

**MOULTON NIGUEL WATER DISTRICT
RULES AND REGULATIONS
FOR
RECYCLED WATER**

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RECYCLED WATER

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SECTION 1

INTRODUCTION AND PURPOSE

1.1 INTRODUCTION

The Moulton Niguel Water District (District) serves recycled water throughout much of its service area via its recycled water distribution system. The District is a Member Agency of the South Orange County Wastewater Authority (SOCWA), which among other functions, reports to the San Diego Regional Water Quality Control Board (SDRWQCB) on recycled water use within its boundaries. SOCWA's goals and objectives relative to recycled water production and use are outlined in SDRWQCB Order 97-52, "Waste Discharge and Water Recycling Requirements for the Production and Purveyance of Recycled Water by Member Agencies of the South Orange County Reclamation Authority, Orange County."

Order 97-52 requires that SOCWA and/or its member agencies establish and enforce rules and regulations governing the design, construction and use of recycled water distribution and disposal systems by its customers. One of the purposes of this document is to establish the rules and regulations applicable to the use of recycled water within the Moulton Niguel Water District, in conformance with the requirements of Order 97-52.

1.2 PURPOSE

These Rules and Regulations have several purposes:

1. Assure that recycled water use in the Moulton Niguel Water District conforms with Order 97-52.
2. Establish technical specifications for on-site facilities to be constructed or provided by the customer.
3. Establish a process for acquisition and maintenance of a Recycled Water Use Permit.
4. Outline various State regulations pertaining to recycled water use.

1.3 RELATIONSHIP OF MNWD TO SOCWA

As discussed, MNWD is a member agency of SOCWA, and is covered under Order 97-52 through SOCWA. MNWD is responsible for all compliance reporting to SOCWA, and SOCWA is responsible for all reporting to the San Diego Regional Water Quality Control Board. MNWD is responsible for issuing Use Permits within the District, as well as ensuring that all customers conform with the requirements of these Rules and Regulations. These Rules and Regulations supercede rules and regulations established by SOCWA for its service area.

MNWD Policy on Recycled Water Use

On May 16, 1996 the District's Board of Directors adopted Resolution 96-8, "Resolution of the Board of Directors of the Moulton Niguel Water District Establishing Mandatory and Related Reclaimed Water Use Rules and Regulations." This Resolution, presented in Appendix A presents the District's Policy on recycled water use. Among the provisions of this Resolution is the requirement for a surcharge equal to fifty percent (%) of the potable water rate if recycled water is available to a prospective customer and on-site conversion or retrofit is not completed within a stipulated time period.

SECTION 2

DEFINITIONS

The following words and phrases are found in various locations of these Rules and Regulations. Their intent and meaning shall be interpreted as follows:

air-gap separation: a physical break between a supply pipe and a receiving vessel. The air gap shall be at least double the diameter of the supply pipe, measured vertically above the top rim of the vessel, and in no case less than one inch.

applicant: an owner, developer, builder, engineer, or authorized representative, firm, corporation, association, or agency that applies for recycled water service under the terms of the Rules and Regulations. A successful applicant becomes a recycled water customer.

application rate: the rate at which water is applied to an irrigation or construction area, expressed in inches per day or gallons per minute per acre.

approved backflow prevention assembly: a device installed to protect the potable water supply from contamination; this device shall be approved by the DHS and the District in conformance with applicable portions of Title 17 of the California Code of Regulations (Title 17).

approved use: an authorized use of recycled water in a manner, and for a purpose, specifically designated in a Use Permit issued by the District and in compliance with any and all applicable SOCWA and regulatory agency requirements.

ANSI: American National Standards Institute

ASTM: American Society for Testing and Materials.

AWWA: American Water Works Association.

AWWA Guidelines: AWWA's *Guidelines for Distribution of Non-potable Water*, California-Nevada Section, latest edition, or *Guidelines for the Onsite Retrofit for Facilities Using Disinfected Tertiary Recycled Water*, latest edition.

AWWA Standards: AWWA's *Standards for Construction Materials*, latest edition.

Board: Board of Directors of the Moulton Niguel Water District.

commercial use: water used for toilets, urinals, decorative fountains, cooling towers, and other related uses.

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construction use: an approved use of recycled water to support construction activities such as soil compaction and dust control during grading.

contractor: the person(s), firm, or corporation entering into a contract with the District, owner, or customer for the performance of work on all or any portion of facilities subject to the Rules and Regulations.

conversion: changing onsite supply from potable water to recycled water in cases that sites were designed and installed to use recycled water. (see also "retrofit").

County: County of Orange, State of California.

cross connection: any unprotected actual or potential connection between a potable water system and any source or system containing unapproved water or a substance that is not or cannot be approved safe, wholesome, and potable; by-pass arrangements, jumper connections, removable sections, swivel or change-over devices and other devices through which backflow could occur, shall be considered to be cross connections; cross connections shall be as defined in Title 17, California Code of Regulations.

customer: any person, group, firm, partnership, corporation, association or agency accepting recycled water from the District's recycled water facilities for use in accordance with the Rules and Regulations.

design area: a site, with well-defined boundaries, proposed to receive recycled water for an approved use as delineated in an application for a Use Permit.

design consultant: any person or firm registered with the State as an engineer or landscape architect to provide site layout, landscaping, or irrigation system design services.

direct beneficial use: the use of recycled water that has been transported from the point of production to the point of use without an intervening discharge to waters of the State.

direct overspray: any discharge of water directly onto areas other than that for which the application of recycled water is approved.

discharge: any release or distribution of recycled water to a use area or disposal site/mechanism (outfall, live stream discharge, municipal sewage system); all discharges of recycled water must be approved by the regulatory agencies.

Discharge Permit: a permit issued by the San Diego Regional Water Quality Control Board (SDRWQCB) for the discharge of recycled water.

District: The Moulton Niguel Water District.

DHS: State of California Department of Health Services.

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effluent: treated wastewater discharged from a water recycling plant.

general public: any person(s) at large who may come in contact with facilities and/or areas where recycled water is approved for use.

gpm: gallons per minute.

HGL: hydraulic grade line.

industrial use: water used for industrial processes such as cooling, flushing, or construction, and other related uses.

infiltration rate: the rate at which soil will accept water without overland flow, expressed in inches per hour.

inspection and testing: District will perform regularly scheduled onsite visits with operational testing accompanied by customer representative. The inspection and testing schedule will be determined by the District. In no circumstance will the schedule be longer than every four years.

inspector: any person(s) authorized by the District to perform inspection of either onsite or offsite facilities prior to construction, during construction, after construction and during operation.

installer: a person(s) or firm performing work necessary to construct or install equipment or facilities subject to the Rules and Regulations.

landscape impoundment: a body of recycled water, which is used for aesthetic enjoyment, landscape irrigation or which otherwise, that serves a function not intended to include public contact.

landscape irrigation: use of recycled water for the propagation and maintenance of trees, shrubs, groundcover, and turf.

MGD: million gallons per day.

non-potable water: water that is not intended for human consumption.

offsite facilities: existing or proposed facilities under the control of the District, from the source of supply to the point of connection with the customer's onsite facilities, up to and including the District's meter and meter box.

offsite supervisor: a qualified person designated by the District to be responsible for the safe and efficient operation of the District's recycled water distribution system; this person shall be knowledgeable in the construction and operation of recycled water distribution systems and in the application of State and local guidelines, criteria, standards, and regulations governing the use of recycled water.

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onsite facilities: existing or proposed facilities within property under the control of the customer or owner, normally downstream of the District's meter tailpiece.

Onsite supervisor: a qualified person designated by a recycled water customer and approved by the District to be responsible for the safe and efficient operation of the customer's recycled water system; this person shall be knowledgeable in the construction and operation of recycled water and irrigation systems and in the application of State and local guidelines, criteria, standards and regulations governing the use of recycled water; this person shall be trained in cross-connection control to the satisfaction of the District.

Operations personnel: any employee of a customer, whether permanent or temporary, or any contracted worker whose regular or assigned work involves the supervision, operation or maintenance of equipment on any portion of onsite facilities using recycled water.

Operator: any person(s) or firm, who by entering into an agreement with a customer is responsible for operating onsite facilities.

OCHCA: Orange County Health Care Agency, Environmental Health Division.

Owner: any holder of legal title, contract purchaser, or lessee under a lease with an unexpired term of more than one (1) year, of property for which recycled water service has been requested or established.

Pantone™: color standard system.

person: any public or private individual, partnership, corporation, agency, or association including homeowner's association.

Plans: the plans, working drawings, detail drawings, specifications, profiles, typical cross sections and supplemental drawings or reproductions thereof that shows locations, character, dimensions or details of the work.

POC: point of connection.

Ponding: retention of recycled water on the surface of the ground or other natural or manmade surface that exceeds the surface infiltration rate and that is unable to runoff due to gravity such that a hazard or potential hazard to the public health results.

Potable water: water that is pure and wholesome, that will not endanger the health, safety and welfare of human beings, and conforms to the latest edition of the United States Public Health Service Drinking Water Standards, the California Safe Drinking Water Act, or other applicable standards.

PPC: positive pressure check.

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Producer: an agency that produces recycled water.

psi: pounds per square inch.

Purple Book: an aggregate of California health laws related to recycled water, including excerpts from the Health and Safety Codes, Water Code and Titles 22 and 17 of the California Code of Regulations.

PVC: polyvinyl chloride.

recycled water system: district facilities that produce, convey, supply, store, and intercept recycled water.

recycled water: as defined in *Water Recycling Criteria*, water that as a result of treatment of wastewater is suitable for direct beneficial use or a controlled use that otherwise would not occur. The treatment of wastewater is accomplished in accordance with the criteria set forth in the code. The SOCWA Discharge Permit, Order No. 97-52, regulates the utilization of recycled water.

recreational impoundment: a body of recycled water used for recreational activities including, but not limited to, fishing, boating, and/or swimming; allowable uses will depend on treatment level of the recycled water.

reduced pressure principle backflow prevention assembly: a backflow prevention device incorporating not less than two check valves, an automatically-operated differential relief valve located between the two check valves, a completely closing shut-off valve on each side of the check valve assembly, equipped with test cocks for testing.

regulatory agencies: those public agencies legally constituted to protect the public health and water quality and having regulatory authority over the District, such as SOCWA, DHS, SDRWQCB, and OCHCA, and others as may be appropriate.

Regulations: these "Rules and Regulations for Recycled Water," prepared pursuant to the SOCWA Discharge Permit and all rules and regulations of SOCWA and other local or State agency or other regulations referred to and incorporated herein.

retrofit: modifying onsite facilities that were originally designed to accommodate potable water use so that they now accommodate recycled water use in compliance with the Regulations (see also "conversion").

runoff: flow of water along the surface of the ground or other natural or man-made surface, including but not limited to, pedestrian walkways, streets, playground surfaces, and grassy slopes.

secondary effluent: wastewater that has been treated to a minimum level of effluent quality based on rules and regulations of the Environmental Protection Agency and defined with respect to biochemical oxygen demand, suspended solids, fecal coliform bacteria, and pH.

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service: the furnishing of recycled water to a customer through a metered connection to the onsite facilities.

service connection: the facilities between the recycled water distribution system and the customer's recycled water meter.

SDRWQCB: San Diego Regional Water Quality Control Board.

SOCWA: South Orange County Wastewater Authority.

SOCWA discharge permit: SDRWQCB Order No. 97-52 or its successor orders.

standard specifications: specifications adopted by the District for construction of potable water, sewer, and recycled water facilities, available on the Internet at www.mnwd.com "*Standard Specifications and Plans*."

State: State of California.

tenant: any person, group, firm, partnership, corporation, association, or agency that pays rent to occupy and use land or a building.

tertiary effluent: secondary effluent that has been disinfected and filtered consistent with provisions in *Water Recycling Criteria*.

terms: all terms relating to matter of opinion or judgment, such as in regards to approvals, requirements, directions, or acceptances, denote the option or judgments of the District and SOCWA.

transfer: the conveyance or movement of recycled water from one agency to another agency. Transfer includes the conveyance of control or responsibility of a volume of recycled water stored in a storage facility commonly owned or controlled by more than one agency.

treated wastewater: wastewater treated in accordance with the requirements of "*Water Recycling Criteria*."

UL: Underwriter's Laboratory.

UPC: Uniform Plumbing Code.

use area: the specific area contained within a use site, designated to be served with recycled water through onsite facilities.

use site: the specific property, containing one or more use areas, designated by the legally recorded tract and lot or parcel map description.

