOON*

APPENDIX C: COPY OF ORIGINAL 1982 REPORT OF SEWAGE TREATMENT FACILITIES BY CES, LTD.

- *ORIGINAL 1982 WATER BALANCE CALCULATIONS*
- *ORIGINAL IRRIGATION EFFLULENT SPECIFICATIONS*

APPENDIX D: EXCERPTS FROM OREGON STATE UNIVERSITY STUDY "OREGON CROP WATER USE AND IRRIGATION REQUIREMENTS"

APPENDIX E: REFERENCED CORRESPONDENCE

- *January 6, 2009-Letter from Mary Pfauth DEQ*
- *January 22, 2009- Letter from Corbey Boatwright, Boatwright Engineering*
- *March 25, 2009 – Letter from Mary Pfauth, DEQ*

APPENDIX F: EFFLUENT INFLOW DATA FOR CITY OF DONALD AND FOR FARGO

City of Donald, Oregon

RECYCLED WATER USE PLAN

WINTERTIME HOLDING - SUMMERTIME IRRIGATION

OPERATION PLAN

July 2010

PURPOSE:

This management plan is to define and explain the plan for the disposition of the effluent from the City of Donald's Waste Water Treatment Plant. Irrigation in a manner whereby the vegetation, or crop, fully utilizes the nutrients and prevents effluent runoff from entering the waters of the State of Oregon, is the proposed plan.

In 2009, the City of Donald was notified that an updated Recycled Water Use Plan (RWUP) and Lagoon Operations Plan for File No. 24600, and Water Pollution Control Facility Permit No. 101978 is required for the Sanitary Sewer Effluent Lagoons. The 1999 plan permit expired Sept. 30, 2009. An update to the approved 1999 Operations Plan was submitted that same year (2009), but the Oregon Department of Environmental Quality (DEQ) requested that an entire integrated document be submitted. Donald has not been permitted to irrigate without the renewal of this permit during this spring of 2010. It has been a wet spring, eliminating the need for irrigation, and the lagoons have been storing all effluent received.

WATER BALANCE:

Because Donald has not been permitted to irrigate this spring, the lagoons have been storing all effluent received and are reaching capacity. A separate supplemental water balance spreadsheet (See Appendix A, Table A) has been created which assumes irrigation will begin this July and determines the amount of effluent that may be irrigated this year.

A basic annual water spreadsheet balance, similar to the one in the original 1982 Operation Plan, is included Appendix A to determine the anticipated volume of effluent stored and the effluent used based on predicted crop consumption for grass seed per the 1992 Oregon State University study "Oregon Crop Water Use and Irrigation Requirement), (See Appendix D).

Based on the OSU study, the irrigation rate will require less water volume than the capacity of the lagoons. This means that a crop requiring higher irrigation rates could be planted on this land, and/or there is enough effluent to irrigate additional acreage can be irrigated. A water balance calculation has been included which assumes higher monthly irrigation rates in order to illustrate what rate may be required to keep the ponds from exceeding capacity.

Additionally, a large volume of water is evaporated from the lagoons over the course of the summer. Pan evaporation rates from the Oregon Climate Service were obtained for the Portland area and are used in the water balance calculations.

WASTEWATER TREATMENT PLANT BACKGROUND:

The water balance prepared under the original design, approved by DEQ in 1982 (See Appendix C), identifies the annual wastewater for disposal at design capacity to be 57.8 acre feet. The initial design concept was to dispose of this volume of wastewater onsite on lands owned by the City of Donald. The land would be planted to produce silage, hay, etc. The maximum application rate would be 5" of wastewater per acre, every three weeks.

The original sewage treatment plant consisted of three lagoons with bentonite liners (See Appendix B). The capacity of the original three lagoons is 47.0 acre feet of useable storage. A maximum surface area of 10 acres, at a depth of 8.5 feet of water, is recorded on the as-built plans.

A fourth lagoon (See Appendix B) was completed in the summer of 2008 which holds sewer from Fargo Sewer District. This lagoon was constructed with a 60 mil HDPE liner and is capable of 37.1 acre feet of useable storage with a maximum surface area of 4.7 acres and a depth of 11.3 feet. The combined holding capacity, when all four lagoons are full, is 84.1 acre feet with a maximum total surface area of 14.7 acres.

The placement of Lagoon 4 removed 7.8 acres of land that would have been irrigated with effluent. There were farm tiles in this area that were also removed. The amount of land the City of Donald owns that could be used for disposal around the lagoon is 56.0 acres, being: 8.3 acres north of the creek, 6.4 acres west of Lagoon 3 and 41.3 acres north and east of Lagoon 4. However, the 8.3 acres north of the creek has not been farmed and there is no transmission line across the creek to supply the effluent to this field. An additional 2.0 acres has been leased and does not receive irrigation. This results in a total of 45.7 acres that is capable of accepting effluent disposal. (or irrigation)

Farm tile was originally installed on 37.9 acres. However, with construction of the fourth lagoon, farm tile was removed from 7.8 acres, resulting in 30.1 acres of remaining tiled area on the treatment plant site. The southeastern quadrant of the site is tiled with 4" perforated pipes that are spaced 60' apart. They run east and west in a pattern that best fits the site natural topography. The perforated pipes drain to collector drains that run north, to the natural drainage way that contributes to Ryan Creek.

IRRIGATION PLAN:

At the request of DEQ, the City installs plugs on the north ends of the north-south collector drains during the irrigation season to insure no effluent irrigation waters would discharge to waters of the State of Oregon. Each year these plugs are installed in the manholes at the top of the bank in April and are removed at the termination of irrigation on October 31st.

Since the DEQ permit was issued in 1982, the crops grown on site have varied from permanent grass forage production to the growth of trees and ornamental shrubs by a nursery company that leases the land from the City of Donald. The current nursery company, Advanced Ornamental (owned by McKay), intends to plant fescue on the available 45.7 acres for the next five years. During the irrigation season, McKay is anticipating applying 1" of water per week so as to not produce surface ponding or runoff.

The City of Donald and McKay continue to discuss the parameters of the lease on this site. Farmland that receives human wastewater effluent cannot be used to produce crops for human consumption. This limits the crops to forage, nursery stock, Christmas trees, etc.

The City of Donald will be responsible to release the wastewater effluent from storage, chlorinate to produce the required chlorine residual of 1 to 1.5 mg/l after 30 minutes of contact time, and provide the irrigation pump and permanent piping on the site. McKay will operate the irrigation pump and provide the irrigation piping and sprinklers to apply wastewater at 1" per week with 7 gpm heads. Donald will pay for all electrical power required to irrigate the wastewater. Oregon Administrative Rules, Chapter 340, Division 55 (as enclosed) governs the disposal of treatment plant effluent and requires a contract between the City and McKay spelling out the responsibility of each party.

The irrigation pump on site at the Donald Treatment Plant has a capacity of 200 gpm at 140 feet of TDH (60 psi). McKay has been given access to the treatment plant site and irrigation pump house. A schedule should be provided by McKay detailing when they propose to irrigate, weather permitting, so that the City of Donald can manage the release and chlorination of wastewater at 200 gpm.

Using the 1992 OSU study "Oregon Crop Water Use and Irrigation Requirements", grass grown in the Willamette Valley requires a total of 27.43 inches water annually (See Appendix D with irrigation table, column: '19 out of 20 years'), or 104.46 AF on the 45.7 acre site. The majority of this requirement occurs from April to October, being 27.35 inches or 104.16 AF. A number of farmers in the local area apply irrigation in the fall to give the plants a growth spurt prior to the winter. This would increase the volume of effluent applied to the fields.

When Lagoon 4 was installed by the City, in conjunction with Marion County and DEQ, a 6" pipeline was installed to the south, across Donald Road, for future irrigation on a private farm. Discharge effluent was available for 300+ acres of land owned by A&R Spada Farms, another local nursery company. Although there is an interest in using the additional water on their land, the details need to be worked out. Once a system can be designed to move the effluent to the existing irrigation system, a revised operation plan will be submitted to DEQ for approval prior to any contract being executed with Spada Farms.

Spada uses several wells that will need to be protected from the effluent. One option is to run a separate system to the field with a reduced pressure double check valve and backflow preventer system to prohibit wastewater from contaminating the existing irrigation system.

The existing chlorine chamber consists of 370' of 36" diameter concrete pipe, possessing a volume of 19,563 gallons. This represents a chlorine contact time of 97.8 minutes at 200 gpm, or 49 minutes at 400 gpm, where a minimum of 30 minutes is required.

GROUNDWATER/SUBSURFACE FIELD TILE:

The City shall monitor the discharge from both of the developed collector lines on site to determine if and when direct discharge is occurring to waters of the State. Records shall be kept by the City to

identify that no discharge of ground water occurs during that period of the year when wastewater effluent is being irrigated on to farm lands.

CONTACT PERSONNEL:

City of Donald
PO Box 388
Donald, OR 97020
Mr. Tom McWhirt - Public Works Director
Phone: (503) 678-5543

Advanced Ornamental
19172 French Prairie Road
St. Paul, OR 97137
Dean McKay
Phone: (503) 633-2833

A & R Spada Farms
7251 St Paul Hwy NE
St. Paul, OR 97137
Angelo Spada
Phone: (503) 633-2941

TESTING AND RECORD KEEPING:

Due to the time delay in the chlorine contact chamber, chlorine residual testing shall start after the irrigation system has operated at least 4 hours

The chlorination residual shall be tested and recorded at least daily for the first week, weekly for the first month, and thereafter, once every two weeks during operating time.

The City of Donald shall keep record identifying the date each spring when the farm tiles cease to discharge groundwater.

The chlorine dosage should start at 0.5 mg/l and be adjusted, as necessary, to achieve 1 to 1.5 mg/l.

APPENDIX A

WATER BALANCE CALCULATIONS

TABLE A

FOR 2010 WATER BALANCE ONLY

BEGIN WATER BALANCE IN JULY USING ACTUAL 2009/2010 DATA FOR EFFLUENT INFLOW and PRECIPITATION

City of Donald Wastewater Treatment and Storage Lagoons
Max. Surface Area - 14.7 acres (total)
No. of Cells = 4
Active Storage Capacity - 84.1 acre feet

MONTH	SEWAGE FLOW 1				PRECIPITATION 2		EVAPORATION -(average) 3		IRRIGATION (-discharge)			ACTIVE STORAGE	
	Donald		Fargo									(this month)	(Accum.)
	MG	AF	MG	AF	IN	AF	IN	AF	IN	AF		AF	*AF
NOV	1.697	5.21	0.604	1.85	6.9	8.5	1.30	1.59	0.0	0.0		n/a	n/a
DEC	1.856	5.70	0.897	2.75	5.1	6.2	1.00	1.23	0.0	0.0		n/a	n/a
JAN10	2.407	7.39	2.099	6.44	5.8	7.1	1.10	1.35	0.0	0.0		n/a	n/a
FEB	1.956	6.00	1.516	4.65	3.3	4.1	1.50	1.84	0.0	0.0		n/a	n/a
MAR10	1.838	5.64	1.525	4.68	4.8	5.9	2.20	2.70	0.0	0.0		n/a	n/a
APR10	1.632	5.01	1.698	5.21	3.4	4.2	3.10	3.80	0.0	0.0		n/a	n/a
MAY	1.756	5.39	1.299	3.99	4.6	5.7	4.70	5.76	0.0	0.0		n/a	n/a
JUN	1.557	4.78	0.819	2.51	1.3	1.6	5.80	7.11	0.0	0.0		n/a	n/a
JUL	1.56	4.79	0.668	2.05	0.3	0.4	7.50	9.19	6.5	24.8	4	-26.68743	84.10000
AUG	1.682	5.16	0.87	2.67	0.8	0.9	6.10	7.47	6.2	23.6	4	-22.32108	57.41257
SEP	1.663	5.10	0.534	1.64	1.4	1.8	3.90	4.78	6.0	22.9	4	-19.13316	35.09149
OCT	1.669	5.12	0.482	1.48	3.0	3.7	2.10	2.57	6.0	22.9	4	-15.12158	15.95833
													0.83675

*Because this year's irrigation season will not likely begin until July, the calculation will begin with the lagoons being FULL at the start of the month of July.
Typically, irrigation begins in May. However, with this wet spring season, there has been no need for early irrigation. The lagoons are nearly full as of today, 6/16/10.
Using the old data sheet of historical averages and applying them to this water balance spreadsheet results in a calculated volume within the lagoons greater than capacity.
Since we know that the lagoons are not overflowing, July will assume the lagoons are full in July.
Beginning the water balance computation in July, illustrates that there is expected to be 6 - 6.5 inches of effluent available for irrigation each month thru October.