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Use Permit: a permit issued by the District to a recycled water service applicant after the satisfactory completion of the service application procedures set forth in the Regulations; this permit constitutes a service agreement that legally binds the customer/customer to all conditions in the Regulations and to any and all applicable regulatory agency requirements.

violation: noncompliance with any condition or conditions of the Rules and Regulations and/or a Use Permit by any person, action or occurrence, whether willfully or by accident.

water reclamation: the renovation of wastewater to produce a product that is approved for specific beneficial uses by the appropriate regulatory agency.

windblown spray: dispersed, airborne recycled water capable of being transmitted through the air by natural or manmade wind to locations other than that for which the direct application of recycled water is approved.

work: the entire improvement proposed to be constructed pursuant to a legal agreement and consistent with the Rules and Regulations.

SECTION 3

PERMITTING PROCESS AND TIMELINE

3.1 PERMITTING PROCESS

The permitting process typically includes the following principal steps:

- Preliminary Determination Notice
- Notice of Objection (if necessary)
- Final Determination Notice
- Application for a Use Permit
- Approval of the Applicant's Plans
- Construction

Each of these principal steps is discussed in the following sections. A more detailed listing of each step of the process from application through final approval is shown in Appendix 1, Checklist/Action Request form for Obtaining Recycled Water Service.

3.1.1 Preliminary Determination Notice

When recycled water is available for a prospective customer, the District will mail a Notice of Determination to the prospective customer. A sample Preliminary Determination Notice is presented in Appendix 2. The Notice of Determination will include as a minimum: descriptive information about the MNWD recycled water system, indication of specific customer service(s) to which the Determination applies, customer responsibilities under the Rules and Regulations, current recycled water pricing information, descriptive information about on-site facilities requirement necessitated by initial use or conversion to recycled water, the opportunity for objection to the Determination, and a proposed date for the subsequent Final Determination Notice. The date of the Preliminary Determination Notice shall begin a time period of thirty (30) consecutive calendar days during which the prospective customer may file an objection to the Preliminary Determination Notice or any information presented in it.

3.1.2 Objection to Preliminary Determination Notice

The prospective customer(s) may file a notice of objection with the District within thirty - (30) consecutive calendar days of the date of any preliminary determination notice to the prospective customer(s), and may request reconsideration of the determination or modification of the proposed conditions or schedule for conversion. The objection must be in writing and specify the reasons for the objection. The preliminary determination shall become final if the prospective customer(s) does not file a timely objection. Staff shall review the objection and shall confirm, modify, postpone or abandon the preliminary determination.

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Upon issuance of a final determination by staff, the prospective customer(s) may appeal the determination to the General Manager of the District. The District shall issue a waiver to the prospective customer(s) where its objection or appeal is successful.

3.1.3 Final Determination Notice

The District shall make final determination regarding recycled water service by written notice to the prospective customer(s). A sample Final Determination Notice is presented in Appendix 3. Such notice shall include as a minimum: reference to a predecessor preliminary determination notice, indication of specific customer service(s) to be affected by the determination, and the requirement of and timing for onsite facility construction. Upon receipt of final determination that a property shall be served with recycled water, the prospective customer(s), owner, or applicant shall obtain a Use Permit. The date of the final determination notice shall begin a 180 consecutive calendar day time period during which the prospective customer(s) must obtain the Use Permit, complete onsite facility construction and become ready to receive recycled water service.

3.2 USE PERMIT

3.2.1 Application Process

The steps for obtaining recycled water service are listed in Appendix 4. The District shall provide information regarding HGL and pressure zone, water service and meter sizes, locations, use site number, hydrologic subarea, and recycled water quality. A prospective customer must submit to the District an application for recycled water service using the form presented in Appendix 5. The applicant shall agree to comply with the Rules and Regulations by signing the application form.

The following items are to be included in an application package:

- Completed application form
- Required drawing(s)
- Required fees and deposits – due prior to approval

The District shall review the material and respond within thirty - (30) consecutive calendar days of receipt of a completed application package. The District may request additional information it deems necessary. The District shall determine if the property to be served is in a suitable area for recycled water use, and if the necessary quantity and quality of recycled water can be made available to the applicant.

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The District will submit the following types of recycled water projects for the California Department of Health Services review and approval prior to their construction:

1. New recycled water infrastructure projects that are co-located adjacent to drinking water facilities (i.e. reservoirs, main trunk lines, etc.)
2. Recycled water treatment plant upgrades
3. Retrofit recycled water use sites, and
4. New recycled water use sites

The use site number (provided by the District) and customer account number shall be the Use Permit numbers for general reference purposes.

3.2.2 Requirements

The customer who has obtained a Use Permit shall adhere to requirements prescribed by the Rules and Regulations and to additional and future requirements prescribed by the District or governing agencies pertaining to recycled water service.

3.2.3 Permit Force

The Use Permit shall come into force after the onsite project has begun construction and is being inspected by the involved regulatory agencies. The Use Permit shall be the binding agreement between the District and the customer.

3.2.4 Permit Availability

A copy of the current Use Permit must be on file at the customer's office and available for review at all times.

3.2.5 Permit Life

The Use Permit shall stay in effect indefinitely, but may be temporarily or permanently revoked if:

- A change of customer occurs and the customer has not notified the District via the Recycled Water Service Application form Appendix 5 of the impending change thirty (30) consecutive calendar days prior to change
- A change of operator occurs and the customer has not notified the District via the Recycled Water Use Permit form Appendix 6 of the pending change thirty (30) consecutive calendar days prior to the change
- A change of recycled water use occurs inconsistent with the Use Permit
- A violation occurs and results in termination of service

A new completed Recycled Water Service Application form, refer to Appendix 5, must be submitted to the District to reinstate a Use Permit that has been cancelled.

3.3 DESIGN AND CONSTRUCTION SUBMITTALS AND RECORDS

3.3.1 Facility Layout Documents

A location drawing shall be submitted by the customer to the District and approved by the District prior to commencing any installation of facilities. This drawing shall indicate the exact boundaries of the site of the proposed recycled water use at a scale that includes the site and the nearest paved surface street containing a recycled water distribution main.

A materials list shall be submitted by the operator to the District and approved by the District prior to commencing any installation of facilities. This list shall include the following:

Transmission Facilities - The diameter, approximate length, and construction material of all onsite recycled water lines, whether flexible hose or rigid pipe.

Storage Facilities - The estimated number and locations of fixed storage tanks or ponds and the approximate volume of each.

Recycled Water Volume – The maximum and average amounts in gpm that will be drawn from the District's recycled water distribution system, and the hours of operation.

3.3.2 Onsite Irrigation Systems

- System Design Documents

The following information shall be submitted to and approved by the District prior to commencing any construction:

Plans and Specifications - One copy of the (20-scale) plans, 24" x 36" in size, details and specifications, signed by the design consultant, for the construction of the use area and onsite irrigation system, shall be submitted to the District for review and approval.

Plans shall include a vicinity index map indexed site map for each sheet and shall include major street crossings and point of connection and street names. Title sheet shall show legal description. Plans shall include irrigation system design, notes, appurtenance details, and legends without separate attachments. The items required to be shown on the plans are listed in Provision 1.

Standard Notes - As a minimum, standard notes are to be listed on the plans. A copy of current standard notes is available as Provision 1.

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- Final Record Drawings and Documents

Final Record drawings shall be submitted to and approved by the District before a request for regular service start-up is made. The following shall apply:

Recording Changes - All changes in the work constituting departures from the original design drawings, including changes in both pressure and non-pressure lines, number or location of spray heads, bubbler or drip systems, buildings or hardscape, shall be accurately recorded on one set of drawings. At the end of each working day, it shall be mandatory that the contractor record all work accomplished for that day on the set of drawings in red ink. The final set of record drawings shall be professionally drafted, to the satisfaction of the District, in ink on Mylar for future photo processing and reproduction. The red line copy shall be available to District upon request.

Dimensioning - All dimensions shall be taken from two permanent points of reference such as buildings, monuments, sidewalks, curbs or hardscape.

Record Drawings - For the purpose of reference, record drawings shall be available at all times.

Control Charts - Shall be prepared and submitted with the record drawings, and approved by the District before a request for final inspection is made. The chart submittals shall include the following:

Chart Requirement - 60# bond paper 11" x 16" color control charts, one set for each point of connection. 60# bond paper 11" x 16" color control charts, hermetically sealed in a 6-mil-thick laminated pouch, one set for each point of connection.

Chart Scale - Each chart shall be a reduced record drawing of each sheet of all irrigation systems. The final controller sequence shall be clearly legible, as determined by the District, at the reduction chosen.

Chart Coloring - Each chart shall use a different color to show the area of coverage for each valve station/lateral system shown.

Specific Call-Outs - The locations of the following items shall be shown:

- Points of connection
- Routing of irrigation supply lines and all related appurtenances
- Gate valves
- Sprinkler control valves
- Quick coupling valves
- Routing of control wires
- Irrigation controllers
- Remote control valves

- - Irrigation-related appurtenances
- Establishing a Temporary Service Connection

Prior to regular service, a temporary service connection using either potable or recycled water may be used to supply water to onsite facilities to permit the testing of all or a portion of the facilities during installation. The temporary service connection is valid for 180 consecutive calendar days. The inspector shall be notified at least 48 hours in advance of such intended use of recycled or potable water.

No recycled or potable water use from offsite to onsite facilities is allowed for sites being designed for potable or recycled water until all water meters, meter boxes, and backflow prevention assemblies have been installed, tested, and inspected. Onsite cross connection testing must be completed to the satisfaction of the District, prior to any meter releases. Contact the District to energize the water service angle stop to facilitate the testing of the backflow assemblies for testing purposes only. Backflow assembly test results are to be submitted to the recycled water inspector. Special considerations can only be made by Director of Engineering.

3.4 REPORTING

Certain reporting or notification between the parties involved with the use of recycled water may be conducted in person or by telephone.

The District must report any cross connection incident to the California Department of Health Services (DHS) within 24 hours of the incident.

The customer shall report any violation of the Rules and Regulations and/or noncompliance that may endanger public health or the environment. Any such information shall be provided orally to the District immediately after the customer becomes aware of the circumstances. A written submission shall also be provided within five days of the time the customer becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; photographs documenting the non-compliance; the period of noncompliance, including exact dates and times; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The District, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within twenty-four (24) hours. The following occurrences(s) must be reported to the District immediately:

- Any situation that may endanger the public's health or the environment
- Discovery of a cross connection of a recycled water system with a potable water system must be reported immediately to the District
- More than minimum unplanned or uncontrolled discharge of recycled water resulting from water line breaks, malfunctioning control system, or any other circumstances

- More than minimum discharge of recycled water outside of the approved use area due to onsite line breaks, runoff, direct spray, overspray or windblown spray, or outside the regular hours of operation for any reason
- Discharge of recycled water at a construction site in an unapproved manner or in an unapproved area

3.5 UPGRADES AND ALTERATIONS TO ONSITE IRRIGATION SYSTEMS

Upgrades or alterations to recycled water irrigation systems, non-potable irrigation systems, and potable water systems on recycled water use sites must be approved and inspected by the District. Prior to commencement of work, record drawings must be revised and submitted to the District for approval. Any upgrades or alterations made to a recycled water irrigation system or potable water system on recycled water use sites, that are not inspected or follow stated notification procedures, places the owner and the irrigation system in violation of the Rules and Regulations. Any upgrade or alterations performed and backfilled without District inspection shall be exposed at the owner's expense for inspection and compliance. Penalties may apply, including, but not limited to, termination of service.

3.6 REPAIRS TO ONSITE IRRIGATION SYSTEMS

Repairs to irrigation systems and potable water systems on recycled water use sites must be completed to the satisfaction of and inspected by the District. The District must be notified immediately when a repair is made. Any repairs performed and backfilled without District inspection shall be immediately exposed at the owner's expense for inspection and compliance. Any onsite repairs that are not immediately inspected or follow stated notification procedures, places the owner and the irrigation system in violation of the Rules and Regulations. Penalties may apply, including, but not limited to, discontinuation termination of service.

SECTION 4

TECHNICAL REQUIREMENTS FOR RECYCLED WATER FACILITIES

4.1 ONSITE IRRIGATION SYSTEMS

4.1.1 Design Responsibility

The design of an onsite irrigation system that will use recycled water, including the preparation of plans and construction specifications, shall be under the responsibility of a design consultant.

4.1.2 Provisions For Recycled Water

In those areas where recycled water is not immediately available for use when the area is ready for construction, an approved backflow prevention assembly shall be required for any potable water use. This assembly shall be provided, installed, and tested at least annually by the customer. All maintenance of the onsite backflow prevention assembly shall be the responsibility of the customer. In those cases where the District uses a master backflow prevention assembly at the intertie between the recycled water distribution system and the potable water system, the District may waive the requirement for the customer to install an onsite approved backflow prevention assembly.

Only the District, or the customer in accordance with District's requirements and under the approval and inspection of the District, shall remove said backflow prevention assembly and make the connection to the recycled water distribution system when recycled water becomes available. At such time, if the District removed the assembly, District shall return the assembly to the customer. The District shall determine all points of connection to the District's offsite facilities.

Backflow prevention assemblies are not required on recycled water irrigation systems after service has begun with recycled water. However, backflow prevention assemblies may be required on irrigation systems using recycled water, on a case-by-case basis as determined by the District. Backflow prevention assemblies required by the District on recycled water systems shall be clearly identified by painting the assemblies purple Pantone 522 and/or installed in protective enclosures. The District shall test these recycled water backflow prevention assemblies annually with the appropriate equipment, used only for recycled water backflow prevention assemblies.

The District shall make notification of all action taken with backflow prevention assemblies to the DHS.

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4.1.3 Service Line

District reserves the right to specify the amount, size, and location and/or type of all offsite facilities. The recycled water service lines shall be extended to a location in compliance with the District's standard drawings or a curb line of the customer's property abutting upon a public street, highway, road or utility easement in which recycled water mains are installed.

4.1.4 Service Pressure

The pressure zone/hydraulic grade line shall be as provided by the District. The design consultant must prepare and submit a hydraulic worksheet indicating hydraulic constraints. When offsite system pressures are inadequate or exceed demands, the addition of booster pumps and/or pressure regulators shall be the responsibility of the owner.

4.1.5 Design Application Rates

The onsite irrigation system shall be designed to apply irrigation water in a manner compatible with the infiltration rates of the soil types within the approved use area. Evidence that infiltration rates have been assessed shall be included with the design. Where varying soil types are present to the extent that they cannot be adequately addressed by separate zones (hydrozone), the design of the irrigation system shall be compatible with the lowest infiltration rate present.

Average and maximum application rates. All irrigation systems must not exceed the District's values for flat and slope. Refer to standard Provision 2 - Application Rates for methodology. The District will perform the necessary calculations

Flat area:	Average Application Rate	15 gpm/acre
	Maximum Application Rate	20 gpm/acre
Slope area:	Average Application Rate	10 gpm/acre
	Maximum Application Rate	15 gpm/acre

4.1.6 System Layout

- The irrigation system shall be designed based on peak-application rate requirements to prevent discharge onto areas that are not approved for use. Adjustable arc, adjustable radius sprinklers with anti-drain/check valves shall be used adjacent to roadways, boundary lines, and hardscape to confine the discharge from the irrigation system to the design area. Recycled water leaving the planting areas, whether by direct overspray, ponding, runoff, or windblown spray, shall be minimized. A drainage device under control of the owner shall be installed at the toe of slope draining to single family residential lots. Drainage devices must stand-alone; slope drainage devices shall not be tied into any other drainage systems, e.g., private systems for single-family lots.

- The onsite irrigation system shall be required to automatically shut off in the event of a line break. Utilize all available equipment to prevent unauthorized discharge of recycled water. See Section 4.1.7 System Control Devices.
- The irrigation system design shall avoid spray patterns that include obstructions that tend to concentrate recycled water to produce ponding and/or runoff, such as direct or indirect spraying against structures or objects.
- No common trenching with other utilities of any kind is permitted; reference Standard detail drawing IRR- 14
- The District reserves the right to limit the area of land under one ownership or homeowner's association to be supplied by one recycled water service connection and corresponding meter.
- A recycled water service connection and its corresponding meter shall not be used to supply adjoining property of a different owner, without the approval in writing from the District stating conditions and restrictions; such as easements or MOU (memorandum of understanding).
- Irrigation systems where landscaping around homes and in common areas served with one meter and owned by the same customer, e.g., a homeowners association, may be allowed to cross roads, streets, or other public right-of-ways within the customer's property. When a property provided with a recycled water connection and corresponding meter is subdivided, such connection and meter shall be considered as serving the lot or parcel of land on which the meter is located. Additional recycled water mains and/or recycled water service lines shall be required for all subdivided areas in accordance with the Regulations.
- For properties of the same customer, irrigation systems shall be allowed to cross roads, streets, or other public rights-of-way to serve medians and slopes along streets. For properties under the ownership and control of other parties, a recorded easement shall be mandatory. A copy shall be issued to the District.
- All recycled water used on any property must pass through the meter. Customers shall be held responsible and charged for all recycled water passing through the water meters.
- Onsite separation requirements:

Horizontal Separation: The pressurized recycled water piping shall maintain a ten (10) foot horizontal separation at all times from all potable water piping and/or a parallel sanitary sewer system. If a 10-foot horizontal separation is not possible, special construction requirements shall be considered, refer to District standard detail drawing IRR-13. Common trench construction is prohibited.

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Vertical Separation: The pressurized recycled water piping shall maintain a minimum one-foot vertical separation at all times from all pressurized potable water piping and/or a sanitary sewer system. The pressurized recycled water piping shall be installed one foot below all pressurized potable water piping and one foot above all sanitary sewer systems. If a one-foot vertical separation is not possible, special construction requirements shall be considered, refer to District Standard detail drawing IRR-13.

4.1.7 System Control Devices

Every newly constructed recycled water service line shall be equipped with an angle stop on the inlet side of the meter and ball valve on the discharge side of the meter, located within a District maintained meter box. The angle stop and ball valve are to be used only by District personnel to control the recycled water supply through the water service line. If the angle stop, ball valve, meter box, meter lid, or touch reader equipment is damaged by the customer or his use of recycled water to an extent requiring replacement, then the customer shall bear full financial responsibility for repair and replacement.

The newly constructed onsite irrigation system shall be required to automatically shut off in the event of a line break. A master valve in conjunction with a District approved irrigation controller and flow sensor shall be used to provide automatic system shut down in the event of excessive flow. Retrofitted and converted onsite irrigation systems may be required to install this equipment if there is a history of unauthorized discharges as described above.

4.1.8 Identification Requirements

Refer to Section 5.2.1, Facilities and Equipment Identification.

4.2 CONSTRUCTION WATER FACILITIES

4.2.1 Service Connections

Service connections for the construction use of recycled water may be provided by the District at locations as convenient as practicable to the customer, but at the discretion of the District. The service shall include a valved connection to a recycled water distribution main and water meter whose capacity shall be determined by the District from information supplied by the customer in the application for recycled water service. The customer shall make the connection to the main in accordance with the District's requirements. The meter shall be supplied by the District and installed by the customer in accordance with District's requirements. Refer to the District *Standard Specifications for Construction of Domestic Water, Sewer and Recycled Water Facilities* incorporated herein by this reference. (Refer to www.mnwd.com)

4.2.2 Onsite Distribution Facilities

Transmission lines for conveying recycled water from the metered service connection to a storage container or water distribution vehicle shall be of adequate size and structural integrity to ensure that leaks or ruptures will not occur in the course of normal construction activity. The customer shall provide these lines. Lines crossing construction roadways or other areas receiving regular vehicular traffic must be buried to a depth of at least 18 inches for pipes less than 2 inch diameter or a minimum of 24 inches deep if pipe diameter is 2 inches or greater. All lines shall be sleeved with Class 200 pipe twice the diameter of the transmission line. Rigid pipe able to withstand the planned vehicular loads shall be employed for such installations. All piping and appurtenances shall be identified as recycled water to the satisfaction of the District.

4.2.3 Storage Facilities

Recycled water storage tanks and distribution vehicles shall be of adequate design and structural integrity to ensure that leaks or ruptures will not occur in the course of normal use. The customer shall provide these tanks or ponds. All storage ponds and any storage tanks not supported more than six feet above ground-level shall be contained within a fence or other enclosure that will restrict access by the general public to these facilities at all times when operations personnel are not present. Outlet control with positive shut-off shall be provided at each storage facility with mandatory District approved air gaps. All storage tanks and distribution vehicles shall be identified as recycled water to the satisfaction of the District.

All recycled water storage facilities owned and/or operated by the customer shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year frequency 24-hour storm, and protected against 100-year frequency peak stream flows as defined by the Orange County Flood Control Agency.

4.2.4 Distribution Vehicles

Vehicles used for distributing recycled water for soil compaction and dust control shall be provided with adequate tanks and plumbing systems to ensure that leaks and ruptures will not occur in the course of normal use. A District-approved air gap is mandatory. Control valves shall be provided such that the recycled water can be applied in a controlled fashion on the approved use area and completely retained during transit in all other areas. Spray heads or nozzles shall be provided and configured such that the discharge is uniformly distributed and runoff, ponding, or windblown overspray conditions minimized. Refer to standard detail drawing IRR-1.

4.2.5 Identification

Identify all meters, valves, piping, storage tanks, "j" pipe stands, water burros, and impoundments utilizing recycled water shall be identified as recycled water to the satisfaction of the District.

4.3 PROTECTIVE MEASURES

The following provisions are to protect the potable water supplies against cross-connections to the customer's recycled water system. These provisions are in addition to, not in lieu of, the controls and requirements of other regulatory agencies. These provisions are in accordance with Title 17. The Regulations are intended to protect the potable water supplies and are not intended to provide protection of customers from the hazards of cross-connections within their own property.

Approved backflow prevention assemblies on the potable water services to the property, as required in these regulations shall be provided, installed, tested, and maintained by the customer at customer expense. These assemblies shall be located on the property served immediately downstream of the meter and shall not be on District facilities. All devices used shall be readily accessible for testing and maintenance and no device shall be submerged or exposed to recycled water, direct overspray, or runoff at any time.

During application for recycled water service, the applicant must provide sufficient information, including plumbing and building plans, to enable the District to determine the level of backflow protection required. The proper backflow protection, as determined by the District and approved by DHS and other appropriate regulatory agencies, shall then be installed, inspected, and tested before recycled water service is provided.

The customer shall notify the District not less than 30 days prior to a change of use regarding potable or recycled water, customer, onsite supervisor, owner, tenant, or operator. District will then reassess the level of protection required. Any and all proposed alterations or upgrades to existing onsite water facilities must be reported to and approved by the District prior to the proposed change.

At their discretion, representatives of SOCWA, the District, and any regulatory agency having jurisdiction may conduct surveys of property where the District provides water service. These surveys are to determine if any actual or potential cross-connections exist. The customer shall provide full cooperation including manpower in facilitating these surveys.

Where protection is required, backflow protection in accordance with Title 17 and approved by DHS for potable water supplies shall be provided as follows:

- Each District water service connection that supplies potable water to a parcel having a recycled water supply shall be protected against backflow from the parcel into the potable water to the satisfaction of the District.
- Backflow protection may be required at parcels where there has been a history of cross-connections to recycled water supply being re-established.

Water meters used for recycled water service shall be tagged, color-coded, or otherwise distinguished as such in accordance with AWWA Guidelines. These meters shall not be

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interchanged or used for potable water service after repairs and/or meter testing have been performed.

SECTION 5

CONSTRUCTION SPECIFICATIONS FOR RECYCLED WATER FACILITIES

The following details for customer construction specifications that are use specific, such as for irrigation, are intended as examples of current use practice, and are not intended to preclude other approved uses, which may require case-by-case specifications.

5.1 GENERAL CONDITIONS

All construction work for onsite recycled water facilities shall be in conformance with the Regulations, and addendums thereto. Work is to begin only after the contractor, installer, or customer has obtained approval in the form of signed plans or revisions for recycled water use from the District (issued a Use Permit) and DHS.

5.1.1 Trade Names or Approved Equivalents

The contractor shall be permitted to supply any of the specified materials or to offer for approval by the design consultant and the District equivalent materials in accordance with the appropriate section of the Regulations.

5.1.2 Permits and Licenses

Except as otherwise provided, the contractor shall procure all permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work.