BEGIN WATER BALANCE IN JULY USING ACTUAL 2009/10 DATA FOR EFFLUENT INFLOW

1 Actual 2009 Inflow Data
2 From NWS, Aurora Recorded Monthly Precipitation Values (2009-2010)
3 Pan Evaporation rates for Portland from "Comparative Climate" www.ocs.orst.edu/page_links/comparative_climate/oregon/oregon.html
U.S. Weather Bureau Tech Paper #37.
4 45.7 acres available for irrigation

TABLE B

WATER BALANCE

USING ACTUAL 2009/2010 DATA FOR EFFLUENT INFLOW FOR BOTH FARGO AND DONALD SEWAGE INFLOWS

City of Donald Wastewater Treatment and Storage Lagoons
Max. Surface Area - 14.7 acres (total)
No. of Cells = 4
Active Storage Capacity - 84.1 acre feet

MONTH	SEWAGE FLOW 1 (Donald)1		SEWAGE FLOW 1 (Fargo Int.) 1		PRECIPITATION 2 average		EVAPORATION 3 (-average)		IRRIGATION (-discharge)			ACTIVE STORAGE (this month)	ACTIVE STORAGE (Accum.)	
	MG	AF	MG	AF	IN	AF	IN	AF	IN	AF		AF	AF	
NOV	1.697	7.37	0.604	1.85	5.6	6.9	1.30	1.59	0.00	0.0		14.49118	14.49118	
DEC	1.856	7.37	0.897	2.75	6.9	8.5	1.00	1.23	0.00	0.0		17.35039	31.84157	
JAN	2.407	7.37	2.099	6.44	6.4	7.8	1.10	1.35	0.00	0.0		20.30433	52.14590	
FEB	1.956	7.37	1.516	4.65	5.5	6.7	1.50	1.84	0.00	0.0		16.92260	69.06850	
MAR	1.838	7.37	1.525	4.68	4.6	5.6	2.20	2.70	0.08	0.3	4	14.68556	83.75406	
APR	1.632	7.37	1.698	5.21	2.1	2.6	3.10	3.80	1.93	7.4	4	4.00608	87.76014	*
MAY	1.756	7.37	1.299	3.99	2.0	2.5	4.70	5.76	4.13	15.7	4	-7.67929	80.08086	
JUN	1.557	7.37	0.819	2.51	1.4	1.7	5.80	7.11	5.43	20.7	4	-16.18574	63.89512	
JUL	1.56	7.37	0.668	2.05	0.4	0.5	7.50	9.19	7.24	27.6	4	-26.84974	37.04538	
AUG	1.682	7.37	0.87	2.67	0.5	0.6	6.10	7.47	5.43	20.7	4	-17.49922	19.54616	
SEP	1.663	7.37	0.534	1.64	1.5	1.8	3.90	4.78	1.97	7.5	4	-1.43357	18.11258	
OCT	1.669	7.37	0.482	1.48	4.4	5.4	2.10	2.57	1.22	4.6	4	7.02059	25.13318	
Totals	21.3	88.4	13.0	39.9	41.3	50.6	40.3	49.4	27.43	104.5				

1 Actual Effluent Inflow data
2 OSU Ag. Exp. Sta. Special report no. 150, 1963 (Salem McNary Field Station)
3 Pan Evaporation rates for Portland from "Comparative Climate" www.ocs.orst.edu/page_links/comparative_climate/oregon/oregon.html
U.S. Weather Bureau Tech Paper #37.
4 45.7 acres available for irrigation, irrigation based on 1992 OSU study "Oregon Crop Water Use and Irrigation Requirement".

* EFFLUENT STORAGE VOLUME GREATER THAN LAGOON CAPACITY: Indicates that more than 1.93 inches is required to be sprayed and consumed on the fields.

TABLE C

WATER BALANCE

USES ACTUAL 2009/2010 DATA FOR EFFLUENT INFLOW for FARGO INTERCHANGE ONLY, CALCULATED FOR DONALD

City of Donald Wastewater Treatment and Storage Lagoons
Max. Surface Area - 14.7 acres (total)
No. of Cells = 4
Active Storage Capacity - 84.1 acre feet

MONTH	SEWAGE FLOW (Donald)1		SEWAGE FLOW (Fargo Int.)5		PRECIPITATION average		EVAPORATION 3 (-average)		IRRIGATION 4 (-discharge)			ACTIVE STORAGE (this month)	ACTIVE STORAGE (Accum.)	
	MG	AF	MG	AF	IN	AF	IN	AF	IN	AF		AF	AF	
NOV	2.4	7.37	0.82	2.50	5.6	6.9	1.30	1.59	0.00			15.13996	15.13996	
DEC	2.4	7.37	1.21	3.72	6.9	8.5	1.00	1.23	0.00			18.31391	33.45387	
JAN	2.4	7.37	2.71	8.33	6.4	7.8	1.10	1.35	0.00			22.19023	55.64410	
FEB	2.4	7.37	1.23	3.78	5.5	6.7	1.50	1.84	0.00			16.04855	71.69265	
MAR	2.4	7.37	2.44	7.48	4.6	5.6	2.20	2.70	0.08	0.3	4	17.48786	89.18051	*
APR	2.4	7.37	1.69	5.20	2.1	2.6	3.10	3.80	1.93	7.4	4	3.99457	93.17508	*
MAY	2.4	7.37	1.75	5.38	2.0	2.5	4.70	5.76	4.13	15.7	4	-6.28396	86.89112	*
JUN	2.4	7.37	1.11	3.39	1.4	1.7	5.80	7.11	5.43	20.7	4	-15.30601	71.58511	
JUL	2.4	7.37	0.90	2.77	0.4	0.5	7.50	9.19	7.24	27.6	4	-26.13221	45.45290	
AUG	2.4	7.37	1.17	3.60	0.5	0.6	6.10	7.47	5.43	20.7	4	-16.56471	28.88819	
SEP	2.4	7.37	0.72	2.21	1.5	1.8	3.90	4.78	1.97	7.5	4	-0.85997	28.02822	
OCT	2.4	7.37	0.65	2.00	4.4	5.4	2.10	2.57	1.22	4.6	4	7.53833	35.56655	

16.4/12 = 1.37

1 1030 population at 70 gpcd plus 10% industrial flow
2 OSU Ag. Exp. Sta. Special report no. 150, 1963 (Salem McNary Field Station)
3 Pan Evaporation rates for Portland from "Comparative Climate" www.ocs.orst.edu/page_links/comparative_climate/oregon/oregon.html
U.S. Weather Bureau Tech Paper #37.
4 45.7 acres field available for irrigation, Irrigation based on 1992 OSU study "Oregon Crop Water Use and Irrigation Requirement".
5 Sewage Flow into Lagoon 4 from Fargo Interchange, based on actual 2009 input multiplied by a factor of 1.35 (the avg increase of the 3 months this year)

*EFFLUENT STORAGE VOLUME GREATER THAN LAGOON CAPACITY: HIGHER IRRIGATION RATES ARE REQUIRED THESE THREE MONTHS TO PREVENT EXCEEDING CAPACITY

TABLE D

WATER BALANCE

USES ACTUAL 2009/2010 DATA FOR EFFLUENT INFLOW for FARGO INTERCHANGE ONLY, CALCULATED FOR DONALD

*IRRIGATION TO PREVENT EXCEEDING CAPACITY

City of Donald Wastewater Treatment and Storage Lagoons
Max. Surface Area - 14.7 acres (total)
No. of Cells = 4
Active Storage Capacity - 84.1 acre feet

MONTH	SEWAGE FLOW (Donald)1		SEWAGE FLOW (Fargo Int.)5		PRECIPITATION average		EVAPORATION 3 (-average)		IRRIGATION 4 (-discharge)			ACTIVE STORAGE (this month)	ACTIVE STORAGE (Accum.)	
	MG	AF	MG	AF	IN	AF	IN	AF	IN	AF		AF	AF	
NOV	2.4	7.37	0.82	2.50	5.6	6.9	1.30	1.59	0.00			15.13996	15.13996	
DEC	2.4	7.37	1.21	3.72	6.9	8.5	1.00	1.23	0.00			18.31391	33.45387	
JAN	2.4	7.37	2.71	8.33	6.4	7.8	1.10	1.35	0.00			22.19023	55.64410	
FEB	2.4	7.37	1.23	3.78	5.5	6.7	1.50	1.84	0.00			16.04855	71.69265	
MAR	2.4	7.37	2.44	7.48	4.6	5.6	2.20	2.70	2.00	7.6	4	10.17586	81.86851	*
APR	2.4	7.37	1.69	5.20	2.1	2.6	3.10	3.80	3.00	11.4	4	-0.08035	81.78817	*
MAY	2.4	7.37	1.75	5.38	2.0	2.5	4.70	5.76	4.13	15.7	4	-6.28396	75.50420	*
JUN	2.4	7.37	1.11	3.39	1.4	1.7	5.80	7.11	5.43	20.7	4	-15.30601	60.19819	
JUL	2.4	7.37	0.90	2.77	0.4	0.5	7.50	9.19	7.24	27.6	4	-26.13221	34.06598	
AUG	2.4	7.37	1.17	3.60	0.5	0.6	6.10	7.47	5.43	20.7	4	-16.56471	17.50127	
SEP	2.4	7.37	0.72	2.21	1.5	1.8	3.90	4.78	1.97	7.5	4	-0.85997	16.64130	
OCT	2.4	7.37	0.65	2.00	4.4	5.4	2.10	2.57	1.22	4.6	4	7.53833	24.17963	

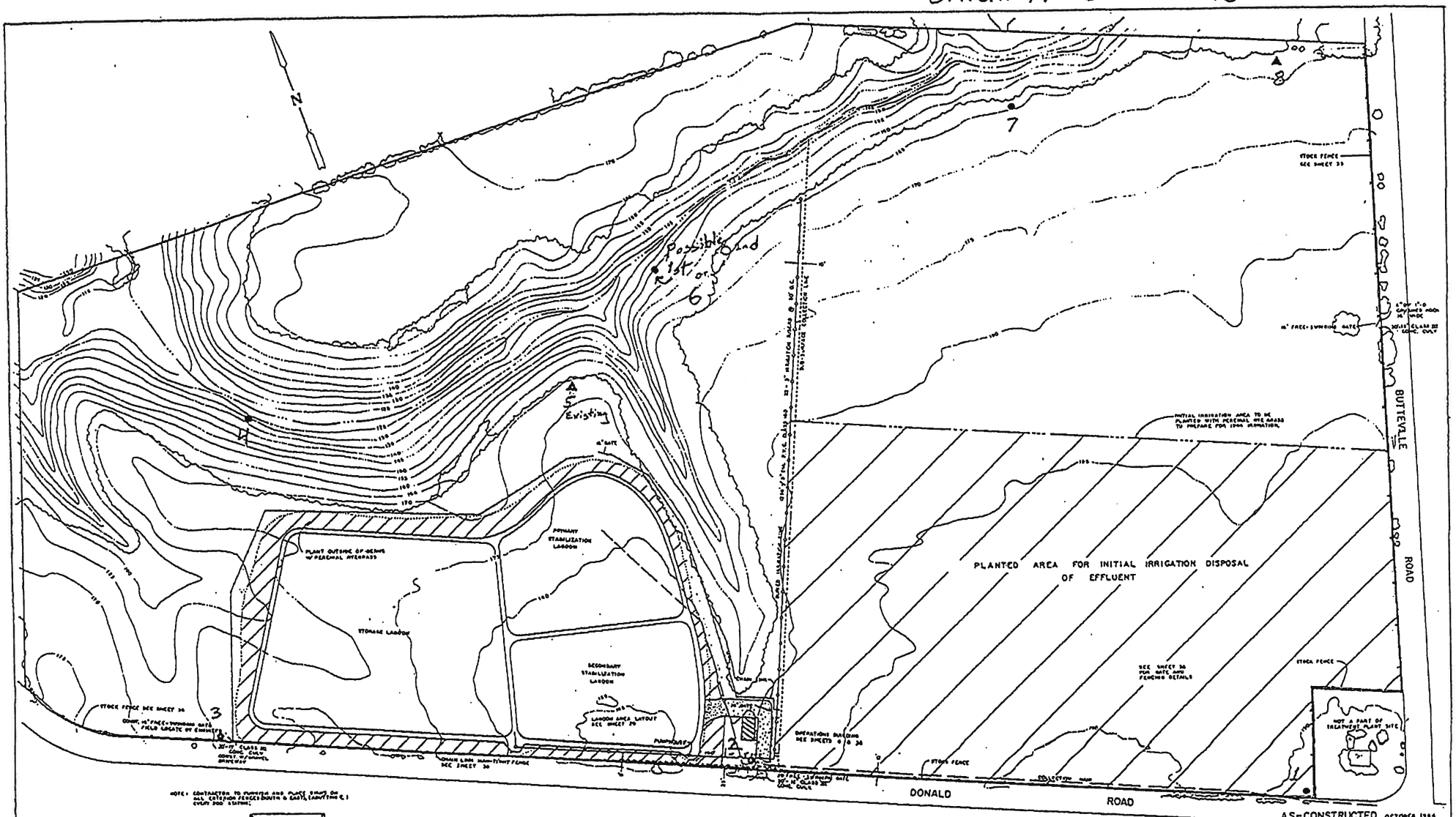
1 1030 population at 70 gpcd plus 10% industrial flow
2 OSU Ag. Exp. Sta. Special report no. 150, 1963 (Salem McNary Field Station)
3 Pan Evaporation rates for Portland from "Comparative Climate" www.ocs.orst.edu/page_links/comparative_climate/oregon/oregon.html
U.S. Weather Bureau Tech Paper #37.
4 45.7 acres available for irrigation, Irrigation based on 1992 OSU study "Oregon Crop Water Use and Irrigation Requirement".
5 Sewage Flow into Lagoon 4 from Fargo Interchange, based on actual 2009 input multiplied by a factor of 1.35 (the avg increase of the 3 months this year)

*These 3 months showed the lagoons over capacity when using the irrigation rates from the OSU Study (4). By increasing to 2 inches in March and 3 inches in April, the effluent volume is kept within lagoon capacity.

APPENDIX B

LAGOON MAPS

- PRIOR TO 4th LAGOON
- ORIGINAL 3 LAGOONS



Contractor to verify all dimensions and manufacturers requirements and field locate all utilities prior to construction.