5.1.3 Liability

Neither the District, SOCWA, member agencies of SOCWA, the Director of Engineering, nor any other officer, member of the Board of Directors of the District or SOCWA, employee or authorized agent of the said agencies shall be personally responsible for any liability arising out of the work performed. The customer shall procure and maintain for the duration of the construction period certificates of general liability insurance and workmanship insurance in forms and amendments approved by the District and naming the District, SOCWA and its member agencies and all the prior individuals as additional insures.

5.1.4 Loss and Damage

Neither the District, the SDRWQCB, SOCWA, member agencies of SOCWA, nor authorized representatives thereof shall be answerable or accountable in any manner for any loss or damage that may happen to the work or any part thereof; or for any material or equipment used in

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performing the work; or for injury or damage to any person(s), either workmen or the public; or for damage to adjoining property from any cause whatsoever during the progress of the work or at any time before or after final acceptance.

5.1.5 Legal Responsibility

The Contractor shall keep fully informed of all laws, ordinances and regulations that in any manner affect those engaged or employed in the work or the materials used in the work, or that in any way affect the conduct of the work, and of all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the same. If any discrepancy or inconsistency is discovered in the plans, drawings, specifications, or other documents in relation to any such law, ordinance, regulations, order, or decree, the contractor shall forthwith report the same to the design consultant and the District in writing.

The contractor shall observe and comply with and shall cause all of the contractor's agents and employees to observe and comply with all such existing and future laws, ordinances, resolutions, regulations, orders and decrees, and shall protect and indemnify the District, the SDRWQCB, SOCWA and each of its member agencies, and all their officers and agents against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order or decree, whether by the contractor or contractor's employees.

The contractor shall also indemnify and save the District and SOCWA, its officers, its employees or authorized agents harmless from all costs, losses, expenses, damages, attorneys' fees, and other costs of defense that the District may incur with respect to or on account of the work, and with respect to the failure, neglect or refusal of contractor to faithfully perform the work and all of contractor's obligations under the contract. Such costs, expenses, and damages shall include all costs incurred by the District to defend against any claims, stop notices or lawsuits based thereon in which the District is made a party.

The contractor shall observe the rules and regulations of the State, Department of Industrial Relations, Division of Industrial Safety, and, in particular, rules and regulations relating to shoring of trenches and excavations. All work shall be done in accordance with all directives, provisions and requirements pertaining to the method and manner of performing the work, in accordance with CAL-OSHA latest amendment or revision.

The contractor shall provide a job foreman present during working hours that can communicate effectively with District personnel both orally and in writing.

5.1.6 Inspection Authority

District shall at all times have access to all onsite work during construction and shall be furnished with such information as it may desire regarding location of facilities, the progress, workmanship and character of materials used in the work.

District shall have the authority to notify the customer of an apparent failure on the part of the contractor to carry out orders given or to perform any provisions of the plans or specifications.

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Upon its confirmation of the apparent failure, the customer shall be obligated to require the contractor to suspend the work wholly or in part. The contractor shall immediately comply with the written order of the District to suspend the work wholly or in part. Dependent on the nature of the non-compliance, it may require immediate action by the contractor via verbal order with a written order following. The work shall be resumed when methods or defective work are corrected as ordered and approved in writing by the District. Failure to comply with requests of the District will prevent further work, termination of all potable water and recycled water, and the final release of the entire project.

5.1.7 Potable Water System Identification

Where potable water service is provided to sites with recycled water service, the potable water system must have identification; refer to Section 5.2.1.

5.2 MATERIALS SPECIFICATIONS

5.2.1 Facilities and Equipment Identification

Colors and materials used for the identification of all recycled water pipe, appurtenances, equipment, storage facilities, and approved use areas shall be in accordance with the latest edition of the AWWA Guidelines and the State of California Department of Health Services Purple Book. The AWWA Guidelines and the Purple Book describe the wording required for identification signs for approved use areas, storage facilities, and construction equipment. All recycled water distribution equipment, storage facilities, and approved use areas shall be identified as such.

Identification requirements are shown in the attached Recycled Water Standard Detail Drawings. The mandatory standards pertain to all recycled water facilities and potable water facilities (including those used for irrigation) that are used on the same site or adjacent to sites using recycled water.

Identification requirements for piping (including recycled water hoses) are shown in standard detail drawing IRR-25. Identification requirements for control valves are shown in standard detail drawing IRR-10. All other recycled or potable water facilities shall have tags, labels, or other identification attached as directed by the District. For site identification, a minimum of two recycled water caution signs (see standard detail drawing IRR-27) shall be installed on each site as directed by the District Inspector. The tag and label requirements are shown in standard detail drawing IRR-26.

5.2.2 Onsite Irrigation Systems

District rules, regulation, specification, and details shall take precedence in any and all conflicts as determined by the District.

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- Piping

Piping and piping materials shall conform in all respects to the requirements in the Regulations, and as a minimum shall conform to the latest requirements of the AWWA and Uniform Plumbing Code Standards for the type, size, class, and installation requirements of pipe being used; see Provision 3 for listing of minimum requirements. Design consultant shall verify all ANSI, AWWA And ASTM standards and references.

Pressure Supply Line - All onsite recycled water piping shall be installed in accordance with the AWWA and Uniform Plumbing Code and all other local governing codes, rules, and regulations. All piping shall be continuously and permanently marked with the manufacturer's name or trademark, nominal size, and schedule or class indicating the pressure rating. Supply lines up to the first control "master valve" valve(s) shall be brass.

- District Detail Drawings

The use of all District details shall be mandatory; *Standard Specifications* are available at www.mnwd.com.

Any details required that are not provided by the District shall be approved on a case-by-case basis by the District.

5.2.3 Construction Water Facilities

- Piping

All piping employed for the transmission of recycled water for construction purposes shall be in serviceable condition and free from leaks and structural faults. All joints shall be structurally sound and free from leaks.

- Valves

All valves employed with facilities using recycled water for construction purposes shall be in serviceable condition, provide positive shutoff, and be free from leaks.

- Storage Tanks

All storage tanks used for recycled water, whether fixed or mounted on distribution vehicles, shall be structurally sound and free from leaks. Approved air gaps are mandatory. (Refer to standard detail drawing IRR-1.)

5.3 METHODS OF CONSTRUCTION

5.3.1 Onsite Irrigation Systems

- Valve and System Control Device Installations

All onsite valves, valve boxes, valve markers and power supplies shall be installed in accordance with the requirements in the Regulations and local building codes.

- Separation from Other Utilities

Separation between onsite recycled water lines and sanitary sewers and potable water lines shall be established in accordance with the latest requirements set forth by the DHS and OCHCA, but not less than the separations described in the AWWA Guidelines. Refer to Section 4.1.6 System Layout. Common trenching with other utilities or any other systems is strictly prohibited. (See standard detail drawing IRR-14.)

- Laying Pipe

Recycled water lines 1½ inches and less in diameter below grade shall be buried with a cover of at least 18 inches. Recycled water pipelines 2 inches and greater shall be buried with a cover of at least 24 inches or 36 inches when potable water is used onsite. Pipe trenches shall be backfilled with clean material containing no rocks and debris that can damage the pipe.

Recycled water lines laid above grade shall be protected from thrust motion if such protection is determined to be required by the engineer or inspector. To achieve such protection, utilize V.I.T. brand stabilizer systems or approved equal. Alternative methods of protection from thrust motion may be approved by the engineer or inspector.

5.3.2 Onsite Construction Water Facilities

- Valve Installations

All valves installed along the recycled water transmission pipeline and not attached to a rigid structure shall be protected from thrust motion if such protection is determined to be required by the engineer or inspector. To achieve such protection, metal stakes with wire or plumbers tape lashes shall be installed at all such valves. Alternative methods of protection from thrust motion may be approved by the engineer or inspector.

- Laying Pipe

Refer to Section 5.3.1.

- Water Trucks

Trucks must be identified as carrying recycled water and not suitable for drinking. The feed pipe to the truck must be permanently attached and have an air gap to the tank. Refer to standard detail drawing IRR-1.

- Storage Tank Installations

All recycled water storage tanks shall be erected only on level ground. Provisions shall be made to prevent differential settling of the tank supporting structure. Approved air gaps are mandatory. Refer to standard detail drawing IRR-1.

5.4 INSPECTION

The inspection of the work shall not relieve the contractor of any obligations to complete the work as prescribed by the applicable specifications. Defective work shall be made good and unsuitable materials may be rejected notwithstanding the fact that such defective work and unsuitable materials or materials not as specified on the approved plans, that have been previously overlooked by the inspector and accepted. The installation and inspection of unsuitable materials or materials not as specified on the approved plans shall not be construed as acceptance, and modification to these specifications shall only be made by the District in writing.

5.4.1 Onsite Irrigation Systems

- Construction Schedule

If required by the District, the contractor shall submit a schedule to the District outlining his proposed construction operation. The contractor shall conform to the rules and regulations of the District regarding prior notification for inspection and deviations from the approved schedule.

- Notification and Approvals

All work, onsite and offsite, shall be subject to inspection and approval, as required by the District in the MNWD's *Standard Specifications for Construction of Domestic Water, Sewer and Recycled Water Facilities* and/or the Regulations. The contractor shall schedule the District, OCHCA, DHS, and all other regulating agencies for inspection on all onsite irrigation, potable, and fire systems. The contractor shall give due notice to the inspector in advance of backfilling so that proper inspection may be provided. Unless the District expressly states otherwise, the contractor in advance of any and all inspection requirements shall give a minimum of 48 hours notice, whether for materials or construction work.

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- Inspection Intervals

All work shall be subject to inspection by the District and shall be left open and uncovered until approved by the District. Potholing of piping is strictly prohibited.

The contractor shall not proceed with any subsequent phase of work until the previous phase has been inspected and approved by the District Inspector. The items to be included in the inspection process are listed in Provision 4 - Inspection Items. Record drawings must be updated daily prior to inspection.

- Final Inspection

Following the completion of all construction work and the submittal and approval of record documents, calibration reports, certificates, and installation approvals, the Contractor shall request final inspection of the work. This request shall include the scheduling of the operational testing.

Before final acceptance, the District, accompanied by the Contractor's superintendent or foreman, will make a final inspection of all work; refer to Provision 4 - Inspection Items.

5.4.2 Construction Water Facilities

- Construction Schedule

The operator shall give the District a construction schedule prior to initiation of construction work.

- Notification and Approvals

Unless the District expressly states otherwise, the operator in advance of any and all inspection requirements shall give a minimum of 48 hours notice, whether for materials or installation work.

- Final Inspection

The operator shall request final inspection of the work. Prior to use of recycled water, District approval must be obtained. Signage, labels, and air gap on truck tank must be installed. The Use Permit must be onsite and in vehicle.

5.5 REVIEWS AND TESTING

5.5.1 Onsite Irrigation Systems

- Materials

The contractor shall furnish the District with such information, as it may desire, regarding the character and quality of materials used. When requested by District, the contractor shall submit a certification that the product meets the requirements of these specifications.

All pipe and accessories shall be carefully inspected by the District and contractor for damage in transit. Any damaged or degraded pipe or fittings delivered and unloaded at trench-site shall be rejected and removed immediately by the contractor from the site of the work.

- Installed Piping Systems

New piping systems shall be tested as specified in Provision 5 - Testing Provisions.

5.5.2 Construction Water Facilities

- Materials

The contractor shall furnish the District such information, as it may desire regarding the character or quality of materials used.

- Installed Piping Systems

Installed piping systems shall be subjected to a leak test administered by the inspector with the cooperation of the contractor, using a California State certified tester. Before testing, the pipe and valves shall be staked if such protection from thrust motion has been determined to be required by the engineer or inspector. Any noticeable leaks shall be stopped and defective materials shall be replaced. Valves shall be operated during the test period.

- Operational Testing

Prior to final acceptance by the District, all construction facilities shall be required to successfully pass an operational test as administered by the design consultant in the presence of the District Inspector. The leak test for installed piping systems in conjunction with a leak test of all storage tank installations shall constitute the operational test.

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Any required corrections shall be noted in the form of a punch list and submitted to the contractor by the District for correction. Service startup shall not be authorized until all corrections are made to the satisfaction of the District.

5.6 RETROFITS

5.6.1 Retrofit to Recycled Water Use

Where it is planned that an existing potable water system be retrofitted to a recycled water facility, the facilities to be retrofitted to recycled water shall be investigated in detail at the owner's expense. On a case-by-case basis, District shall review the record drawings and determine the measures necessary to bring the system into acceptable compliance with the Regulations. After District approval, DHS shall also review and approve all conversions in accordance with the Use Permit application process in the Regulations. No existing onsite potable water facilities shall be connected to or be incorporated into the recycled water system without the District and other regulatory agency testing and approval. Guidelines for retrofitting onsite systems to recycled water service are available through the Recycled Water Division. As a minimum, the retrofit of a potable water system to a recycled water system shall require:

- Identification of all existing onsite above grade pressure pipelines, valves, and appurtenances in accordance with requirements of the Regulations for new construction of recycled water systems; and
- Installation of an approved air gap or backflow prevention assembly devices in accordance with requirements of the Regulations and subject to cross-connection control tests required in order to prevent cross connection or contamination of a potable water system at any location where it is proposed to retain a connection to a potable system; and
- Performance of dye test or pressure tests to determine existence of cross connection with all onsite potable water systems; and
- Submittal of as-built record drawings package; and
- Completion and submittal of Appendices 5 and 6.

The District recommends installation of a master valve and flow sensor to automatically shut off system in the event of a pipeline break.

Refer to Provision 6 - Onsite Recycled Water Retrofit Procedures for more detailed information.

5.6.2 Conversion from Recycled Water Use

If, due to onsite failure of the recycled water system, or use violations, District determines it necessary to convert onsite facilities from a recycled water supply to a potable, or other water supply, it shall be the responsibility of the customer to perform conversion, unless determined

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otherwise by the District. Prior to District approval, the DHS and OCHCA shall review and approve all conversions. As part of the conversion effort, the customer shall:

- Isolate the recycled water supply. Service shall be removed and plugged at the recycled water main or abandoned in a manner approved by District's Engineer or his designated representative.
- Installation and testing approved backflow prevention assemblies. The customer shall install approved backflow prevention assemblies on all potable, or other water meter connections.
- Remove any/all special recycled water quick couplers. The customer shall be responsible for replacement with quick couplers approved for potable water systems.
- Notify all onsite personnel involved.
- Remove all recycled water identification labels/signs, tags, and tapes where possible. Change out branded valve box lids, to the satisfaction of the District.
- Provide required disinfection of all recycled water systems as mandated by appropriate regulatory agencies, and to the satisfaction of the District.

SECTION 6

OPERATIONAL REQUIREMENTS FOR RECYCLED WATER USE

The following details for customer operational requirements that are use specific, such as for irrigation, are intended as examples of current use practice, and are not intended to preclude other approved uses, which may require case-by-case specifications.

6.1 SPECIFIC LIMITATIONS

6.1.1 Runoff Conditions

Conditions that directly or indirectly cause runoff outside of/or within the approved use area, whether by design, construction practice, or system operation, shall be minimized.

6.1.2 Ponding Conditions

Conditions that directly or indirectly cause a ponding condition outside of or within the approved use area, whether by design, construction practice, or system operation, shall be minimized. Temporary ponding in a vegetated area caused by draining of system or meter testing is allowed in District specified areas with prior District approval.

6.1.3 Direct Overspray Conditions

Any discharge of water directly onto areas other than that within the approved use area is strictly prohibited.

6.1.4 Windblown Overspray Conditions

Conditions that directly or indirectly permit windblown spray to pass outside of the approved use area, whether by design, construction practice, or system operation, shall be minimized.

6.1.5 Unapproved Uses

Use of recycled water for any purposes other than those explicitly approved in a Use Permit issued by the District and without the prior knowledge and approval of the District is strictly prohibited.

6.1.6 Disposal In Unapproved Areas

Disposal of recycled water for any purposes, including approved uses, in areas other than those explicitly approved in the Use Permit issued by the District and without the prior knowledge and approval of the District, is strictly prohibited. Discharge of water from flushing or draining of the recycled system shall be done either at the approved use site and in a manner that does not create ponding or runoff conditions, (See Section 6.1.2 Ponding Conditions for special considerations.) or to a sanitary sewer manhole, with the approval of the agency responsible for operation of the sanitary sewer. In no case shall the discharge of recycled water to a sanitary sewer cause the sewer to overflow or otherwise create a public health hazard or nuisance. Air gap protocol as depicted in Standard Drawing IRR-1 shall be applied.

6.1.7 Cross Connections

Cross connections, permanent or temporary, resulting from the use of recycled water or from the physical presence of a recycled water service, whether by design, construction practice, or system operation, are strictly prohibited.

6.1.8 Unprotected Drinking Fountains

Any drinking fountain located within the approved use area designated by the Use Permit shall be protected, by siting and/or a structure, from contact with recycled water. Lack of such protection, whether by design, construction practice, or system operation, is strictly prohibited. Refer to standard detail drawing IRR-30.

6.1.9 Unprotected Public Facilities

Facilities that may be used by the general public, or onsite personnel, including but not limited to eating areas, eating surfaces/benches, pools, spas, hardscape, and playground equipment/play areas, and located within the approved use area designated by the Use Permit, shall be protected by siting and/or a structure from contact with recycled water. Lack of such protection is prohibited until review and concurrence by the District, SOCWA, DHS, and OCHCA on a case-by-case basis.

6.1.10 Hose Bibbs

Installation of hose bibbs on any onsite system that presently operates or is designed to operate with recycled water, regardless of the hose bibb construction or identification, is strictly prohibited.

6.1.11 Fire Hydrants

Use or installation of fire hydrants on any site that presently operates or is designed to operate with recycled water, regardless of the fire hydrant construction or identification, requires prior written approval by the District.

6.1.12 Hours of Operation

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Irrigation with recycled water is restricted to particular hours that vary for the following application areas:

- Turf areas and center street medians
- Slopes and groundcover/shrub areas
- Golf courses

Current times for these areas and any special timing conditions are available from the District; refer to Provision 7 - Hours of Operation.

Potential public contact with recycled water shall take precedence over recycled watering schedules. Irrigation system runtimes shall be adjusted to minimize public contact with recycled water, on an individual lateral system basis. The District shall require specific run times and durations where there is a history of public contact.

6.1.13 Water/Garden Hoses and Hose Appurtenances

Water/garden hoses and hose appurtenances utilizing recycled water shall be purple in color with heavy-duty brass fittings. Hoses shall be continuously imprinted with "Caution; Recycled/reclaimed Water – Do Not Drink" and rated at 150 psi working pressure. Hoses shall only be used for recycled water use. Use of these hoses for potable water use is strictly prohibited.

6.2 ONSITE IRRIGATION SYSTEMS

6.2.1 Supervision

Onsite irrigation systems at each use area under the customer's control shall be under the management of the onsite supervisor designated by the customer or the operator and approved by the District. Onsite supervisors shall be responsible for the installation, operation, and maintenance of the irrigation system; enforcement of the Regulations; prevention of potential hazards and cross connections; and maintenance of the recycled water system plans in record drawing form, including location of any onsite potable water features and facilities. The onsite supervisor, in the event of a contamination to the public potable water supply, shall be responsible for immediate notification to the District.

The onsite supervisor or his representative shall check all appurtenances on the onsite irrigation system to ensure proper operation, and perform a coverage test of the system at least quarterly. Owner shall keep records of the quarterly onsite testing (refer to Appendix 6 Recycled Water Use Permit) for District review. Records must be kept for a period of five years as a minimum.

The onsite supervisor or his representative shall be available during normal working hours at an address listed with the District for the purpose of hosting an inspection tour or for discussing operational aspects of the system. The onsite supervisor shall be able to effectively communicate with District personnel orally and in writing. The onsite supervisor or his representative shall be

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available via telephone at a number listed with the District for emergency off-hours contact (see Appendix 9, Onsite Testing Form). Where necessary, keys and/or lock combinations shall be issued to the District to provide access upon request.

6.2.2 Operator Certification Submittal

Once the customer has selected the operator of an onsite recycled water system, the certification of recycled water service operation must be initiated. District shall evaluate this submittal and advise the operator of the need for any additional information or action. Operators must attend a training session coordinated by the District or SOCWA prior to receiving operation certification or within 180 consecutive calendar days after certification, as training sessions are scheduled.

If the customer selects a new operator during the course of service, a new Use Permit (Appendix 6) form shall be submitted by the new operator to the District. The District shall update all Use Permits to confirm information accuracy.

6.2.3 Temporary Service Connection

A temporary service connection may be provided for onsite construction testing purposes. The temporary service connection consists of the permanent service connections and meter plus any backflow prevention assemblies, if required. Temporary service connection is valid for only 90 consecutive calendar days.

6.2.4 Service Startup

Following final District inspection and certification of the project, the customer shall request in writing regular service startup. District shall begin regular service within five working days of approval of service startup.

6.2.5 Confinement of Irrigation

The customer shall be responsible for maintaining and controlling the system in order to minimize human contact, prevent consumption of recycled water, and to control and eliminate direct spray, overspray, ponding and runoff. The customer shall be responsible for any subsequent uses of the recycled water.

6.2.6 Dye Testing/Pressure Testing

In order to determine the existence of any cross connections or backflow conditions into the potable water system, acceptable tracer dyes may periodically be introduced into the recycled water system by the District where feasible, and/or a customer may perform a pressure test where the recycled system is isolated for a period of 24 hours or as directed by the District.

6.2.7 Contamination

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In the event of contamination or pollution of a potable water system due to a cross connection or other failure, DHS, OCHCA and the District shall be immediately notified, so that appropriate measures will be taken to correct the problem. Onsite supervisor shall submit a written report explaining the contamination within five working days.

6.2.8 Maintenance

A preventive maintenance program designed to ensure the continued operation of all system elements within the requirements of the Regulations shall be evidenced by the customer and open to inspection by The District. Records must be kept on file for five years as a minimum. See Section 6.2.1 for reporting requirements. See Appendix 9, for onsite testing report form.

6.3 CONSTRUCTION WATER FACILITIES

6.3.1 Supervision

The operation and surveillance of the construction water facility at each use area under the customer's control shall be under the management of an onsite supervisor designated by the customer or the operator and approved by the District. Onsite supervisors shall be responsible for the installation, operation, and maintenance of the onsite facility, equipment, enforcement of the Regulations, and prevention of cross connections and potential hazards. The onsite supervisor or his representative shall be available via telephone at numbers listed with the District for contact during working hours and after hours.

6.3.2 Identifying Equipment

All equipment and facilities using recycled water shall be identified per District regulations. (See Section 4.2.5 and standard detail drawing IRR-27.)

6.3.3 Application Control

Recycled water used for the purpose of soil compaction and dust control shall not be stored or applied in a manner that causes runoff, ponding, windblown overspray conditions, or discharge in any way onto unapproved areas. If such conditions occur, the method of application shall be altered to correct them and prevent any further ponding, runoff, or windblown spray onto unapproved areas. Control valves on the water distribution vehicles and other controlling devices shall be properly employed to prevent the application of recycled water outside the approved use area onto surfaces including, but not limited to, street pavements, sidewalks, and drainage courses.

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6.3.4 Maintenance

A preventive maintenance program designed to ensure the continued operation of all system elements within the requirements of the Regulations shall be evidenced by the customer and open to inspection by the District.

6.3.5 Reuse of Equipment

Any equipment, such as tanks, water trucks, temporary piping or valves and portable pumps that have been used with recycled water shall be drained, cleaned and disinfected before removal from the approved use area to another job site. This disinfection and cleaning shall ensure the protection of the public health in the event of any reuse of such equipment with higher quality water. Methods of disinfection shall be approved by the District or the appropriate regulatory agency, and the disinfection process shall be performed in the District's presence. When storage tanks or distribution vehicle tanks are provided with an inlet air gap whose configuration is approved by the OCHCA, such onsite disinfection shall not be required.

6.4 TESTING AND INSPECTION

Systems constructed to immediately begin using recycled water or systems constructed for recycled water use, but will be using potable water in the interim as recycled water becomes available in the area, are required to successfully pass cross connection control testing in order to continue water service. A final release letter will be issued when these testing and other District requirements are met. No potable water other than for testing and no buildings or facilities using potable water, shall be utilized or occupied until all cross connection control testing and final inspection requirements have been performed and passed.

Any use site receiving recycled water and potable water shall be required to successfully pass routine inspection cross connection control testing in order to continue to receive potable, recycled water and sewer service.

For sites adjacent to recycled water use sites, cross connection control testing and site inspections may be required on a case-by-case basis, to ensure the protection of the public water supply and public health.