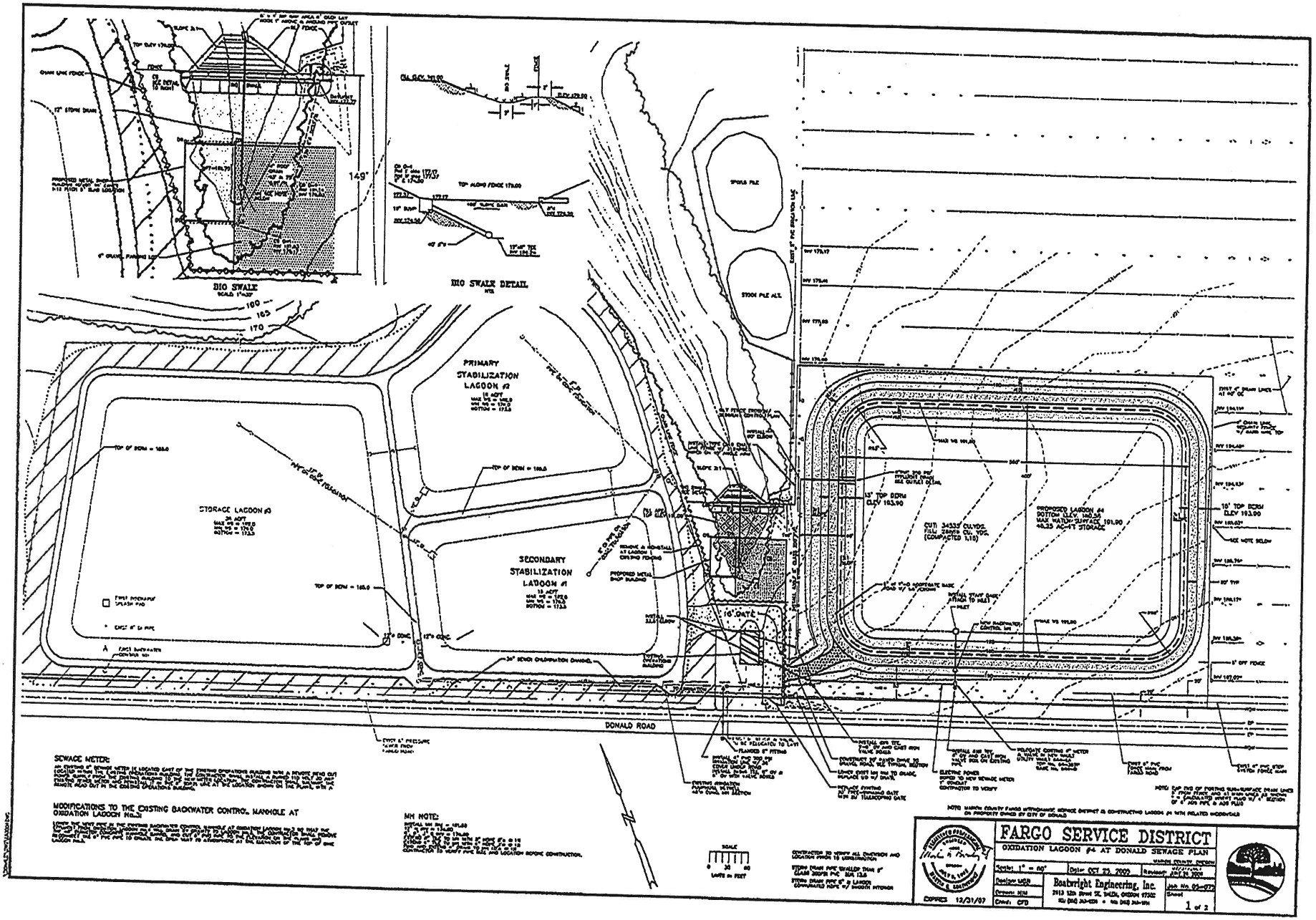
CITY OF DONALD
SEWERAGE TREATMENT PLANT SITE
IRRIGATION AND FENCING PLAN

Scale 1" = 200' | Date NOVEMBER 1982 | Revised APRIL 1983

Design R.M.F.
Drawn A.M.F.
Checked R.M.F.

Boatwright Engineering Inc.
340 5th St. SE, Salem, Oregon 97301
(503) 363-9226

Job No. 974
Sheet 34 of 34


BIO SWALE
BIO SWALE DETAIL
PRIMARY STABILIZATION LAGOON #2
STORAGE LAGOON #3
SECONDARY STABILIZATION LAGOON #1
PROPOSED LAGOON #4
SPOILS PILE
STOCK PILE ALT.
DONALD ROAD
SEWAGE METER:
MODIFICATIONS TO THE EXISTING BACKWATER CONTROL MANHOLE AT OXIDATION LAGOON #1&2
MH NOTE:
FARGO SERVICE DISTRICT
OXIDATION LAGOON #4 AT DONALD SEWAGE PLAN
Beatbright Engineering, Inc.
1 of 2

APPENDIX C

COPY OF ORIGINAL 1982 REPORT OF SEWAGE TREATMENT FACILITIES BY CES, LTD.

- ORIGINAL 1982 WATER BALANCE
- ORIGINAL IRRIGATION EFFLUENT SPECIFICATIONS

P. O. Box 137 • Corbett, Oregon 97019-0137
Telephone (503)695-5760

255 E. Queen, Suite A • Albany, Oregon 97321-3393
Telephone (503)926-7737

ces, LTD.

Soil & Waste Management Consultants

October 27, 1982

Mr. Russ Fetrow
Boatwright Engineering
2613 12th Street SE
Salem, OR 97302

RE: City of Donald Sewage Treatment Facilities; final water balance, subsurface drainage system layout and specifications, recommended irrigation and cropping practices.

Dear Russ,

I have completed the tasks referenced above and submit the following report for your review. Due to the larger active storage capacity (57.8 AF) indicated by your final pond configuration, drainage of the entire irrigation site does not appear necessary to insure maintenance of maximum liquid levels. Instead, I have proposed installation of parallel subsurface drains on approximately 22 acres in the southeast corner of the site as a minimum. More laterals can be added with the same pattern and specifications if desired to increase soil productivity.

Water Balance

The annual water balance and active storage requirements have been recalculated based on the final configuration and size of treatment and holding ponds (table 1.) Sewage flow estimates have been kept constant throughout the year. Discussion with Jim Van Domelen of the Oregon Dept. of Environmental Quality took place regarding this column of table 1. Recent data collected in Oregon has lead the agency to accept average sewage flows of 50 gpcd. However, allowances for infiltration are required and the original design figure of 70 gpcd was considered adequate to account for total winter inflow for this project.

It was suggested that the inflow rate be kept constant throughout the year to provide a safety margin in the water balance calculation. Since appreciable infiltration is unlikely during the months of May through October, this element of the calculations is conservative.

A lateral spacing of 60' falls between individual recommendations for Woodburn and Amity soils listed in the Willamette Valley Drainage Guide (SCS, 1977).

Adequate topographic relief is available to allow minimum lateral gradients of 0.3'/100'. Grade will be greater on some laterals to maintain average 4' depth. Actual grade and depth should be determined in a final tile plan and layout following pre-contruction stakeout. Shallower depths of 2.5'-3' are acceptable where laterals traverse Concord soils.

The proposed mainline and outlet are located and sized such that additional laterals may be added to the system if desired. The system, as drawn, is expected to greatly improve soil drainage in the down-gradient area of the site even without additional laterals. I suggest, however, the installation of at least one random subsurface tile (B1) to improve drainage in the Concord unit extending to the north end of the site. Minimum depth for this 4" random drain is 2.5', with a minimum grade of 0.3'/100'

Cropping and Irrigation Practices

The most practical cropping system for a long season effluent irrigation site as proposed for the 20 acre drained area is perennial forage. A perennial crop such as ryegrass, orchardgrass, or timothy will provide nutrient uptake, maintain surface infiltration, and improve trafficability in the early season. A mixture of grass plus a legume may be desired to increase forage quality and palatability. Recommended seeding rates from the Oregon Interagency Guide for Conservation and Forage Plantings (1980) are as follows:

Crop	Seeding rate (lb/acre)			
	A	B	C	D
timothy		2		2
orchardgrass			4	
perennial ryegrass	10			
alfalfa		12-20	10	
birdsfoot trefoil				6

Effluent irrigation will provide a maximum of 169 lbs total nitrogen/acre on the long season half (20 acres) of the site assuming maximum hydraulic loading shown in table 2 and effluent N concentrations of 20 mg/l. The other half of the site will receive up to 112 lbs total N/acre. Approximately 60% of the total N application will be available for crop

production. The remainder will be tied up in unavailable organic form or lost by volatilization and denitrification. Annual soil testing and monitoring of effluent nutrient concentrations is recommended to determine requirements for supplemental fertilizer to maximize crop yield.

Two to three cuttings per year of hay or ensilage should be possible. When weather permits, hay may be more marketable and provide a greater financial return. Lease agreements with local farmers/ranchers may be desirable as a means of reducing long-term operation and maintenance relating to crop production.

Greater cropping flexibility is anticipated for the site area which will receive shorter season effluent irrigation. The entire site may be planted to one of the seeding mixtures described above or annual forage crops such as field corn may be considered Final selection of cropping practices for the short season or non-irrigated areas will depend on market conditions and operator preference. Due to public health concerns, the regulatory agencies will discourage the production of human food crops. With the treatment level proposed (secondary treatment plus disinfection), however, there are no other restrictions.

The site is well suited for an automated wheel-line irrigation system. As described in my earlier report, the basic intake rate of site soils is 0.3 inches/hour. To prevent ponding and runoff, irrigation application rates should not exceed this value.

Sprinkler size and spacing can be used to determine application rates. For example, a 7.5 gpm sprinkler set on a 40'x60' spacing will apply effluent at a rate of 0.3 inches/hour. Spacings and sprinkler sizes will vary depending on the manufacturer and type of equipment selected. The specified maximum application rate, however, is common for Willamette valley soils and can be matched by most readily available equipment.

Individual gross applications of 5 inches/acre on a 20 day frequency were recommended in my previous report. Early season applications (March, April, May) do not require this volume as shown in table 1 of that report. Total application of 2.5 inches/month on the 20 acre drained area will be adequate to balance active storage volume in the lagoons during that period of the irrigation season. Greater volumes of effluent will be irrigated later in the season to meet crop consumptive use requirements.

If you have any comments or questions regarding this report, please give me a call. Specifications regarding the subsurface drainage system have required a considerable investigative effort. I have shown the preliminary layout and specs to Marion County SCS personnel and they agree that this approach to project design is appropriate. Final layout can be modified, however, if you see practical reasons for a different location, etc. I look forward to hearing from you on this.

Very truly yours,

Steven A. Wilson

Steven A. Wilson, C.P.S.S.

attachment
cc: Don Cordell w/o attachment

Table 1. City of Donald wastewater treatment and storage lagoons.

Max. surface area - 10.02 acres (total)
No. of cells - 3
Active storage capacity - 57.8 acre feet(AF)

MONTH	SEWAGE FLOW[1]		PRECIPITATION[2] (Average)		EVAPORATION[3] (Average)		DISCHARGE (Irrigation)		ACTIVE STORAGE	
	MG	AF	IN	AF	IN	AF	IN (max)	AF	This Month AF	Accum. AF
Nov	2.4	7.37	5.6	4.68	0.95	0.79	0	-	11.26	11.26
Dec	2.4	7.37	6.9	5.76	0.62	0.52	0	-	12.61	23.87
Jan	2.4	7.37	6.4	5.34	0.50	0.42	0	-	12.29	36.16
Feb	2.4	7.37	5.5	4.59	0.80	0.67	0	-	11.29	47.45
Mar	2.4	7.37	4.6	3.84	1.60	1.34	2.5	4.17[4]	5.70	53.15
Apr	2.4	7.37	2.1	1.75	2.40	2.00	2.5	4.17[4]	2.95	56.10
May	2.4	7.37	2.0	1.67	3.00	2.51	2.5	4.17[4]	2.36	58.46
Jun	2.4	7.37	1.4	1.17	4.10	3.42	5.0	16.68	-11.56	46.90
Jul	2.4	7.37	0.4	0.33	5.00	4.18	7.5	24.99	-21.47	25.43
Aug	2.4	7.37	0.5	0.42	5.20	4.34	7.5	24.99	-21.54	3.89
Sep	2.4	7.37	1.5	1.25	3.50	2.92	5.0	AR[5]	0.00	0.00
Oct	2.4	7.37	4.4	3.67	1.90	1.59	5.0	AR[5]	0.00	0.00
Totals	28.80	88.44	41.3	34.47	29.57	24.70				

[1] 1030 population @ 70 gpcd plus 10% industrial flow.

[2] OSU Ag. Exp. Sta. Special report no. 150, 1963 (Salem McNary Field Station).

[3] SCS, Drawings ES-1016, sheets 2-13 (Monthly evaporation from small lakes and reservoirs); derived from U.S. Weather Bureau Tech Paper #37.

[4] 20 acre tiled field, perennial grass crop.

[5] Irrigation as required (AR) to maintain minimum 2 foot lagoon level.

ORIGINAL IRRIGATION EFFLUENT SPECIFICATIONS

PIPING:

All pipes will be of the size and material types as shown on the plans. 8" and 12" ductile iron shall be mortar lined class 50 with tyton joints (ANSI A21 51 AWWA C151). 12" and 36" concrete pipe shall be reinforced rubber ring concrete sewer pipe ASTM C-76 Class III.

MANHOLES:

Where called for shall be precast 48" diameter concrete ASTM C478-73 with cast iron frame and covers with 24" openings.

CHLORINATION SYSTEMS:

This system shall consist of a chlorine room, a vacuum operated gas chlorinator with automatic switchover, a two cylinder scale, an air mask and a DPD residual chlorine test kit. Manufacturer shall provide a safe and operable facility.

CHLORINATOR:

The chlorinator shall consist of two cylinder units with automatic switchover which shall reduce the chlorine gas under pressure to a vacuum. A control unit controls the flow of gas through a v-notch plug and indicates the flow rate with a 100 lb./day rotameter. The control unit shall have a vent which relieves any pressure. A check valve in the control unit shall prevent flooding. The injector shall be equipped with a .240" throat. The injector requires water at 10 gallons per minute at a minimum inlet pressure of 25 psi to operate against a back pressure not to exceed 5 psi and create the vacuum which operates the system. The injector shall have a check valve to prevent flooding. The chlorinator shall be Wallace & Tiernan V100 or equal. Control

of the chlorinator shall be at the irrigation pump by the use of an electrically operated solenoid valve (pvc) which wired into the pump circuits for automatic operation when either pump operates.

CHLORINE SCALE:

The scale shall read directly and continuously the pounds remaining in the cylinder. It shall weigh two cylinders, independently. The face of the scale shall provide mounting space for the chlorinator control units. The base of the scale shall be not over 1½" high. Chains shall support the cylinders. The scale shall be Wallace & Tiernan 50-345 or equal.

ELECTRICAL:

Power supply will be by direct burial cable from the main electrical panel at the operation building. The pumps shall have NEMA 3 wall mounted disconnect switch. Each pump shall be equipped with a manual start stop switch and suitable magnetic starters allowing for the pumps to be operated either singly or together. Each pump shall be provided with a "third leg" protector.

The pump house shall be equipped with a light switch adjacent to the door 100 watt ceiling light and grounded plug-in.

A 1½" PVC solenoid valve s hall be placed in the pumphouse wired in to the chlorine solution line to control chlorination when irrigating.

PVC PIPE:

The PVC (Polyvinyl Chloride) pipe used shall be 5" nominal diameter Class 160 psi pipe. The PVC pipe shall be furnished and installed in 20' lengths utilizing solvent weld joints. The

pipe shall be installed according to the manufacturers recommendations. Pipe bedding and backfilling shall be performed using native backfill free from rocks or other objectionable material. The 5' buried PVC main line shall be installed with a minimum cover of 30" equipped with 22 risers to a point 12" above the ground with schedule 80 4" PVC and a Wade 7-4PT Hydrant or equal with ends compatable to connections on wheel line at 60 foot intervals. The PVC pipe shall have a SDR of 26.

CHLORINATION WATER SUPPLY:

Water to operate the chlorinator will be obtained from the service to the operations building via a 1 1/2" galvanized iron pipe equipped with a gate valve adjacent to the chlorinator, laid under the concrete floor.

POWER SUPPLY:

Power to the chlorinator room shall be an individual circuit from the breaker box at the service entrance to the operations building.

AIR MASK:

A pressure demand type air mask with Ultravue face mask and 30 minute cylinder shall be provided with a carrying/storage case. Air mask shall be MSA 461704 or equal.

RESIDUAL COMPARATOR:

The residual comparator shall have a disc with nine color standards, range 0.1 to 2.0 mg/l, a prismatic eyepiece and a 13 mm viewing tube. It shall be supplied with a carrying case and

100 DPD #4 tablets. Comparator shall be Wallace & Tiernan 50-280 or equal.

CHLORINE FEED DATE:

At 200 gpm chlorine will have to be added at the rate of 0.1# per house to produce each mg/l of contact, so to develop 6 mg/l 0.6# of chlorine will have to be added per hour or 14.4# per day.

PUMP STATION:

Pump: The pumps used shall be an end-suction centrifugal pump. Each pump shall be capable of 200 GPM @ 140' TDH and shall exhibit a minimum efficiency of 75% at design conditions. The pump shall be all-cast-iron construction with a stainless steel sleeve. The pump shall be equipped with a stuffing box using standard graphite or teflon packing. The motor shall be a 10 Hp ODP motor suitable for 230/460V 3 phase duty and shall have a 1.15 service factor rating. The pump shall be equal to a Cornell model 2W10-2.

Check Valve: The check valve shall be a 5" swing type spring return check valve and shall be designed to be fully open at design capacity. Velocity thru valve shall not exceed 5 F.P.S. at design capacity.

Butterfly Valve: The butterfly valve used shall be a 5" water style quarter turn valve with locking valve lever.

IRRIGATION PUMP HOUSING AND WET WELL:

The irrigation pumps shall be installed to pump water from a wet well consisting of a 48" diameter concrete manhole section capped with a 6" reinforced slab which also serves as the pump house floor slab as shown in the plans.

SUPERSEDES 132-24
APR. 1985

SEPTEMBER 1985

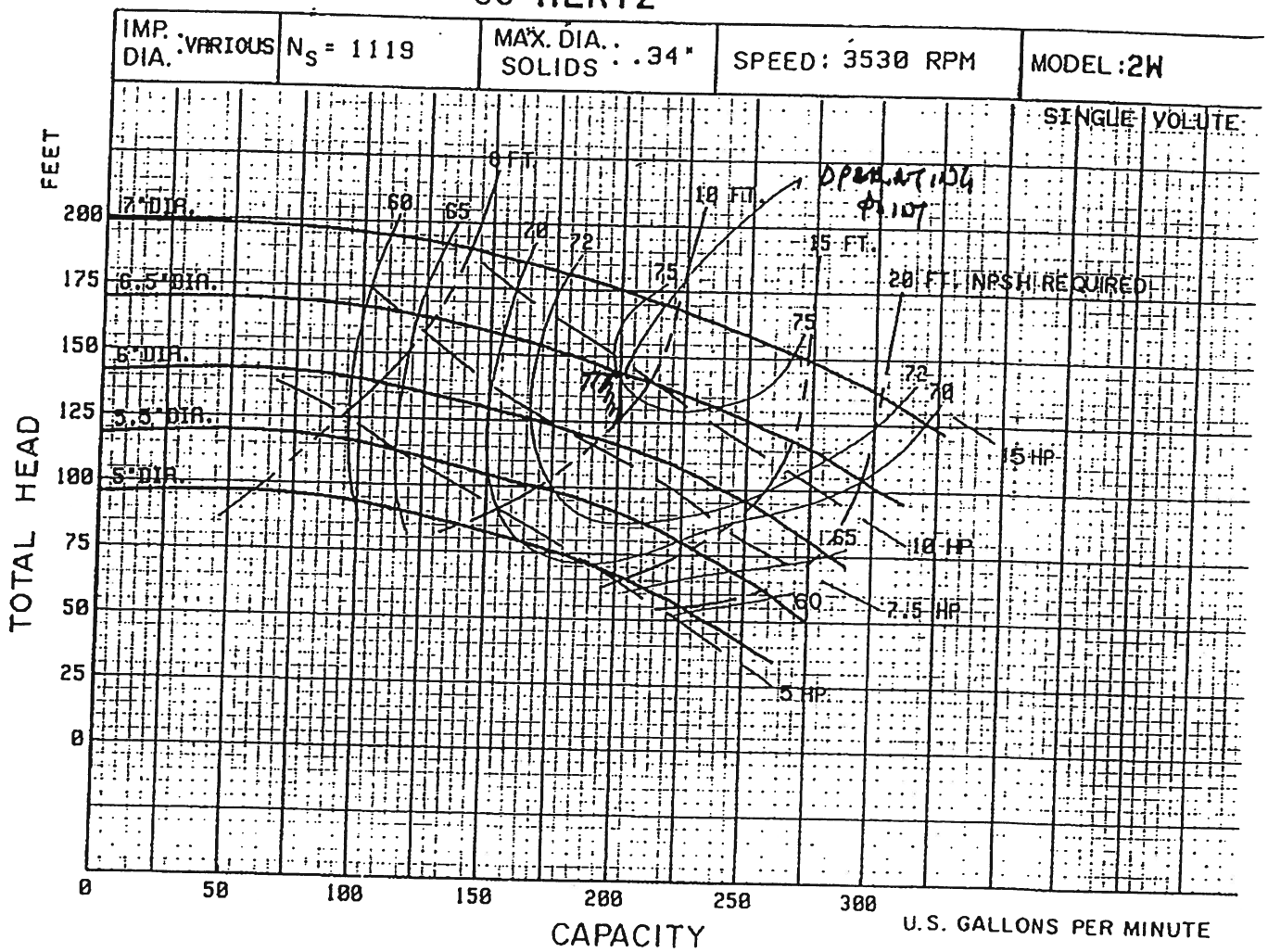
132-24

MODEL 2W PUMP

SPEED - 3600 RPM

CLOSED IMPELLER

60 HERTZ



HP	MAXIMUM IMPELLER DIAMETER: FOR FULL MOTOR LOAD	MAXIMUM IMPELLER DIAMETER: FOR FULL MOTOR LOAD + 15% S.F.
15	A(7.0")	
10	B(6.25")	B+(6.75")
7.5	C(5.62")	C+(6.00")
5	D(4.88")	D+(5.19")

FT. x (.305) = METERS

GPM x (.227) = CUBIC METERS PER HOUR

DONALD SEWAGE
EFFLUENT Irrigation Pump

Performances shown are for close-coupled electric configuration with packing.

APPENDIX D

EXCERPTS FROM OREGON STATE UNIVERSITY'S STUDY:

"OREGON CROP WATER USE AND IRRIGATION REQUIREMENTS"

REGION: 5 Willamette Valley
CROP: Grass Seed (Fall)

MONTH	5 out of 10 years		6 out of 10 years		7 out of 10 years		8 out of 10 years		9 out of 10 years		19 out of 20 years	
	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.
Jan	4 (0.16)	0 (0.00)	7 (0.28)	0 (0.00)	7 (0.28)	0 (0.00)	9 (0.35)	0 (0.00)	9 (0.35)	0 (0.00)	10 (0.39)	0 (0.00)
Feb	15 (0.59)	0 (0.00)	16 (0.63)	0 (0.00)	16 (0.63)	0 (0.00)	18 (0.71)	0 (0.00)	19 (0.75)	0 (0.00)	20 (0.79)	0 (0.00)
March	37 (1.46)	1 (0.04)	38 (1.50)	1 (0.04)	39 (1.54)	1 (0.04)	41 (1.61)	1 (0.04)	43 (1.69)	2 (0.08)	45 (1.77)	2 (0.08)
April	77 (3.03)	5 (0.20)	79 (3.11)	7 (0.28)	81 (3.19)	21 (0.83)	83 (3.27)	31 (1.22)	86 (3.39)	42 (1.65)	89 (3.50)	49 (1.93)
May	120 (4.72)	55 (2.17)	122 (4.80)	64 (2.52)	124 (4.88)	71 (2.80)	126 (4.96)	79 (3.11)	130 (5.12)	92 (3.62)	135 (5.31)	105 (4.13)
June	143 (5.63)	93 (3.66)	144 (5.67)	104 (4.09)	146 (5.75)	114 (4.49)	150 (5.91)	123 (4.84)	152 (5.98)	133 (5.24)	152 (5.98)	138 (5.43)
July	172 (6.77)	161 (6.34)	173 (6.81)	166 (6.54)	175 (6.89)	171 (6.73)	177 (6.97)	176 (6.93)	180 (7.09)	180 (7.09)	184 (7.24)	184 (7.24)
Aug	126 (4.96)	115 (4.53)	127 (5.00)	119 (4.69)	132 (5.20)	123 (4.84)	134 (5.28)	127 (5.00)	136 (5.35)	135 (5.31)	138 (5.43)	138 (5.43)
Sep	50 (1.97)	11 (0.43)	51 (2.01)	15 (0.59)	52 (2.05)	23 (0.91)	52 (2.05)	30 (1.18)	54 (2.13)	46 (1.81)	55 (2.17)	50 (1.97)
Oct	42 (1.65)	2 (0.08)	42 (1.65)	3 (0.12)	43 (1.69)	3 (0.12)	43 (1.69)	4 (0.16)	45 (1.77)	7 (0.28)	46 (1.81)	31 (1.22)
Nov	13 (0.51)	0 (0.00)	15 (0.59)	0 (0.00)	15 (0.59)	0 (0.00)	15 (0.59)	0 (0.00)	16 (0.63)	0 (0.00)	16 (0.63)	0 (0.00)
Dec	4 (0.16)	0 (0.00)	4 (0.16)	0 (0.00)	4 (0.16)	0 (0.00)	4 (0.16)	0 (0.00)	7 (0.28)	0 (0.00)	7 (0.28)	0 (0.00)
Season	803 (31.61)	443 (17.45)	818 (32.21)	479 (18.87)	834 (32.85)	527 (20.76)	852 (33.55)	571 (22.48)	877 (34.53)	637 (25.08)	897 (35.30)	697 (27.43)

REGION: 5 Willamette Valley
CROP: Grass Seed (Spring)

MONTH	5 out of 10 years		6 out of 10 years		7 out of 10 years		8 out of 10 years		9 out of 10 years		19 out of 20 years	
	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.	ET crop mm in.	Net IRR mm in.
Jan	6 (0.24)	0 (0.00)	6 (0.24)	0 (0.00)	7 (0.28)	0 (0.00)	10 (0.39)	0 (0.00)	10 (0.39)	0 (0.00)	11 (0.43)	0 (0.00)
Feb	12 (0.47)	0 (0.00)	13 (0.51)	0 (0.00)	13 (0.51)	0 (0.00)	15 (0.59)	0 (0.00)	16 (0.63)	0 (0.00)	16 (0.63)	0 (0.00)
March	18 (0.71)	0 (0.00)	18 (0.71)	0 (0.00)	20 (0.79)	0 (0.00)	20 (0.79)	0 (0.00)	21 (0.83)	0 (0.00)	22 (0.87)	0 (0.00)
April	44 (1.73)	1 (0.04)	45 (1.77)	2 (0.08)	45 (1.77)	2 (0.08)	46 (1.81)	2 (0.08)	47 (1.85)	11 (0.43)	48 (1.89)	15 (0.59)
May	66 (2.60)	7 (0.28)	67 (2.64)	15 (0.59)	68 (2.68)	22 (0.87)	69 (2.72)	30 (1.18)	70 (2.76)	44 (1.73)	72 (2.83)	51 (2.01)
June	101 (3.98)	54 (2.13)	102 (4.02)	66 (2.60)	104 (4.09)	76 (2.99)	106 (4.17)	85 (3.35)	107 (4.21)	93 (3.66)	108 (4.25)	97 (3.82)
July	152 (5.98)	142 (5.59)	153 (6.02)	147 (5.79)	155 (6.10)	151 (5.94)	157 (6.18)	155 (6.10)	161 (6.34)	160 (6.30)	163 (6.42)	163 (6.42)
Aug	138 (5.43)	126 (4.96)	142 (5.59)	131 (5.16)	144 (5.67)	135 (5.31)	146 (5.75)	139 (5.47)	149 (5.87)	147 (5.79)	151 (5.94)	151 (5.94)
Sep	106 (4.17)	61 (2.40)	107 (4.21)	68 (2.68)	108 (4.25)	76 (2.99)	110 (4.33)	85 (3.35)	114 (4.49)	101 (3.98)	115 (4.53)	108 (4.25)
Oct	65 (2.56)	4 (0.16)	66 (2.60)	5 (0.20)	67 (2.64)	6 (0.24)	68 (2.68)	15 (0.59)	71 (2.80)	29 (1.14)	72 (2.83)	55 (2.17)
Nov	21 (0.83)	0 (0.00)	23 (0.91)	0 (0.00)	23 (0.91)	1 (0.04)	24 (0.94)	1 (0.04)	24 (0.94)	1 (0.04)	25 (0.98)	1 (0.04)
Dec	6 (0.24)	0 (0.00)	6 (0.24)	0 (0.00)	7 (0.28)	0 (0.00)	7 (0.28)	0 (0.00)	9 (0.35)	0 (0.00)	9 (0.35)	0 (0.00)
Season	735 (28.94)	395 (15.56)	748 (29.46)	434 (17.10)	761 (29.97)	469 (18.46)	778 (30.63)	512 (20.16)	799 (31.46)	586 (23.07)	812 (31.95)	641 (25.24)

4 EXAMPLES

4.1 APPLICATION TO SYSTEM DESIGN

In this section, we will demonstrate application of the ET_{crop} and Net Irrigation Requirement tables for irrigation system design using the example of potatoes grown in the Hermiston area. First, locate those tables applicable to the Hermiston area. Figure 1 and Table 1 show that Hermiston is in region number 14. Table 2 indicates that the pages corresponding to this area for ET_{crop} and Net Irrigation Requirements are from 103 to 111. Turning to this section, we see that the crops are listed in alphabetical order. There are three tables for potatoes, depending on an early, mid, or late planting dates. Assume that for contract purposes, the growing season will correspond to the mid planting date (April 10) shown in Table 1. Planting dates and growing seasons indicated in Table 1 are general guidelines, but are generally accurate enough for irrigation system design and management purposes in Oregon.