6.4.1 Schedule

The District will inspect and test at least every four years; each site utilizing recycled water and potable water for compliance with District, State, and County regulations regarding use of recycled water onsite. Sites with public exposure will be tested more frequently.

Any site that exceeds the inspection and testing schedule established by the District by sixty (60) consecutive calendar days will be subject to recycled water service termination if the delay is a result of lack of cooperation or coordination of the owner or their representatives.

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Any recycled water site where recycled water service has been discontinued for a period of thirty (30) consecutive calendar days, or has exceeded the previous inspection and testing schedule established by the District will be required to perform an inspection and cross connection testing prior to and in conjunction with regular service start-up. No recycled water shall be utilized onsite without the testing being performed.

6.4.2 Procedures

Provision 8 - Onsite Testing Procedures is a non-inclusive list of standard inspection procedures. The District reserves the right to add to or alter testing procedures as necessary. Testing will review all onsite POC to verify proper identification and proper backflow protection with current test report as required by the District and DHS.

6.5 RECYCLED WATER IRRIGATION SYSTEM MAINTENANCE REPORT

The onsite supervisor or his representative, using Appendix 9, shall assess the onsite irrigation system quarterly to ensure full compliance to all current Regulations regarding the use of recycled water. The onsite supervisor or his representative of the use site shall maintain records for the quarterly assessment during the routine inspection and testing by the District and keep them on file for District review upon request. If the forms are not available for District review upon request, the District may terminate the recycled water service and reconnection fees will apply to restore recycled water service.

SECTION 7

VIOLATIONS AND PENALTIES

7.1 DETERMINATION

The District reserves the right to determine whether a violation of the Rules and Regulations has resulted from any action and/or occurrence that are the responsibility of the customer. Insofar as violation of the Rules and Regulations constitutes violation of any regulatory agency requirement, the District makes its determination on behalf of the concerned agency(s). However, this determination and any consequential penalties levied by the District do not derogate the opportunities available to the affected regulatory agency(s) to levy their own penalties.

7.2 VIOLATIONS

Violations shall include those actions and/or occurrences that directly cause noncompliance with any one of the specific operational limitations as listed in the Rules and Regulations, such as runoff conditions, ponding conditions, direct and windblown overspray conditions, unapproved uses, disposal in unapproved areas, cross connections, unprotected drinking fountains, unprotected public facilities, hose bibbs, fire hydrants, and hours of operation. However, by definition, noncompliance with any condition or conditions of the Rules and Regulations or Use Permit, whether willfully or by accident, shall constitute a violation. Pursuant to Section 35424 of the California Water Code, any violation of the Rules and Regulations is a misdemeanor.

Customer reporting requirements in the event of a violation are outlined in Section 3.4.

7.3 CORRECTIVE ACTION

Any person, firm, corporation, association, or agency found to be violating any provision of the Rules and Regulations or the terms and conditions of the Use Permit, or applicable State or local statutes, regulations, ordinances, or other requirements shall be served by the District with written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations. This provision is in addition to and not by way of derogation of any other remedies or procedures available to the District by law, regulation, or pursuant to any of the provisions of the Rules and Regulations.

7.4 PENALTIES PRIOR TO ISSUANCE OF THE USE PERMIT

7.4.1 Existing Potable Water Service Being Converted to Recycled Water Use

If after one hundred and eighty (180) consecutive calendar days from the date of the District's final determination notice, the prospective customer has not completed required onsite retrofit construction work, then, in addition to any other penalties set forth in the Rules and Regulations, the District may impose a surcharge equal to fifty percent (50%) of its potable water rate in effect at the time of violation. If imposed, this surcharge will be included in the customer's monthly billing, and will persist until remedy is achieved by the customer to the District's satisfaction.

7.4.2 Recycled Water Service Temporarily Using Potable Water

Where recycled water is available in offsite facilities, and where temporary use of potable water has been approved by the District for a recycled water service, if after thirty (30) consecutive calendar days from the date of the District's corrective action notice, the prospective customer has not completed required onsite facility corrective actions and achieved compliance, then, in addition to any other penalties set forth in the Rules and Regulations, the District may impose a surcharge equal to fifty percent (50%) of its potable water rate in effect at the time of violation. Such surcharge will be imposed on the service requiring compliance, will be included in the customer's monthly billing for that service, and will persist until remedy is achieved by the customer to the District's satisfaction.

7.4.3 Penalty For Lack Of Inspection During Installation

Any work not inspected by the District shall be required to be exposed for District inspection, at the owner's expense. Failure to comply with this requirement will result in termination of potable and/or recycled water. (Reconnection fees shall apply.) Service shall only be restored when, in the opinion of the District, the inspection requirements have been met.

7.5 PENALTIES AFTER ISSUANCE OF THE USE PERMIT

Failure to permanently cease all violations within the time stated shall result in revocation of the Use Permit by the District and termination of water, sewer, and/or recycled water service. Violations regarding any one service may result, at the sole discretion of the Board or General Manager, in termination of any combination of or all water, sewer, and recycled water service in the following manner.

7.5.1 Interim Revocation

In cases where the serious nature of the violations described above require immediate action, the Board or General Manager may, in the sole discretion of the Board or General Manager,

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immediately revoke a Use Permit on an interim basis and thereupon cease water, sewer, and/or recycled water service, subject to a timely decision on permanent revocation of the Use Permit pursuant to a public hearing as provided herein. In cases of sewer service termination, there shall be no discharge of any type by an applicant, owner, or customer into the District's sewer facilities.

7.5.2 Permanent Revocation

Permanent revocation of a Use Permit shall occur only subsequent to a public hearing held in the manner hereinafter provided. The applicant, owner, or customer shall be given written notice ten (10) consecutive calendar days prior to a hearing on the possible permanent revocation of any Use Permit by the District. The notice shall specify the grounds of the proposed revocation of any such Use Permit in reasonable detail. It may but need not describe suggestive corrective action acceptable to the District. Notice may be delivered personally to the applicant, owner, or customer or it may be given by depositing such in the United States mail with postage prepaid, addressed to the applicant, owner, or customer either at the current address of record. Any such action to permanently revoke a Use Permit shall be effective ten (10) consecutive calendar days after notice of the Board's decision and shall be either personally delivered to the applicant, owner, or customer or placed in the United States mail, postage prepaid, addressed to the applicant, owner, or customer in the manner hereinabove specified.

In the alternative to such action, the District may establish a 50% surcharge on the continuation of water, sewer, and/or recycled water service by the District until such time as the applicant, owner, or customer has taken action to comply with all of the hereinabove described requirements for obtaining service from the District in its reasonable discretion. The foregoing provisions of the Rules and Regulations are a requirement of any Use Permit, and any application for recycled water service therefore shall be subject to such provisions. The Board, if it deems such to be in the best interest of the District, may on an interim basis or otherwise waive or modify any of the foregoing.

7.6 APPEAL

The customer may appeal the determination of the District to the Board. Such appeal must be presented in writing to the General Manager for presentation to the Board at one of its regular meetings. The appeal shall state the conditions that have been determined to be a violation and the customer's opinion to the contrary. The action of the Board shall be final.

7.7 SERVICE RECONNECTION

Any request to reestablish service subsequent to the revocation of a permit and the termination of water, sewer, and/or recycled water service shall be in the manner prescribed for initially obtaining service from the District, which may include the collection of a security deposit. However, in addition, the District may, in its discretion, require that an agreement including any special conditions and financial security conditioned upon compliance with the District's Rules and Rules

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and Regulations be provided in an amount, manner, and for a period of time as determined by the Board.

APPENDICES

1. Resolution 96-8 - Mandatory and Related Reclaimed Water Use Rules and Regulations.
2. Sample Preliminary Determination Notice
3. Sample Final Determination Notice
4. Checklist/Action Request Form for Obtaining Recycled Water Service
5. Recycled Water Service Application
6. Recycled Water Use Permit
7. Agency Contacts
8. District Guidelines Related to Recycled Water Production and Use
9. Recycled Water Testing Form

APPENDIX 1

RESOLUTION NO. 96-8

RESOLUTION OF THE BOARD OF DIRECTORS OF THE MOULTON NIGUEL WATER DISTRICT ESTABLISHING MANDATORY AND RELATED RECLAIMED WATER USE

I. FINDINGS

1. The people of the State of California have a primary interest in the development of facilities to reclaim water containing waste to supplement existing surface and underground water supplies and to assist in meeting the future water requirements of the state (California Water Code, Section 13510).
2. Conservation of all available water resources requires the maximum reuse of reclaimed water for beneficial uses of water (California Water Code, Section 461).
3. Continued use of potable water for irrigation of greenbelt areas, including golf courses, parks, and highway landscaped areas, and certain other non-domestic water uses may be an unreasonable use of such water where reclaimed water is available (California Water Code, Section 13550).
4. The state policies described above are in the best interest of the Moulton Niguel Water District (the "District" or "MNWD"). The District is dependent on imported potable water for domestic and non-domestic uses. The supply and the reliability of the supply of imported water is uncertain. By developing and utilizing reclaimed water, the need for additional imported water can be reduced. In light of these circumstances, certain uses of potable water in the District's service area may be considered unreasonable or to constitute a nuisance where reclaimed water is available.

II. RECITALS

A. The District's Board of Directors adopted Resolution No. 88-8 on March 17, 1988, which sets forth the District's policy for the usage of non-domestic water. The District adopted its current Rules and Regulations for Users of Reclaimed Water on July 21, 1994 by adoption of Resolution No. 94-23 (the "Reclaimed Water Rules and Regulations"). The Reclaimed Water Rules and Regulations establish standard procedures, specifications, and limitations for the safe and orderly development and operation of reclaimed water facilities and systems in the District's service area, and include enforcement procedures and penalties for user violations.

B. The District is a founding member agency of the South Orange County Reclamation Authority (SOCRA), a joint powers authority organized by various Southern Orange County public water agencies and existing pursuant to Government Code Section 6500 et seq., and that certain joint

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powers agreement entitled “Joint Exercise of Powers Agreement Creating South Orange County Reclamation Authority, Orange County, California (SOCRA)”, dated September 5, 1991. The District, as a member of SOCRA, acquired on September 21, 1992, waste discharge permit and water reclamation requirements in Order No. 92-67 (SOCRA Discharge Permit), of the Regional Water Quality Control Board, San Diego Region, for its production and use of reclaimed water.

C. The District previously prepared its Master Plan for District-Wide Facilities (including reclamation facilities), the most current update in 1996, as well as Plans of Works for reclamation facilities within its Improvement Districts Nos. 6, 7, and 8 in order to define, encourage, and develop the use of reclaimed water within its service area. The Master Plan and Plans of Works are referred to herein as the “Reclamation Plan of Works.”

D. The District adopted its Urban Water Management Plan pursuant to Water Code Section 10610 et seq., on December 19, 1985, as thereafter amended and updated on December 20, 1990, and February 22, 1992, and most recently on December 15, 1995, by adoption of, respectively, its Resolution Nos. 85-86, 90-45, 92-2, and 95-30. The Urban Water Management Plan includes in its terms the District’s current and planned reclamation measures and alternatives.

E. The District has adopted its Standard Specifications for Construction of Domestic Water, Sewer, and Reclaimed Water Facilities (the “Standard Specifications”), which it updates from time to time, the most current version dated 1993.

F. The District previously adopted its Ordinance No. 1994-1, An Ordinance of Regulations for the Discharge of Wastewater to Facilities of the Moulton Niguel Water District pursuant to federal and State requirements for the implementation of a waste discharge pretreatment and source control program (“Pretreatment Program”).

G. Together, the District’s Reclaimed Water Rules and Regulations, “Reclamation Plan of Works”, Standard Specifications, Urban Water Management Plan, and Pretreatment Program, constitute what can commonly be referred to as a “Master Reclamation Plan.”

H. Section 35423 of the California Water Code empowers the District to establish, print, and distribute equitable rules and regulations for the sale and distribution of water, inclusive of reclaimed water.

I. The Board of Directors of MNWD, pursuant to the authority set forth in Recital H, desires to establish a specific policy and also procedures for the mandatory use of reclaimed water within its service area as well as certain other related uses, which shall be included as additional terms of the District’s Reclaimed Water Rules and Regulations.

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE MOULTON NIGUEL WATER DISTRICT DOES HEREBY RESOLVE, DETERMINE, AND ORDER AS FOLLOWS:

Section 1. Findings. Sections 1 through 4 set forth above are incorporated herein as findings of the Board of Directors of MNWD.