Next, choose the proper design probability level for your situation. This level depends on the crop's susceptibility to water stress, the value of the crop, and the grower's acceptable level of risk. The higher the probability level you choose, the less risk there will be for crop damage due to extreme weather conditions, but the system costs will be higher. It is a judgement call and what is acceptable to one grower or system designer may not work for another.

Table 4 suggests general guidelines for probability levels for different crop types. These values are based on relative value of the crops, susceptibility to water stress, and adaptability of the crop to explore a large volume of soil within the potential root zone. Values in Table 4 should be considered as starting values that may be modified by the grower and designer for specific cases.

Table 4. Suggested range of probability levels in percent for irrigation system design based on type of crop.

CROP TYPE	PROBABILITY LEVEL MINIMUM	MAXIMUM
Field Crops	50	70
Orchards - New Planting	70	80
Orchards - Mature	50	60
Specialty Crops	80	90

Continuing with the example, let's assume we decide to use the Specialty Crop probability levels for design considering the value of potatoes and the relative susceptibility to quality damage from water stress. Assume that the grower and designer are satisfied with an 80 percent or 8 out of 10 year design level. The irrigation system capacity is based on the peak month water requirement, applying the concept that if the capacity is adequate for the maximum use month, it is adequate for any other month. From the table for Hermiston, the peak month is July with an ET_{crop} of 226 mm (8.9 in.). Analysis of climatic data for the region indicates that no effective precipitation is expected at this probability level for July and therefore the net irrigation requirement is also 226 mm (8.9 in.).

The net irrigation requirement is the estimate of the amount of water which will be used by the crop. This amount of water must be delivered to the active root zone for maximum production. Certain amounts of water applied to the field will not reach the root zone. Water that leaves the field in spray and wind drift from a sprinkler system, runs off the low point of the field (required for some types of surface irrigation systems), or percolates through the soil past the root zone is not considered to be available to meet the net irrigation requirement of the crop. Some of this water may be used to leach salts out of the root zone or have other beneficial uses, but it is not considered to meet the net irrigation requirement as defined in this report.

We developed a system of irrigation efficiencies to calculate the volume of water required at different points in an irrigation system based on the net irrigation requirement (Cuenca, 1989). The combined application and distribution pattern efficiency, E_c, accounts for deep percolation, runoff, and water leaving the field as spray and wind drift. It is extremely problematic to estimate the combined efficiency for different types of irrigation systems because it is a function of soil type, crop type, meteorological conditions, system design, and management. Table 5 presents a range of combined efficiencies for different types of irrigation systems. The values given in Table 5 should be considered as starting values if no specific information is available for the particular system in question. These values are based on attainable values for systems that are generally well designed and managed. A lower efficiency is related to systems with a lower level of management or operating in an arid climate. The higher values can be considered for well managed systems or a humid climate. These values should be modified if reliable local information is available for the system in question. See Cuenca (1989) for more details and methods to compute the combined efficiency for various types of systems.

APPENDIX E

VARIOUS CORRESPONDENCE

ENCLOSED DOCUMENTS:

- January 6, 2009-Letter from Mary Pfauth DEQ, to City of Donald Public Works Department notifying them that they are in violation of Oregon environmental low for not monitoring and reporting nutrients in the effluent and for not monitoring pH.

- January 22, 2009- Letter from Corbey Boatwright, Boatwright Engineering to Mary Pfauth, stating corrective action to be performed as mentioned in DEQ January 6 letter.

- March 25, 2009 – Letter from Mary Pfauth, DEQ, indicates that the Donald Geotechnical Report was reviewed and it is concluded that the sewage treatment system will not pose a likely adverse groundwater quality impact and a groundwater monitoring program is not necessary.

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Western Region-Salem Office
750 Front St. NE, Ste. 120
Salem, OR 97301-1039
(503) 378-8240
(503) 378-3684 TTY

January 6, 2009

Tom McWhirt, Director
Public Works Department
City of Donald
PO Box 388
Donald, OR 97111-0388

RE: Warning Letter with Opportunity to Correct
City of Donald
WLOC-WQ-WRS-08-222
File no. 24600
Marion County

Dear Mr. McWhirt:

On December 29, 2008, the Department of Environmental Quality (Department) conducted an inspection of the City of Donald Wastewater Treatment Plant located at 10501 Donald Rd., Donald. Based upon the inspection of your facility, the Department has concluded that the City of Donald is responsible for the following violations of Oregon environmental law:

VIOLATIONS:

(1) Quarterly monitoring and reporting for nutrients ($NO_2 + NO_3$-N, TKN, NH_3, total P) in the reclaimed water effluent has not been done as required by Schedule B(1b) of the City's Wastewater Pollution Control Facility (WPCF) permit number 101978 issued on October 6, 2000. This is a Class I violation.

(2) Monitoring of pH has not been done according to **Standard Methods for the Examination of Water and Wastewater** as required by Schedule F, section C(3) of the City's permit. This is a Class II violation.

Class I violations are the most serious violations; Class III violations are the least serious.

Fulfilling the mandatory monitoring and reporting conditions is an important obligation. Without monitoring, the City, DEQ, and the public are unable to evaluate the effectiveness of the City's wastewater treatment system. An ineffective treatment system can cause water quality impairments and/or public health hazards.

Boatwright Engineering Inc.
2613 12th ST SE, SALEM, OREGON 97302
civil engineers • land surveyors
503 363-9225 FAX 363-1051

January 22, 2009

Department of Environmental Quality
Western Region
750 Front Street NE, Suite 120
Salem, OR 97301-1030

Attention: Ms. Mary Pfauth, Natural Resources Specialist

Re: CITY OF DONALD DEQ PERMIT

Dear Ms. Pfauth,

Tom McWhirt sent me a copy of your letter dated January 6, 2009. He will be taking care of items 1 and 2 under your corrective action required. I am sending you all the information in our file on the hydrogeologic characterization and groundwater monitoring plan. I have had contact with Jack Arndt, Gary Messer, Raghu Namburi, and Bill Mayson regarding the groundwater monitoring wells. The email I have my file stated that Keith Anderson had the information last with Jack Arendt stating he can assist. This email is dated 9/23/02. Sometime after this I think, as I recall, Gary Messer said there was enough information that Donald did not need to install the additional monitoring well.

I have enclosed the documents that we were going to use to establish the last monitoring wells. The well along the county road was to monitor the groundwater from the nursery operation that was south of the road. If there was any contamination from there we would see it. Since that time, the Fargo Interchange Lagoon has been installed. The city property is being leased to McKay Farms and Baker West has sold the farm south of the county road to A & R Spada Farms. I am Spada Farm's CWRE (Certified Water Right Examiner) and I am aware that the city and Spada are trying to workout a way the effluent could be used South of the road by utilizing some of the existing irrigation lines. I know there are issues of contamination and cross-connection with the well water and we haven't come up with a cheap way of dealing with this yet. If effluent does go south of the road, and I am not sure where we would need to monitor the ground water.

Once you look this information over and decide you need to meet with the City about this portion of their permit I would like to be included since we are the city's engineer and I have

worked with both Spada and McKay on other water right issues.

If you have any questions don't hesitate to ask.

Sincerely,

Corbey Boatwright, CWRE, PE
corbey@boatwrightengr.com

CC: Tom McWhirt, Public Works Director, City of Donald

Enclosure:	11/82	Geotechnical Investigation
	6/99	Wastewater Lagoon Disposal
	5/15/01	Letter to Jack Arndt
	9/23/02	E-mails
	8/25/03	E-mail
	8/6/02	Letter to Gary Messer
	August 2002	Plans, Specifications for 6 monitoring Geotechnical Investigation wells (never done)

Oregon
Theodore R. Kulongoski, Governor

Department of Environmental Quality
Western Region - Salem Office
750 Front St. NE, Ste. 120
Salem, OR 97301-1039
(503) 378-8240
(503) 378-3684 TTY

DATE: March 25, 2009

TO: Tom McWhirt, Director
City of Donald Public Works
PO Box 388
Donald, OR 97111-0388

RE: Compliance with Schedule D, condition 6 - Groundwater monitoring wells
City of Donald Sewage Treatment Plant
File no. 24600, Permit no. 101978
Marion County

Dear Mr. McWhirt:

The Department hydrogeologist, Bill Mason, reviewed the Donald Geotechnical Report that was published in 1982. The report concludes (and he agrees) that any effluent that seeps out of the ponds will likely enter the incised drainages, as would any effluent land-applied above agronomic rates. In addition, the Willamette Silts formation is not considered an aquifer (typical yields are on the order of half a gallon to a gallon per minute), and the shallower Willamette Silts are typically underlain by a darker gray (or blue gray), clayey zone that functions like an aquitard. The Troutdale formation is the aquifer in general use in the area, and wells generally appear to be 100 to 200 feet deep.

The public drinking water system for Donald is located up gradient of the site, and the low nitrate concentrations for their wells suggests that the Troutdale is not particularly vulnerable to surficial contaminant sources in the Donald vicinity.

Based on this information, he concluded that the system will not pose a "likely adverse groundwater quality impact" as defined in OAR 340-040. Therefore, a groundwater monitoring program is not necessary.

This letter is to inform you that the City has complied with Schedule D, condition 6 of its WPCF permit.

If you have any questions, please contact me at the address at the top of this letter or by telephone at (503) 378-4978.

Sincerely,

Mary C. Pfauth

Mary Pfauth
Water Quality Specialist
DEQ - Salem Office

cc: Corbey Boatwright, Boatwright Engineering, 2613 12th St. SE, Salem, OR 97302

APPENDIX F

EFFLUENT INFLOW DATA FOR CITY OF DONALD AND FOR FARGO

City of Donald

TOTAL Flow From Donald and Fargo

EFFLUENT INFLOW

	Donald MG Month	Fargo MG Month
January 2010 =	2.407	2.099
February 2010 =	1.762	1.516
March 2010 =	1.956	1.525
April 2010 =	1.838	1.698
January 2009 =	2.505	2.01
February 2009 =	1.552	0.912
March 2009 =	1.945	1.806
April 2009 =	1.632	1.255
May 2009 =	1.756	1.299
June 2009 =	1.557	0.819
July 2009 =	1.560	0.668
August 2009 =	1.682	0.870
September 2009 =	1.663	0.534
October 2009 =	1.669	0.482
November 2009 =	1.697	0.604
December 2009 =	1.856	0.897

To Janelle Poe. PE

Boatwright Engineering. Fax 503-363-1051

APPENDIX B

2017-18 DISCHARGE MONITORING REPORTS

NPDES Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	Phone Number	503-704-5591	From - Month & Year	January 1, 2018
DEQ Permit No.	101978	DEQ File No./Facility ID	24600	To - Month & Year	January 31, 2018
System Type	Step-System	Population Served	985	County	Marion

Operator Certification

Collection sys. class	1	Principal operator name (print)	Alonso Limones	Certification No. & grade	12347/II
Treatment sys. class	1	Principal operator name (print)	Alonso Limones	Certification No. & grade	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD / GPD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
1	1	0.072		0.054																	
1	2	0.071		0.054																	
1	3	0.065		0.051																	
1	4	0.058		0.057																	
1	5	0.068		0.057																	
1	6	0.068		0.053																	
1	7	0.068		0.053																	
1	8	0.067		0.053																	
1	9	0.076		0.058																	
1	10	0.075		0.057																	
1	11	0.080		0.070																	
1	12	0.077		0.063																	
1	13	0.077		0.063																	
1	14	0.076		0.064																	
1	15	0.077		0.064																	
1	16	0.076		0.058																	
1	17	0.063		0.057																	
1	18	0.084		0.066																	
1	19	0.082		0.065																	
1	20	0.076		0.064																	
1	21	0.079		0.065																	
1	22	0.078		0.064																	
1	23	0.072		0.062																	
1	24	0.108		0.077																	
1	25	0.100		0.078																	
1	26	0.094		0.077																	
1	27	0.089		0.069																	
1	28	0.077		0.066																	
1	29	0.086		0.071																	
1	30	0.084		0.073																	
1	31	0.071		0.066																	
TOTAL		2.394		1.949																	
DAILY MIN.		0.058		0.051																	
DAILY MAX.		0.108		0.078																	
WKLY. AVG. MAX.		0.089		0.070																	
MTHLY. AVG.		0.077		0.063																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X (AK) Authorized Signature

2/5/18 Date

Alonso Limones
Name (print)

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		LOG Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	February 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	February 28, 2018
System Type	Step system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*														
		MGD / GPD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
2	1	0.074		0.067																	
2	2	0.068		0.068																	
2	3	0.068		0.061																	
2	4	0.067		0.059																	
2	5	0.068		0.060																	
2	6	0.064		0.066																	
2	7	0.059		0.058																	
2	8	0.060		0.060																	
2	9	0.059		0.056																	
2	10	0.061		0.055																	
2	11	0.061		0.053																	
2	12	0.059		0.054																	
2	13	0.059		0.054																	
2	14	0.049		0.051																	
2	15	0.061		0.052																	
2	16	0.054		0.048																	
2	17	0.059		0.051																	
2	18	0.060		0.048																	
2	19	0.060		0.048																	
2	20	0.058		0.045																	
2	21	0.063		0.055																	
2	22	0.059		0.063																	
2	23	0.060		0.059																	
2	24	0.061		0.055																	
2	25	0.069		0.055																	
2	26	0.063		0.053																	
2	27	0.062		0.057																	
2	28	0.062		0.062																	
TOTAL		1.727		1.573																	
DAILY MIN.		0.049		0.045																	
DAILY MAX.		0.074		0.068																	
WKLY. AVG. MAX.		0.064		0.059																	
MTHLY. AVG.		0.062		0.056																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE	X Authorized Signature Alonso Limones Name (print)	Date

Notes: ____________________

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _______		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated		Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		**LOG** Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	March 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	March 31, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD / GPD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
3	1	0.065		0.062																	
3	2	0.063		0.061																	
3	3	0.062		0.060																	
3	4	0.062		0.057																	
3	5	0.061		0.055																	
3	6	0.060		0.053																	
3	7	0.055		0.054																	
3	8	0.057		0.056																	
3	9	0.055		0.054																	
3	10	0.056		0.053																	
3	11	0.057		0.053																	
3	12	0.058		0.056																	
3	13	0.063		0.058																	
3	14	0.060		0.057																	
3	15	0.061		0.059																	
3	16	0.059		0.054																	
3	17	0.059		0.054																	
3	18	0.060		0.054																	
3	19	0.061		0.055																	
3	20	0.060		0.057																	
3	21	0.056		0.058																	
3	22	0.065		0.060																	
3	23	0.067		0.064																	
3	24	0.079		0.072																	
3	25	0.077		0.070																	
3	26	0.071		0.064																	
3	27	0.058		0.064																	
3	28	0.060		0.070																	
3	29	0.059		0.064																	
3	30	0.059		0.064																	
3	31	0.061		0.066																	
TOTAL		1.906		1.838																	
DAILY MIN.		0.055		0.053																	
DAILY MAX.		0.079		0.072																	
WKLY. AVG. MAX.		0.064		0.066																	
MTHLY. AVG.		0.061		0.059																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE	X Authorized Signature	Date
	Alonso Limones Name (print)	

Notes: ______________________

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall ______		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							LOG Regarding breakddowns, bypassing, odors, complaints, etc.
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated		Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		
					In./Acr		Gal.	Hrs.									
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	April 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	April 30, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD			TSS		BOD			TSS			NUTRIENTS				CHLORINE		COLIFORM		
					Grab / Comp.		Grab / Composite			Grab / Composite			Grab / Composite						MPN / MF	MPN / MF	MPN / MF
		GPD																			
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
4	1	0.056		0.056																	
4	2	0.056		0.056																	
4	3	0.058		0.060																	
4	4	0.056		0.059																	
4	5	0.058		0.058																	
4	6	0.080		0.062																	
4	7	0.095		0.071																	
4	8	0.095		0.088																	
4	9	0.092		0.067																	
4	10	0.084		0.079																	
4	11	0.077		0.075																	
4	12	0.077		0.075																	
4	13	0.085		0.077																	
4	14	0.072		0.068																	
4	15	0.085		0.068																	
4	16	0.099		0.097																	
4	17	0.080		0.081																	
4	18	0.070		0.080																	
4	19	0.070		0.079																	
4	20	0.062		0.073																	
4	21	0.062		0.072																	
	22	0.062		0.072																	
4	23	0.061		0.073																	
4	24	0.060		0.070																	
4	25	0.059		0.068																	
4	26	0.058		0.064																	
4	27	0.058		0.061																	
4	28	0.056		0.057																	
4	29	0.054		0.056																	
4	30	0.055		0.055																	
TOTAL		2.092		2.077																	
DAILY MIN.		0.054		0.055																	
DAILY MAX.		0.099		0.097																	
WKLY. AVG. MAX.		0.083		0.078																	
MTHLY. AVG.		0.070		0.069																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE	X Authorized Signature Alonso Limones Name (print)	Date

Notes: ______________________________

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated		Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		LOG Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	May 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	May 31, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD			TSS		BOD			TSS			NUTRIENTS				CHLORINE		COLIFORM		
					Grab / Comp.		Grab / Composite			Grab / Composite			Grab / Composite						MPN / MF	MPN / MF	MPN / MF
Month	Day	GPD Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
5	1	0.055		0.055													15	1.32			
5	2	0.055		0.055													15	1.49			
5	3	0.052		0.056													15	1.10			
5	4	0.052		0.053													15	1.27	0		0
5	5	0.053		0.052													15	1.23			
5	6	0.053		0.052																	
5	7	0.053		0.051																	
5	8	0.054		0.050													15	1.29			
5	9	0.052		0.049													15	1.24	0		0
5	10	0.053		0.053													15	1.11			
5	11	0.053		0.052													15	1.50			
5	12	0.054		0.047													15	1.46			
5	13	0.054		0.045																	
5	14	0.055		0.044																	
5	15	0.049		0.050													15	1.49	0		0
5	16	0.048		0.056													15	1.24			
5	17	0.052		0.050													15	1.14	.		
5	18	0.052		0.049													15	1.25			
5	19	0.051		0.049													15	1.15			
5	20	0.052		0.049																	
5	21	0.052		0.050																	
5	22	0.056		0.051																	
5	23	0.058		0.051													15	1.10	0		0
5	24	0.054		0.045													18	1.22			
5	25	0.057		0.046													18	1.14			
5	26	0.058		0.045													18	1.02			
5	27	0.057		0.042													18	1.33			
5	28	0.059		0.042																	
5	29	0.059		0.041																	
5	30	0.057		0.043													18	2.62			
5	31	0.057		0.043													18	2.11			
TOTAL		1.676		1.516																	
DAILY MIN.		0.048		0.041																	
DAILY MAX.		0.059		0.056																	
WKLY. AVG. MAX.		0.058		0.054																	
MTHLY. AVG.		0.054		0.049																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X

Authorized Signature

Date

Alonso Limones

Name (print)

Notes:

Mail Original To: Oregon DEQ, Salem Office
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		LOG Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
					1.5/8.72	6.92											
					1.5/8.91	7.28											
					1.5/8.76												
					1.5/8.40												
					1.5/9.60												
					1.5/9.08	7.19											
					1.5/8.40	7.23											
					1.5/9.06												
					1.5/9.08												
					1.5/8.69												
					1.5/9.23	7.14											
					1.5/8.99	7.13											
					1.5/8.81												
					1.5/9.45												
					1.5/9.08												
					1.5/9.16	7.09											
					1.5/9.23	7.03											
					1.5/9.26												
					1.5/9.23												
					1.5/6.11												
					1.5/8.59	6.93											
					1.5/9.38												
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	June 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	June 30, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE | **INFLUENT** | **EFFLUENT** - *Identify outfall number (e.g. 001, 002) or sampling location:*

Month	Day	INFLUENT Flow (MGD / GPD)		FARGO	TSS Grab Concentration	TSS Comp. Loading	BOD Grab Concentration	BOD Composite Removal	BOD Composite Loading	TSS Grab Concentration	TSS Composite Removal	TSS Composite Loading	NUTRIENTS Grab Total Phosphorous	NUTRIENTS Composite Total Kjeldahl Nitrogen	NUTRIENTS Composite Ammonia Nitrogen	NUTRIENTS Composite Nitrate Nitrogen	CHLORINE Used	CHLORINE Total Residual	COLIFORM Total (MPN / MF)	COLIFORM Fecal (MPN / MF)	COLIFORM E.coli (MPN / MF)
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
6	1	0.057		0.043													18	2.68	0		0
6	2	0.058		0.041													18	2.55			
6	3	0.057		0.041													18	2.61			
6	4	0.058		0.042													18	2.74			
6	5	0.056		0.045													18	2.32			
6	6	0.056		0.039													18	2.12	0		0
6	7	0.055		0.037													18	2.56			
6	8	0.053		0.040													18	2.39			
6	9	0.054		0.034																	
6	10	0.053		0.034																	
6	11	0.053		0.034																	
6	12	0.051		0.042													18	2.57	0		0
6	13	0.049		0.037													18	2.69			
6	14	0.050		0.040													18	2.65			
6	15	0.048		0.042													15	2.95			
6	16	0.049		0.035													15	2.75			
6	17	0.049		0.034																	
6	18	0.050		0.034																	
6	19	0.059		0.040													15	2.62	0		0
6	20	0.056		0.041													15	2.65			
6	21	0.057		0.042													15	2.05			
6	22	0.054		0.040													15	2.43			
6	23	0.054		0.040													15	2.35			
6	24	0.052		0.039																	
6	25	0.053		0.039																	
6	26	0.052		0.045													12	2.52	0		0
6	27	0.055		0.035													12	2.15			
6	28	0.053		0.038													10	1.65			
6	29	0.052		0.039													10	1.75			
6	30	0.051		0.039													10	1.82			
TOTAL		1.604		1.171																	
DAILY MIN.		0.048		0.034																	
DAILY MAX.		0.059		0.045																	
WKLY. AVG. MAX.		0.056		0.040																	
MTHLY. AVG.		0.053		0.039																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X Authorized Signature Date

Alonso Limones
Name (print)

Notes:

Mail Original To: Oregon DEQ, Salem Office
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							LOG Regarding breakddowns, bypassing, odors, complaints, etc.
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		
					In./Acr		Gal.	Hrs.									
					1.5/7.12	7.49											
					1.5/9.13												
					1.5/9.43												
					1.5/8.40	7.28											
					1.5/8.69	7.22											
					1.5/9.43												
					1.5/7.76												
					1.5/9.53												
					1.5/8.99	7.47											
					1.5/7.93	7.39											
					1.5/8.94												
					1.5/9.01												
					1.5/9.43												
					1.5/8.91	7.41											
					1.5/8.81	7.63											
					1.5/9.45												
					1.5/8.45												
					1.5/8.42												
					1.5/8.59	7.84											
					1.5/9.23	7.95											
					1.5/9.28												
					1.5/9.03												
					1.5/8.74												
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	July 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	July 31, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD			TSS		BOD			TSS			NUTRIENTS				CHLORINE		COLIFORM		
					Grab / Comp.		Grab / Composite			Grab / Composite			Grab / Composite						MPN / MF	MPN / MF	MPN / MF
		GPD																			
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
7	1	0.051		0.040																	
7	2	0.052		0.041																	
7	3	0.055		0.038													10	2.25	0		0
7	4	0.054		0.032																	
7	5	0.055		0.032																	
7	6	0.055		0.040													10	2.13			
7	7	0.053		0.036													10	1.96			
7	8	0.052		0.036													10	1.88			
7	9	0.052		0.035																	
7	10	0.052		0.043													10	1.81			
7	11	0.051		0.043													10	1.51			
7	12	0.052		0.042													12	2.25	0		0
7	13	0.051		0.039													12	2.31			
7	14	0.051		0.039																	
7	15	0.050		0.039																	
7	16	0.050		0.038																	
7	17	0.046		0.039													12	1.56			
7	18	0.049		0.042													13	1.51			
7	19	0.047		0.046													13	1.95	0		0
7	20	0.054		0.039													13	1.43			
7	21	0.048		0.039													13	1.87			
7	22	0.049		0.040													13	1.57			
7	23	0.049		0.040																	
7	24	0.049		0.039																	
7	25	0.053		0.037													13	1.26			
7	26	0.051		0.039													13	1.65			
7	27	0.050		0.038																	
7	28	0.052		0.040																	
7	29	0.051		0.039																	
7	30	0.052		0.043																	
7	31	0.053		0.043													13	1.90	0		0
TOTAL		1.589		1.216																	
DAILY MIN.		0.046		0.032																	
DAILY MAX.		0.055		0.046																	
WKLY. AVG. MAX.		0.054		0.040																	
MTHLY. AVG.		0.051		0.039																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X

Authorized Signature

Date

Alonso Limones

Name (print)

Notes:

Mail Original To: Oregon DEQ, Salem Office
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall ____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		LOG Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
					1.5/9.08	8.55											
					1.5/11.56	8.34											
					1.5/9.16												
					1.5/8.64												
					1.5/9.75	8.04											
					1.5/7.93	8.00											
					1.5/9.38												
					1.5/10.88												
					1.5/9.38	7.47											
					1.5/8.72	7.58											
					1.5/8.99												
					1.5/9.11												
					1.5/8.30												
					1.5/9.16												
					1.5/8.54	7.58											
					1.5/8.74	7.49											
					1.5/8.59	7.74											
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	August 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	August 31, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD / GPD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
8	1	0.053		0.044													13	1.35			
8	2	0.054		0.045													13	1.48	0		0
8	3	0.052		0.043													13	1.62			
8	4	0.049		0.038													13	1.68			
8	5	0.048		0.037													13	1.66			
8	6	0.048		0.037																	
8	7	0.055		0.044																	
8	8	0.053		0.045																	
8	9	0.051		0.044																	
8	10	0.051		0.042																	
8	11	0.051		0.042																	
8	12	0.050		0.042																	
8	13	0.050		0.042																	
8	14	0.049		0.035																	
8	15	0.050		0.035																	
8	16	0.050		0.031																	
8	17	0.049		0.034																	
8	18	0.050		0.032																	
8	19	0.049		0.033																	
8	20	0.049		0.034																	
8	21	0.050		0.035																	
8	22	0.045		0.034																	
8	23	0.051		0.034																	
8	24	0.049		0.030																	
8	25	0.044		0.028																	
8	26	0.044		0.029																	
8	27	0.045		0.029																	
8	28	0.048		0.033																	
8	29	0.048		0.039																	
8	30	0.047		0.042																	
8	31	0.048		0.036																	
TOTAL		1.530		1.148																	
DAILY MIN.		0.044		0.028																	
DAILY MAX.		0.055		0.045																	
WKLY. AVG. MAX.		0.051		0.042																	
MTHLY. AVG.		0.049		0.037																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X

Authorized Signature

Date

Alonso Limones

Name (print)

Notes: Stopped the irrigation for the rest of the month due to harvesting.