Section 2. Mandatory and Related Reclaimed Water User Terms. Section 1.5 POLICY of the Reclaimed Water Rules and Regulations is hereby replaced as follows:

“1.5 POLICY

It is the mission of the District to provide reliable and energy-efficient water services in a customer-oriented and environmentally responsible manner. In light of this mission, it is the policy of the District that reclaimed water shall be used within its jurisdiction and where it can reasonably supply neighboring jurisdictions wherever such use is economically justified, financially and technically feasible, consistent with the District’s Master Reclamation Plan and legal requirements, including water rights, and not detrimental to public health, safety, and welfare, and the environment.

1.5.1 Reclaimed Water Use

(a) **Mandatory Use:** The following types of authorized use from Section 1.4.1 shall generally require reclaimed water: agricultural irrigation, construction use, landscape irrigation, landscape and/or recreation impoundments, and wildlife habitat, these being called “mandatory” types of use.

In order for the District to successfully plan and provide for a District-wide reclaimed water system, the user base must be firmly established. Where available in offsite facilities, reclaimed water shall be used under the following conditions: for mandatory types of use being serviced reclaimed or potable water by the District (at the time of this regulation’s adoption), and for mandatory types of use associated with future development that would otherwise be served potable water by the District. The only exceptions to use under these conditions shall be based on the judgment of the District in light of special public health concerns or established through the adopted appeals process set forth in Section 1.5.4 below, whereby a waiver for reclaimed water service is obtained by the prospective user.

(b) **Non-Mandatory Use:** The following types of authorized use from Section 1.4.1 may require reclaimed water: commercial use (including nurseries), groundwater recharge, and industrial process (including cooling water), these being called “non-mandatory” types of use.

Where available in offsite facilities, reclaimed water may be used under the following conditions: for non-mandatory types of use being served potable water by the District at the time of this regulation’s adoption, for non-mandatory types of use associated with future development that would otherwise be served potable water by the District, for mandatory types of use within the District’s water service area not being served reclaimed or potable water by the District (having some other alternative source of supply), and for mandatory and non-mandatory types of use not within the District’s regular water service area and for which there are not legally conflicting service arrangements. Confirmation of this condition of use shall be established through the process set forth in Section 1.5.4 below whereby a letter of intent is obtained from the prospective user.

(c) Permitting: Regardless of type of condition or use, all prospective users shall successfully complete the use permit application process detailed in these regulations (see Section 3, Use Administrative Requirements) prior to receiving reclaimed water.

1.5.2 Funding Requirements

The various offsite and onsite reclaimed water facilities require capital and operating expenditures. The District shall seek the most advantageous financing for offsite facilities construction and, in its discretion, develop fiscally responsible programs to assist users with their financing efforts for requisite onsite facilities construction or conversion. The District shall seek the most economical operation and maintenance of the offsite facilities and encourage users in conservative operating practices.

1.5.3 Reclaimed Water System Implementation

(a) General: The Master Reclamation Plan is implemented through several actions, including those listed below. Implementation shall include one-time actions as well as ongoing and repetitive actions.

(b) Rules and Regulations: The District shall maintain these regulations governing the distribution and use of reclaimed water, including specifications for the construction of on-site reclaimed water facilities.

(c) Standard Specifications: The District shall maintain the Standard Specifications for the construction of off-site facilities. These shall include narrative and drawings that may be referenced for incorporation by project-specific construction documents.

(d) Public Awareness Program: The District shall maintain a comprehensive water reclamation public awareness program.

(e) Coordination Among Agencies: The District shall continue to examine the potential for a coordinated effort between the District and other regional agencies, including SOCRA, to share in the production and utilization of reclaimed water.

1.5.4 Procedures for Determining Mandated and Related Reclaimed Water Service

(a) Existing Potable Water Service: The District shall make preliminary determinations as to which existing potable water customers shall be converted to the use of reclaimed water; shall provide notice regarding that determination; shall receive objections to proposed service; entertain appeals, and provide a waiver if circumstances warrant; and shall complete the application process where waivers have not been granted in accordance with these regulations.

(b) Alternative Water Supply: The District may approach or be approached by prospective user(s) within the District's regular service area who currently utilize an alternative to the

District's reclaimed or potable water supply and who desire reclaimed water service. The District shall then make a preliminary determination whether the existing service(s) can be converted to the use of reclaimed water and shall provide notice regarding that determination along with a request for a letter of intent from the prospective user(s). The letter of intent shall substantially comply with the model format and content to be provided by the District. The District shall complete the application process where letters of intent have been received.

(c) Outside Regular Service Area: The District may approach or be approached by prospective user(s) outside the District's regular service area who currently utilize an alternative to the District's water supply and who desire reclaimed water service. The District shall then make a preliminary determination whether the existing service(s) can be converted to the use of reclaimed water and whether any legally conflicting service arrangements, express or implied, exist, and shall provide notice regarding that determination along with a request for a letter of intent from the prospective user(s). The balance of the process shall be the same as for Section 1.5.4(b).

(d) Notice: All the foregoing procedures for obtaining reclaimed water service require written notice by the District to the prospective user(s), which represents the District's preliminary determination. Such notice shall include as a minimum: descriptive information about the planned reclaimed water system, user responsibilities under these regulations, current reclaimed water pricing, descriptive information about onsite facilities requirements necessitated by conversion to reclaimed water, and the opportunity for objection.

(e) Objections, Appeals, Waivers: The prospective user(s) may file a notice of objection with the District within thirty (30) days after any notice of determination to comply is delivered or mailed to the prospective user(s), and may request reconsideration of the determination or modification of the proposed conditions or schedule for conversion. The objection must be in writing and specify the reasons for the objection. The preliminary determination shall be final if the prospective user(s) does not file a timely objection. Staff shall review the objection and shall confirm, modify, or abandon the preliminary determination. Upon issuance of a final determination by staff, the prospective user(s) may appeal the determination to the General Manager of the District. The District shall issue a waiver to the prospective user(s) where its objection or appeal is successful.

(f) Reclaimed Water Use Permit Process: Upon a final determination by the District that a property shall be served with reclaimed water, the prospective user(s), owner or applicant shall obtain a reclaimed water use permit in accordance with the application process detailed in these regulations.

(g) Temporary Use of Potable Water: At the discretion of the District, potable water may be made available on a temporary basis until reclaimed water is available. Before the applicant receives temporary potable water, a reclaimed water use permit, as required in Section 1.5.4(f), must be obtained for the onsite service, an inspection of the onsite facilities will be conducted to verify that the facilities have been maintained and are in compliance with the reclaimed water use permit and current requirements for service. Upon verification of compliance, reclaimed

water shall be served to the parcel for the intended use. If the facilities are not in compliance, the applicant shall be notified of the corrective actions necessary and shall have thirty (30) days to take such actions prior to initiation of enforcement proceedings.

1.5.5 Costs of Conversion to Reclaimed Water Service

(a) For an existing potable water use site, the cost for those modified or additional facilities necessitated by conversion from potable to reclaimed water use shall be borne by the potential user(s).

(b) For an existing water use site, the cost for those modified or additional facilities not necessitated by conversion from potable to reclaimed water shall be borne entirely by the potential user(s). For a site with new water use, regardless of whether the site was previously developed or is a newly developed site, the cost of those facilities required to accommodate reclaimed water shall be borne by the potential user(s).

1.5.6 Sanctions

(a) The District may implement all enforcement methods and penalties otherwise provided in these regulations to any violator of the terms of this Section 1.5.

(b) Where reclaimed water is available in offsite facilities, if after one hundred and eighty (180) calendar days from the date of the District's final determination under Section 1.5.4, the prospective user has not completed required onsite conversion work, then, in addition to those penalties set forth in subsection (a) above, the District shall impose a surcharge equal to fifty percent (50%) of its potable water rate in effect at the time of violation, such surcharge to be included in the customer's monthly billing."

Section 3. Validity. If any provision of this Resolution or the application thereof to any person or circumstance is held invalid, the remainder of the Resolution and the application of such provisions to other persons or circumstances shall not be affected thereby.

Section 4. Separability. If any portion of this Resolution is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions hereof.

Section 5. Conflicts. All District resolutions, or parts of District resolutions, and District Reclaimed Water Rules and Regulations, in conflict herewith, are hereby repealed.

Section 6. Incorporation. The terms of Section 2 of this Resolution are hereby incorporated as Section 1.5 et seq., in the Reclaimed Water Rules and Regulations, and such terms are effective as of the date of adoption of this Resolution.

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Section 7. Publication. New Section 1.5 of the Reclaimed Water Rules and Regulations shall be certified by the Secretary of MNWD, and the Secretary is hereby ordered and directed to publish Section 1.5 as set forth within once a week for two weeks in the *Orange County Register*, a newspaper of general circulation published in Orange County, California, pursuant to the provisions of Section 35424 of the California Water Code.

ADOPTED, SIGNED, AND APPROVED this 16th day of May 1996.

President/Vice President
MOULTON NIGUEL WATER DISTRICT and of
the Board of Directors thereof

Secretary
MOULTON NIGUEL WATER DISTRICT and of
the Board of Directors thereof

APPROVED AS TO FORM:

BOWIE, ARNESON, KADI,
WILES & GIANNONE
Legal Counsel – Moulton Niguel Water District

By _____
Patricia B. Giannone

-
STATE OF CALIFORNIA)
)
COUNTY OF ORANGE)

I, Leslie Gray-Perry, Secretary of the Board of Directors of the Moulton Niguel Water District, do hereby certify that the foregoing Resolution was adopted by the Board of Directors of the Moulton Niguel Water District at the annual meeting of said Board held on the 16th day of May 1996, and that it was so adopted by the following vote:

AYES: LIZOTTE, ELLSWORTH, FIORE, BUCK, KURTZ, GROSS, PEQUET

NOES:

ABSTAIN:

ABSENT:

Secretary, MOULTON NIGUEL WATER
DISTRICT

(SEAL)

-

APPENDIX 2

PRELIMINARY DETERMINATION NOTICE

Date

Address

Regarding: Notice of Preliminary Determination for Recycled Water Use

Dear Customer:

The Moulton Niguel Water District is constructing a recycled water system to reuse highly treated wastewater for irrigation purposes. This system has grown to include capacity in several water reclamation plants and a seasonal storage reservoir, pump stations, operational storage reservoirs, and approximately 70 miles of distribution piping throughout the District. The system reduces the need to import a limited and valuable resource. Recycled water customers receive a 20 percent discount on our irrigation water rate and a reliable water source during drought times.

The District's goal is to serve 1,100 sites with an annual demand of 10,000 acre-feet per year (3.3 billion gallons per year). These sites include golf courses, parks, school campuses, residential greenbelts, arterial slopes, street medians, and highway landscaping. To reach this goal, the District must convert approximately 20 sites per month from potable water to recycled water use. The District has identified the following site(s) owned by you that are candidates for conversion:

ID #	ACCOUNT	METER #	METER LOCATION

In the near future, as the District prepares to construct facilities that will convey recycled water to your site(s), a Notice of Final Determination will be sent to you. From that date, you will have 180 days to complete your site construction work and be prepared to receive recycled water supply.

District employees are available to perform an on-site walk-through and provide a punch list for on-site mitigation to be performed by the owner to meet minimum conversion requirements. Typical conversion mitigation includes the following retrofit work: removing the backflow device and potable water meter; providing identification of recycled water use by branding valve boxes, tagging valves, and tagging perimeter sprinkler heads; changing quick couplers; and checking for overspray and cross-connections with the potable water system.

-

The District is offering a loan at 6 percent interest, up to a maximum to \$2,500 per irrigated acre, for on-site retrofit costs. Loans are repaid by a \$0.25 per billing unit (bu) surcharge on the recycled water rate. The surcharge is nearly equal to the difference between the potable water irrigation rates (\$1.20 and \$1.30 per bu) and the recycled water rates (\$0.96 and \$1.04 per bu). Therefore, your landscape irrigation bills during the loan period will remain approximately the same as your current bills. After the loan is repaid, you will be saving about 20 percent on your irrigation bill.

Owners of sites not converted within the above-noted 180-day time period could be subject to a 50 percent surcharge on their potable water irrigation rates for the sites, as stipulated in the District's Mandatory Use Resolution, adopted by the District's Board of Directors on May 16, 1996. You may file a Notice of Objection with the District within 30 days by submitting a written request for reconsideration of the determination, modification of the proposed conditions, or adjustment of the conversion schedule.