Mail Original To: Oregon DEQ, Salem Office
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							LOG Regarding breakddowns, bypassing, odors, complaints, etc.
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		
					In./Acr		Gal.	Hrs.									
					1.5/8.40	7.65											
					1.5/9.08												
					1.5/9.50												
					1.5/8.03												
					1.5/9.18												
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	September 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	September 30, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
		GPD																			
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
9	1	0.047		0.035																	
9	2	0.048		0.034																	
9	3	0.047		0.034																	
9	4	0.048		0.034																	
9	5	0.052		0.042																	
9	6	0.054		0.040																	
9	7	0.054		0.039																	
9	8	0.054		0.037																	
9	9	0.053		0.035																	
9	10	0.053		0.034																	
9	11	0.054		0.035																	
9	12	0.055		0.035																	
9	13	0.055		0.035																	
9	14	0.049		0.036																	
9	15	0.050		0.032																	
9	16	0.050		0.032																	
9	17	0.051		0.031																	
9	18	0.047		0.038													13	2.55			
9	19	0.047		0.038													13	2.75			
9	20	0.048		0.038													12	2.35			
9	21	0.049		0.039													10	1.84			
9	22	0.050		0.039													10	1.58	0		0
9	23	0.050		0.038													10	1.51			
9	24	0.048		0.038													10	1.49			
9	25	0.051		0.041													10	1.97	3		0
9	26	0.047		0.040													10	2.00			
9	27	0.048		0.045													10	1.85			
9	28	0.048		0.032													10	1.93			
9	29	0.049		0.031													10	1.88			
9	30	0.049		0.031													10	1.75			
TOTAL		1.505		1.088																	
DAILY MIN.		0.047		0.031																	
DAILY MAX.		0.055		0.045																	
WKLY. AVG. MAX.		0.053		0.038																	
MTHLY. AVG.		0.050		0.036																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE

X

Authorized Signature

Date

Alonso Limones

Name (print)

Notes:

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							LOG Regarding breakddowns, bypassing, odors, complaints, etc.
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		
					In./Acr		Gal.	Hrs.									
					1.5/6.14												
					1.5/6.44												
					1.5/8.94	7.99											
					1.5/5.99	8.26											
					1.5/5.89												
					1.5/6.09												
					1.5/5.94	8.47											
					1.5/11.00	8.50											
					1.5/6.58												
					1.5/6.87												
					1.5/8.72												
					1.5/8.45												
					1.5/8.54												
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	***From** - Month & Year*	October 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	***To** - Month & Year*	October 31,2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*													
		MGD / GPD			TSS Grab / Comp.		BOD Grab / Composite			TSS Grab / Composite			NUTRIENTS Grab / Composite				CHLORINE		COLIFORM MPN / MF	MPN / MF	MPN / MF
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
10	1	0.048		0.033																	
10	2	0.049		0.029													10	1.17			
10	3	0.046		0.043													10	2.93	0		0
10	4	0.047		0.038													10	2.43			
10	5	0.046		0.037																	
10	6	0.053		0.033																	
10	7	0.053		0.032																	
10	8	0.053		0.032																	
10	9	0.050		0.040																	
10	10	0.049		0.039													10	2.37			
10	11	0.049		0.030													10	2.40			
10	12	0.050		0.030													10	2.60	0		0
10	13	0.050		0.037													10	2.57			
10	14	0.049		0.037													10	2.66			
10	15	0.049		0.037																	
10	16	0.050		0.045																	
10	17	0.049		0.052																	
10	18	0.050		0.045																	
10	19	0.048		0.038																	
10	20	0.051		0.041																	
10	21	0.051		0.041																	
10	22	0.051		0.041																	
10	23	0.048		0.042																	
10	24	0.054		0.041																	
10	25	0.050		0.042																	
10	26	0.052		0.040																	
10	27	0.053		0.040																	
10	28	0.054		0.040																	
10	29	0.055		0.040																	
10	30	0.049		0.039																	
10	31	0.055		0.041																	
TOTAL		1.561		1.195																	
DAILY MIN.		0.046		0.029																	
DAILY MAX.		0.055		0.052																	
WKLY. AVG. MAX.		0.051		0.042																	
MTHLY. AVG.		0.050		0.039																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMATION IS TURE, COMPLETE AND ACCURATE	X	
	Authorized Signature	Date
	Alonso Limones Name (print)	

Notes:

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall _____		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		**LOG** Regarding breakddowns, bypassing, odors, complaints, etc.
					In./Acr		Gal.	Hrs.									
					1.5/7.71	8.10											
					1.5/8.67	8.13											
					1.5/5.38												
					1.5/4.30	7.81											
					1.5/3.78												
					1.5/3.68	7.71											
					1.5/3.44												
					1.5/3.17												
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

WPCF Discharge Monitoring Report - Oregon Department of Environmental Quality

Facility Name	City of Donald	**Phone Number**	503-704-5591	*From - Month & Year*	November 1, 2018
DEQ Permit No.	101978	**DEQ File No./Facility ID**	24600	*To - Month & Year*	November 30, 2018
System Type	STEP system	**Population Served**	985	**County**	Marion

Operator Certification

Collection sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12347/II
Treatment sys. class	1	**Principal operator name (print)**	Alonso Limones	**Certification No. & grade**	12363/II

DATE		INFLUENT					EFFLUENT - *Identify outfall number (e.g. 001, 002) or sampling location:*														
		MGD			TSS		BOD			TSS			NUTRIENTS				CHLORINE		COLIFORM		
					Grab / Comp.		Grab / Composite			Grab / Composite			Grab / Composite						MPN / MF	MPN / MF	MPN / MF
		GPD																			
Month	Day	Flow		FARGO	Concentration	Loading	Concentration	Removal	Loading	Concentration	Removal	Loading	Total Phosphorous	Total Kjeldahl Nitrogen	Ammonia Nitrogen	Nitrate Nitrogen	Used	Total Residual	Total	Fecal	E.coli
					mg/L	lbs.	mg/L	%	lbs.	mg/L	%	lbs.	mg/L				lbs.	mg/L	CFU/100 ml		
11	1	0.054		0.040																	
11	2	0.048		0.042																	
11	3	0.051		0.040																	
11	4	0.050		0.041																	
11	5	0.052		0.038																	
11	6	0.051		0.034																	
11	7	0.049		0.036																	
11	8	0.050		0.036																	
11	9	0.047		0.036																	
11	10	0.049		0.034																	
11	11	0.049		0.034																	
11	12	0.050		0.033																	
11	13	0.051		0.033																	
11	14	0.050		0.037																	
11	15	0.049		0.044																	
11	16	0.051		0.045																	
11	17	0.050		0.043																	
11	18	0.050		0.035																	
11	19	0.049		0.034																	
11	20	0.049		0.042																	
11	21	0.050		0.042																	
11	22	0.051		0.034																	
11	23	0.053		0.036																	
11	24	0.050		0.033																	
11	25	0.050		0.033																	
11	26	0.050		0.031																	
11	27	0.055		0.042																	
11	28	0.055		0.043																	
11	29	0.052		0.042																	
11	30	0.062		0.042																	
TOTAL		1.527		1.135																	
DAILY MIN.		0.047		0.031																	
DAILY MAX.		0.062		0.045																	
WKLY. AVG. MAX.		0.054		0.039																	
MTHLY. AVG.		0.051		0.038																	
DAILY LIMITS		0.080		0.050																	
WKLY. LIMITS		0.562		0.351																	
MTHLY. LIMITS		2.433		1.521																	

I CERTIFY THAT I AM FAMILIAR WITH THE INFORMAITON CONTAINED IN THIS REPORT AND THAT TO THE BEST OF MY KNOWLEDGE SUCH INFORMAITON IS TURE, COMPLETE AND ACCURATE

X ______________________ Authorized Signature ______ Date

Alonso Limones
Name (print)

Notes: ______________________

Mail Original To: **Oregon DEQ, Salem Office**
4026 Fairview Industrial Dr.
Salem OR 97302

LAGOON AND POLISHING POND					RECLAIMED WATER Outfall ______		SEWER SYS. BYPASS			MAINTENANCE ACTIVITIES (CHECK OFF ACTIVITY UPON COMPLETION)							LOG Regarding breakddowns, bypassing, odors, complaints, etc.
Primary Depth		Secondary Depth		Perimeter Inspection	Quanity Irrigated	pH	Flow	Duration	Solids Transported to Other WWTF	Test Dosing Pumps/Alarms	Inspect Pump Screens	Check Pumps for Accurate Cycle	Inspect Monitoring Ports	Inspect & Maintain Dist. Mechanisms	Inspect Dosing Tank		
					In./Acr		Gal.	Hrs.									
																	TOTAL
																	DAILY MINIMUM
																	DAILY MAXIMUM
																	WEEKLY AVERAGE MAXIMUM
																	MONTHLY AVERAGE
																	DAILY LIMITS
																	WEEKLY LIMITS
																	MONTHLY LIMITS

APPENDIX C

Donald Municipal Code
SEWER USE ORDINANCE

there is now located or may in the future be located a public sanitary sewer of the city, is required at his or her own expense to install a STEP system and connect to the public sewer in accordance with the provisions of this chapter, within 90 days after date of official notice to do so.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

CONSTRUCTION AND CONNECTIONS; BUILDING SEWERS

§ 51.15 SEWER CONNECTION; APPLICATION; INSTALLATION; DEPOSIT AND FEE.

(A) *Connections by city crews.* All connections to sewer lines within the confines of public streets or city owned easements shall be made by city crews or contractors employed by the city.

(B) *Connection charge.* An application for sewer service where no connection previously existed, or an application for a change in service, size, or location shall be accompanied by a fee for each unit as defined in division (E) of this section.

(C) *Application for connection.* Applications for sewer connections shall be made to the City Manager with payment of the fee at the time of the application. A form shall be provided by the City Manager for this purpose.

(D) *Connections must be directly to sewer lines.* No sewer connection to premises may be installed or maintained unless the same is connected directly to the sewer line coming from the buildings on the premises. No connections may be made indirectly to cesspools or septic tanks. Parallel water and sewer lines shall be laid at least 10 feet apart horizontally. Where it is necessary for sewer and water lines to cross each other, the crossing shall be made at an angle of approximately 90 degrees and the sewer shall be located 3 feet or more below the water line. The Public Works Director may, at his or her discretion, allow minor variations of the foregoing if he or she finds that it is uneconomical or practically impossible to comply with these conditions. Before any backfilling is done in the trench for the sewer on the private property of one making a new connection to the sewer, the city's Public Works Director shall be notified. No backfilling shall take place until the Public Works Director or his or her designee shall have made an inspection. If the Public Works Director desires he or she may, at his or her discretion, require a test for leakage to be carried out under his or her direction and in his or her presence, and in that case the person installing the sewer shall make the test at no expense to the city. Upon completion of the test, any Ts or openings in the pipe shall be capped tightly and secured against back pressure. If the sewer is properly installed and the joints are tight, the Director shall give written approval of the same. If he or she does not approve it, he or she shall state the deficiencies in writing.

(E) *Sewer service connection charge.*

(1) An application for sewer service where no service previously existed, or an application for a change in service size or location, shall be accompanied by a service installation fee based upon the actual cost of labor, materials, and equipment used in making the service connection plus 25% for administrative costs.

(2) Upon application for sewer connection, the Public Works Director shall make an estimate of the costs of making the service connection and shall advise the applicant of the amount of the estimate and the applicant shall be required to deposit with the city cash in the amount of the estimate. When the deposit has been made, the Public Works Director shall order the connection. When the connection has been completed, the cost thereof shall be paid from the applicant's deposit. If the deposit is insufficient to pay the actual cost of labor, materials, and equipment used in making the service connection plus 25% for administrative overhead, the applicant shall be billed and shall pay for the difference. If the cost of the connection is less than the deposit, the excess shall be returned to the applicant.
(Ord. 107-97, passed 3-6-1997) Penalty, see § 10.99

§ 51.16 PERMIT REQUIRED.

(A) No unauthorized person shall uncover, make any connection with or opening into, use, alter, or disturb any public sewer or appurtenance. Only the city may tap and install public sewers or contract with others under the supervision of its Public Works Director. Applications for permits shall be made at the City Hall. Before the permit may be issued, the applicant must pay a connection fee. The connection fee shall be set by the City Council by resolution. When the connection to be made is more than 50 feet from the street sewer, the applicant shall also pay the estimated cost of that part of the installation which is more than 50 feet from the street sewer. After the appropriate fees have been paid, the city shall install a connection from the adjacent street sewer to the applicant's property. However, in cases where the connection made is more than 50 feet from the street sewer, sewer service shall not be provided to the applicant's property until the applicant has paid the amounts, if any, which the actual cost of installation over 50 feet exceeds the estimated costs previously paid.

(B) An easement to construct, operate, and maintain the system will need to be given to the city prior to installation. It shall be the responsibility of the property owner to keep clean and maintain the building sewer from the building to the connection with the public sewer. Each permit shall be valid for 60 days from the date of issuance. Final payment for the installation shall be made 30 days from the date of billing. Nothing in §§ 51.16 - 51.18 of this code shall prohibit the City Council from authorizing improvement districts where a city hired contractor installs the public sewer where those sewers are assessed against the adjoining property.
(Ord. 36, passed 4-3-1985; Am. Ord. 61, passed 4-4-1990) Penalty, see § 10.99
Cross-reference:
Financing Public Improvements, see Chapter 152

§ 51.17 PERMIT CLASSES.

(A) There shall be 3 classes of building sewer permits:

(1) For residential;

(2) For commercial service; and

(3) For service to establishments producing industrial wastes.

(B) In any case, the applicant shall make application on a special form furnished by the city. The permit application shall be supplemented by site plan or other information considered pertinent in the judgment of the Public Works Director.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.18 FEES.

(A) All permit fees, installation charges, connection fees and user rates for the city shall be reviewed in June of each year by the City Council and set by Council resolution, which rates and charges shall reflect the actual cost to the city to provide sewer service. The City Council may raise, lower or maintain sewer rates and charges in whole or in part except that user rates for city sewer service shall be adjusted annually to reflect any increase in the Consumer Price Index (Portland-Salem CPI) measured by the United States Bureau of Labor and Statistics.

(B) All payments for new sewer connections received by the city shall be deposited and credited to the sewer reserve account for sewer service as provided in division (D) below.

(C) Except for increases in user rates required by an increase in the Consumer Price Index, the City Council may raise, lower or maintain sewer rates and charges in whole or in part. If the City Council decides to raise any part of the city's sewer rates and charges (except for increases to reflect increases in the CPI) it shall hold a public hearing on the resolution prior to its adoption. At least one week prior to the hearing, the City Recorder shall publish notice of such hearing in a newspaper of general circulation in the city and shall post notice of such hearing at City Hall and in two other public places. Nothing in this section shall prohibit the City Council from reviewing or amending city sewer rates and charges at such other times as the Council deems appropriate.

(D) In establishing rates and charges for the provision of sewer service in the city, the Council may include a fee to fund a reserve account for sewer service to fund repairs to components of the city sewer system which are unscheduled or obsolete. The City Manager shall establish a fund or account within the city budget for the sewer reserve fund. Sewer reserve fund monies received by the city shall be allocated to the fund in amounts established by resolution of the City Council. Except as otherwise

provided or allowed by state law, the utility funds or accounts shall be used solely for the purposes described in this section. Sewer reserve funds shall be billed and collected with and as part of a customer's sewer bill.
(Ord. 36, passed 4-3-1985; Am. Ord. 158-2014, passed 12-9-2014)

§ 51.19 COSTS AND EXPENSES.

All costs and expenses incident to the installation and connection of the building sewer to the public sewer shall be borne by the owner. All costs of extending the public sewers to the applicant's building drain or building sewer shall be borne by the applicant. The costs shall include engineering, construction management, excavation, installation, materials, backfill, street repair, and overhead. The applicant shall place on deposit the necessary funds as estimated by the city for that extension of the public sewer.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.20 SEPARATE BUILDING SEWER.

A separate and independent building sewer shall be provided for and from every building to a STEP system. Where required, 2 or more buildings on 1 tax lot under 1 ownership can share a single STEP system that is approved by the city and appropriately sized. Each separate and independent building shall pay the applicable connection fee and monthly charges.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.21 CONFORMANCE TO CONSTRUCTION STANDARDS AND REGULATIONS.

The size, slope, alignment, materials of construction of a building sewer, and the methods to be used in excavating, placing of pipe, jointing, testing, backfilling the trench, and the connection to the public sewer (STEP system), shall all conform to the requirements of any city building code, the State Plumbing Code, and the administrative rules of the Department of Consumer and Business Services, and other applicable rules, regulations, and resolutions of the city, as they presently exist or may hereinafter be amended.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.22 BUILDING DRAIN ELEVATION; LIFTS.

In all buildings in which any building drain is too low to permit gravity flow to the septic tank, sanitary sewage carried by that building drain shall be lifted by an approved means and discharged to the building drain or sewer prior to the septic tank.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.23 CLEAR WATER CONNECTION PROHIBITED.

No person shall make connection of roof downspouts, exterior foundation drains, areaway drains, or other sources of surface runoff or ground water to a building sewer or drain which in turn is connected directly or indirectly to a public sanitary sewer.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.24 NOTICE FOR INSTALLATION.

The applicant for the STEP system construction shall notify the Public Works Director at least 2 weeks prior to the need for that sewer in order for the city to arrange for the installation.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.25 RESTORATION.

Streets, sidewalks, parkways, and other public property disturbed in the course of the STEP system installation shall be restored in a manner satisfactory to the city and at the expense of the owner.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

Donald - Public Works

§ 51.26 CONFORMANCE TO CITY PLANS AND SPECIFICATIONS.

The materials, excavation, and installation of the STEP system by the city or its authorized personnel shall be in accordance with the plans and specifications of the city. Individual electrical and pump needs will have to be determined for each service connection.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

USE OF PUBLIC SEWERS

§ 51.40 DISCHARGE OF CLEAR WATER.

(A) No person shall discharge or cause to be discharged any storm water, surface water, ground water, roof runoff, subsurface drainage, uncontaminated cooling water, or unpolluted industrial process waters to any sanitary sewer.

(B) Storm water and all other unpolluted drainage shall be discharged to sewers as are specifically designated as storm sewers, or to a natural outlet approved by the Public Works Director. Industrial cooling water or unpolluted process waters may be discharged, on approval of the Public Works Director and the Department of Environmental Quality, to a storm sewer or natural outlet.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.41 PROHIBITED DISCHARGES.

No person shall discharge or cause to be discharged any of the following described waters or wastes to any sewer defined in § 51.01 of this code:

(A) Any gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid, or gas;

(B) Any waters or wastes containing toxic or poisonous solids, liquids, or gases in sufficient quantity, either singularly or by interaction with other wastes, to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, create a public nuisance, or create any hazard in the receiving waters of the sewage treatment plant, including but not limited to cyanides in excess of 2 mg/l as CN in the wastes as discharged to the public sewer;

(C) Any water or wastes having a pH lower than 5.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works;

(D) Solid or viscous substances in quantities or of a size capable of causing obstruction to the flow in sewers, or other interference with the proper operation of the sewage works, such as, but not limited

to, ashes, cinders, sand, mud, straw, plastics, wood, unground garbage, whole blood, paunch manure, hair and fleshings, entrails, and paper dishes, cups, milk containers, and the like, either whole or ground by garbage grinders; or

(E) Any substance prohibited by the Department of Environmental Quality of the state. (Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.42 RESTRICTED DISCHARGES.

(A) No person shall discharge or cause to be discharged into a sewer, as described in § 51.01 hereof, the following described substances, materials, waters, or wastes if it appears likely in the opinion of the Public Works Director or the Department of Environmental Quality, that those wastes can harm either the sewers, sewage treatment process, or equipment, have an adverse effect on the irrigation field, or can otherwise endanger life, limb, public property, or constitute a nuisance. In forming his or her opinion as to the acceptability of these wastes, the Public Works Director will give consideration to such factors as the quantities of subject wastes in relation to flows and velocities in the sewers, materials of construction of the sewers, nature of the sewage treatment process, capacity of the sewage treatment plant, degree of treatability of wastes in the sewage treatment plant, and other pertinent factors.

(B) Substances absolutely prohibited are:

(1) Any liquid or vapor having a temperature higher than 150°F or 65°C;

(2) Any water or waste containing fats, wax, grease, or oils, whether emulsified or not, in excess of 100 mg/l or containing substances which may solidify or become viscous at temperatures between 32°F and 150°F or between 0°C and 65°C;

(3) Any garbage that has not been properly shredded. The installation and operation of any garbage grinder equipped with a motor of 3/4 horsepower (0.76 hp metric) or greater shall be subject to the review and approval of the Public Works Director;

(4) Any waters or wastes containing strong acid iron pickling wastes, or concentrated plating solutions whether neutralized or not;

(5) Any ground or unground fruit peelings and cores from canneries and packing plants; cull fruits and vegetables; fruit and vegetable pits and seeds;

(6) Any waters or wastes containing iron, chromium, copper, zinc, and similar objectionable or toxic substances; or wastes exerting an excessive chlorine requirement over 5 p.p.m. to such a degree that any such material received in the composite sewage at the sewage treatment works exceeds the limits established by the Public Works Director for those materials;

(7) Any waters or wastes containing phenols or other taste or odor producing substances, in concentrations exceeding limits which may be established by the Public Works Director as necessary, after treatment of the composite sewage, to meet the requirements of the state, federal, or other public agencies or jurisdiction for discharge to irrigation lands;

(8) Any radioactive wastes or isotopes of a half-life or concentration as may exceed limits established by the Public Works Director in compliance with applicable state or federal regulations;

(9) Any waters or wastes having a pH in excess of 9.5;

(10) Materials which exert or cause:

(a) Unusual concentrations of inert solids (such as, but not limited to, Fullers earth, lime slurries, and lime residues) or of dissolved solids (such as, but not limited to, sodium sulfate);

(b) Excessive discoloration (such as, but not limited to, dye wastes and vegetable tanning solutions);

(c) Unusual BOD, chemical oxygen demand, or chlorine requirements in quantities so as to constitute a significant load on the sewage treatment works; or

(d) Unusual volume of flow or concentration of wastes constituting slugs as defined herein.

(11) Waters or wastes containing substances which are not amenable to treatment or reduction by the sewage treatment processes employed, or are amenable to treatment only to such a degree that the sewage treatment plant effluent cannot meet the requirements of other agencies having jurisdiction over discharge to the irrigation lands.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.43 RIGHT TO REJECT WASTE OR REQUIRE PRETREATMENT.

(A) If any waters or wastes are discharged, or are proposed to be discharged into the sewers, as defined in § 51.01 hereof, which waters contain the substances or possess the characteristics enumerated in § 51.42 of this code, and which, in the judgment of the Public Works Director, may have a deleterious effect upon the sewage works, processes, equipment, or lands, or which otherwise create a hazard to life or constitute a public nuisance, the Public Works Director may:

(1) Reject the wastes;

(2) Require pretreatment to an acceptable condition for discharge to the public sewers;

(3) Require control over the quantities and rates of discharge; and

(4) Require additional payment to cover the added cost of handling and treating the wastes not covered by existing taxes or sewer charges under § 51.62 of this code.

(B) If the Public Works Director permits the pretreatment or equalization of waste flows, the design and installation of the plants and equipment shall be subject to the requirements of all applicable codes, ordinances, and laws.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.44 PRETREATMENT FACILITIES; OWNER RESPONSIBILITY.

Where preliminary treatment or flow-equalizing facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his or her expense.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.45 CONTROL MANHOLES; SAMPLING AND MEASUREMENT.

(A) When required by the Public Works Director, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole together with the necessary meters and other appurtenances in the building sewer to facilitate observation, sampling, and measurement of the wastes. The manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the Public Works Director. The manhole shall be installed by the owner at his or her expense, and shall be maintained by him or her so as to be safe and accessible at all times. The flow measurement device can be a Parshall flume, weir, venturi nozzle, magnetic flow meter, or any other type of device providing accurate and continuous flow indication. Pump timers or other indirect measurement devices will not be acceptable. The flow meter shall be suitable for indicating and totaling the flow in millions of gallons per day through the device, provided above, with an error not exceeding plus or minus 2%. The instrument shall be equipped with a set of electrical contacts arranged to momentarily close a circuit to energize a process timer and sampling device for every fixed quantity of flow. This quantity should be selected so as to ensure a minimum of 12 samples per operating day. Other control variations will be acceptable if it can be demonstrated that the sampling procedure will result in a waste sample which is proportional to the waste flow.

(B) The length of operation of the sampling device shall be dependent on the type of sampling arrangement used, but in no case shall the daily collected sample be less than 2 quarts in volume. The method of sampling used can be continuous pumping past a solenoid-operated valve, direct pumping into sample container, continuous pumping past a sampler dipper calibrated to remove a constant sample, by a proportional dipper sampler operating directly in the waste flow, or by any other approved means. All samples must be continuously refrigerated at a temperature of 39°F, plus or minus 5°. The flow measurement and sampling station shall be located and constructed in a manner acceptable to the city.

Complete plans on all phases of the proposed installation, including all equipment proposed for use, shall be submitted to the city for approval prior to construction. The person discharging the waste shall keep flow records as required by the city and shall provide qualified personnel to properly maintain and operate the facilities.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.46 SAMPLING AND ANALYSIS STANDARDS.

All measurements, tests, and analysis of the characteristics of waters and wastes to which reference is made in this chapter shall be determined in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association, and shall be determined at the control manhole provided, or upon suitable samples taken at the control manhole. Sampling shall be carried out by customarily accepted methods to reflect the effect of constituents upon the sewage works and to determine the existence of hazards to life, limb, and property. The particular analysis involved will determine whether a 24-hour composite of all outfalls of a premise is appropriate or whether a grab sample or samples should be taken. Normally, but not always, BOD and suspended solids analysis are obtained from 24-hour composites of all outfalls, whereas pH is determined from periodic grab samples.
(Ord. 36, passed 4-3-1985) Penalty, see § 10.99

§ 51.47 ADMISSION AND CONTROL OF INDUSTRIAL WASTES.

(A) This section shall apply to industrial wastes as previously defined, and further to wastes from industries which exhibit strengths or characteristics of BOD in excess of or equal to 200 milligrams per liter (mg/l) or suspended solids in excess of or equal to 150 mg/l based upon a composite sample of the waste. The composite sample shall mean not less than 12 individual samples taken at not less than 30-minute intervals for a period of not less than 6 hours.

(B) Review and acceptance of the city shall be obtained prior to the discharge into the public sewers of any waste having BOD greater than 200 milligrams per liter or a suspended solids content greater than 150 milligrams per liter.

(C) Where required, in the opinion of the Public Works Director, to modify or eliminate wastes that are harmful to the structures, processes, or operation of the sewage treatment works, the person shall provide at his or her expense those preliminary treatment or processing facilities as may be determined necessary to render his or her waste acceptable for admission to the public sewers.

(D) Any industry discharging wastes from a canning, freezing, or food-packing operation shall not be allowed.