Your support and cooperation during the conversion process is greatly appreciated. With your help, the District's recycled water system will be a success. Please contact David Blythe, Recycled Water Coordinator, at (949) 425-3549, for any additional information about the conversion process and loan, and to obtain a conversion schedule for your future sites.

Sincerely,

MOULTON NIGUEL WATER DISTRICT

Carlo H. Habash
Director of Engineering

-

APPENDIX 3

FINAL DETERMINATION NOTICE

Date

Address

Regarding: Notice of Final Determination for Recycled Water Use

Dear Customer:

The Moulton Niguel Water District is constructing a recycled water system to reuse highly treated wastewater for irrigation purposes. A Notice of Preliminary Determination was submitted to you some months ago, whereby you were notified that one or more of your irrigation sites were candidates for conversion from potable water to recycled water use. Construction is now proceeding on District facilities that will convey recycled water to your site(s).

Accordingly, the District has identified the following site(s) owned by you that need to be converted to recycled water use within the next 180 days:

ID #	ACCOUNT	METER #	METER LOCATION

More of your sites may need to be converted to use recycled water in the future. You have the option of converting both the future sites and the sites listed in the table now, or you may wait until you receive notice for the future sites.

District employees will be performing inspections at various stages of the on-site retrofit work associated with your conversion mitigation. You will be contacted in the next several weeks to initiate this process.

The District is offering a loan at 6 percent interest, up to a maximum to \$2,500 per irrigated acre, for on-site retrofit costs. Loans are repaid by a \$0.25 per billing unit (bu) surcharge on the recycled water rate.

The surcharge is nearly equal to the difference between the potable water irrigation rates (\$1.20 and \$1.30 per bu) and the recycled water rates (\$0.96 and \$1.04 per bu). Therefore, your landscape irrigation bills during the loan period will remain approximately the same as your current bills. After the loan is repaid, you will be saving about 20 percent on your irrigation bill.

-
Owners of sites not converted within the above-noted 180-day time period could be subject to a 50 percent surcharge on their potable water irrigation rates for the sites, as stipulated in the District's Mandatory Use Resolution, adopted by the District's Board of Directors on May 16, 1996. Your opportunity to file a Notice of Objection with the District expired 30 days after the District's submittal of its Notice of Preliminary Determination, now past.

Your support and cooperation during the conversion process is greatly appreciated. With your help, the District's recycled water system will be a success. Please contact David Blythe, Recycled Water Coordinator, at (949) 425-3549, for any additional information about the conversion process and loan, and to obtain a conversion schedule for your future sites.

Sincerely,

MOULTON NIGUEL WATER DISTRICT

Carlo H. Habash
Director of Engineering

**APPENDIX 4
CHECKLIST/ACTION REQUEST FORM
FOR OBTAINING RECYCLED WATER SERVICE**

Owner/Customer: _____ Use Site #: _____ Account #: _____

Project Name: _____ Tract No. _____ Lot No. _____

Date: _____

Location/Cross Streets _____ New Construction _____ Retrofit _____ Conversion _____

Specific Action Requested: _____ Date _____

Completed

- _____ 1. Applicant submits a preliminary package and plan to the District.
- _____ 2. District reviews for approval the preliminary package and plan.
- _____ 3. Preliminary approval granted, owner/customer proceeds with project, plan, and Appendix 6 Use Permit, submittals
- _____ 4. District reviews plans.
- _____ 5. The applicant submits to the District:
 - Completed irrigation plans for construction or retrofit
 - Work schedule for construction or conversion
 - Required fees
- _____ 6. District approves and signs plans, Appendix 5 - Application.
- _____ 7. District requests State Department of Health Services approval.
- _____ 8. State Health Department approval granted.
- _____ 9. Applicant/owner has operator (installation contractor/maintenance contractor) complete operation certification (Appendix 6 Use Permit) and submits form to District.
- _____ 10. Onsite pre-construction meeting date (applicant begins construction/retrofit of onsite facilities.)
- _____ 11. The District issues recycled water Use Permit (Appendix 6). (Copies are issued to owner and onsite supervisor.)
- _____ 12. Meter is installed. Potable water backflow prevention devices installed and tested (if applicable prior to water service activation).
- _____ 13. Applicant submits redline construction set of record drawings to the District for review.
- _____ 14. Applicant has a final set of record drawings prepared and submits all required documents to the District.
- _____ 15. Applicant requests final inspection by the District.
- _____ 16. District performs final inspection, operational testing, and cross-connection testing
- _____ 17. District grants final approval for recycled water service.
- _____ 18. District completes Appendix 6. Submits copies to SOCWA.

HOW TO USE THIS FORM: This form can be used by the applicant, District, DHS, and SOCWA to request specific action or items needed to complete the process for obtaining recycled water service. Complete each step in the sequence shown. Make sure the form is dated and signed. This checklist keeps all entities informed of the application process and the steps remaining to provide recycled water service.

-

**APPENDIX 5
MOULTON NIGUEL WATER DISTRICT
RECYCLED WATER SERVICE APPLICATION
(Please type)**

OWNER/CUSTOMER NAME: _____

ADDRESS: _____

CONTACT PERSON: _____ TITLE: _____

TELEPHONE: _____ FAX: _____ E-MAIL: _____

PROJECT/USE SITE NAME: _____

PROJECT/USE SITE ADDRESS OR LOCATION: _____

TRACT NO _____ PARCEL/LOT NO. _____

NEAREST ARTERIAL STREET NAMES: _____

LANDSCAPE ARCHITECT/ENGINEER NAME: _____

ADDRESS: _____

CONTACT PERSON: _____ TITLE: _____

TELEPHONE: _____ FAX: _____ E-MAIL: _____

THIS WILL BE A: NEW SYSTEM CONVERTED SYSTEM RETROFITTED SYSTEM

TYPE OF USE (CHECK ONE):

- | | | |
|---|---|---|
| <input type="checkbox"/> NURSERY/SOD CROPS | <input type="checkbox"/> LANDSCAPE-MISC | <input type="checkbox"/> PLAYGROUND/PARKS |
| <input type="checkbox"/> COMMERCIAL | <input type="checkbox"/> CEMETERIES | <input type="checkbox"/> SCHOOL YARDS |
| <input type="checkbox"/> GROUNDWATER RECHARGE | <input type="checkbox"/> FREEWAY/HIGHWAY | <input type="checkbox"/> ONSITE PLANT USE |
| <input type="checkbox"/> INDUSTRIAL-MISCELLANEOUS | <input type="checkbox"/> GOLF COURSES | <input type="checkbox"/> RECREATION |
| <input type="checkbox"/> INDUSTRIAL-COOLING WATER | <input type="checkbox"/> SLOPES, GREEN BELTS | <input type="checkbox"/> WILD HABITAT |
| <input type="checkbox"/> CONSTRUCTION | <input type="checkbox"/> IMPOUNDMENTS/FOUNTAINS | <input type="checkbox"/> OTHER: _____ |

SPECIAL CONDITIONS: _____

-

Please include the following items on all plans:

- * Potable/recycled water mainline and valve locations
- * All potable and recycled water lines
- * Specific recycled water use areas
- * Specific potable water use areas
- * Location of all wells
- * Location of all streams and water bodies
- * Equipment legends
- * Sewer facilities
- * Locations and descriptions of all backflow prevention devices
- * Location and size of all service connections and meters, including fire protection
- * Location of all drinking fountains
- * Buildings
- * Play areas and equipment
- * Ball fields and courts
- * Water features
- * District signature block
- * MNWD Standard Detail Drawing

Please also include a site location map and vicinity bodies.

I, the applicant have read and understand the MNWD Rules and Regulations for Recycled Water and agree to restrict recycled water use for the purposes described in this application. I agree to use recycled water in accordance with the Regulations and all other applicable documents. I understand that recycled water may not be compatible with certain types of vegetation because of its composition. I agree that MNWD and SOCWA will not be liable for damages that may occur to vegetation or for damages that may occur due to uses of recycled water. I hereby acknowledge and consent to MNWD's use at its option of recycled water in lieu of potable water for the purposes herein mentioned in accordance with the Regulations of MNWD and SOCWA and as may be required by Chapter 894 of the Statutes of 1978, the Water Code of the State of California and Section 2 of Article X of the California Constitution.

Applicant's Name: _____ Title: _____

Applicant's Signature: _____ Date: _____

**APPENDIX 6
MOULTON NIGUEL WATER DISTRICT
RECYCLED WATER USE PERMIT
(Please type)**

USE SITE NUMBER: _____ ACCOUNT NO: _____ METER NO: _____

(Completed by District)

USE SITE NAME: _____

USE SITE ADDRESS OR LOCATION: _____

NEAREST ARTERIAL STREET NAMES: _____

OWNER/CUSTOMER NAME: _____

ADDRESS: _____

CONTACT PERSON: _____ TITLE: _____

TELEPHONE NO: _____ FAX NO: _____ E-MAIL: _____

PROPERTY MANAGEMENT COMPANY: _____

ADDRESS: _____

CONTACT PERSON: _____ TITLE: _____

TELEPHONE NO: _____ FAX NO: _____ E-MAIL: _____

SPECIAL CONDITIONS: _____

Under penalty of perjury, I, the owner/customer swear that I have read and understand the MNWD Rules and Regulations for Recycled Water and agree to restrict recycled water use for the purposes described in this permit. I agree to use recycled water in accordance with the Regulations and all other applicable documents.

I understand that recycled water may not be compatible with certain types of vegetation because of its composition. I agree that MNWD and SOCWA will not be liable for damages that may occur to vegetation or for damages that may occur due to uses of recycled water. I hereby acknowledge and consent to MNWD's use at its option of recycled water in lieu of potable water for the purposes herein mentioned in accordance with the Regulations of MNWD and SOCWA and as may be required by Chapter 894 of the Statutes of 1978, the Water code of the State of California and Section 2 of Article X of the California constitution.

Owner/Customer's Signature: _____ Date: _____

MAINTENANCE COMPANY NAME: _____

ADDRESS: _____

ONSITE SUPERVISOR'S NAME: _____ TITLE: _____

TELEPHONE NO: _____ FAX NO _____ E-MAIL: _____

AFTER HOURS TELEPHONE NO _____

I have reviewed the MNWD Rules and Regulations for Recycled Water and certify that the operation and documentation of this recycled water system and other onsite water systems will be in accordance with all applicable requirements contained therein, including certification of the onsite supervisor, who is directly responsible for the education and training of all employees under his control and of any individuals performing work at a use site under his control.

Onsite Supervisor's Signature: _____ Date: _____

DISTRICT USE ONLY

I certify the recycled water system described above and the certification of the onsite supervisor who's name is shown above is in accordance with all applicable requirements contained in MNWD and SOCWA Rules and Regulations for Recycled Water.

Name: _____ Title: _____

Signature: _____ Date: _____

COPY OF USE PERMIT ISSUED TO OWNER/RESPONSIBLE PARTY, ONSITE SUPERVISOR

OWNER/RESPONSIBLE PARTY	ONSITE SUPERVISOR
DATE:	DATE:
BY: <input type="checkbox"/> MAIL	BY: <input type="checkbox"/> MAIL
<input type="checkbox"/> FAX	<input type="checkbox"/> FAX
<input type="checkbox"/> E-MAIL	<input type="checkbox"/> E-MAIL
<input type="checkbox"/> IN PERSON	<input type="checkbox"/> IN PERSON

**APPENDIX 7
AGENCY CONTACTS**

<u>Title</u>		<u>Phone Number</u>
State Department of Health Services (DHS)	Office of Drinking Water 28 Civic Center Plaza Santa Ana, California 92701	(714)558-4410
County of Orange Health Care Agency:	Water Quality Control Section 2009 East Edinger Avenue Santa Ana, California 92702	(949)667-3750
South Orange County Wastewater Authority	34156 Del Obispo Dana Point, California 92629	(949)234-5400
Moulton Niguel Water District:	Working Hours: Non-Working Hours: 27500 La Paz Road Laguna Niguel, California 92677	(949)425-3549 (949)831-2500

APPENDIX 8 DISTRICT GUIDELINES RELATED TO RECYCLED WATER PRODUCTION AND USE

Recycled water provided by the District is required to meet strict state and county guidelines. Title 22, Division 4 of the California Code of Regulations requires the District to meet Chapter 3, Water Criteria, and Article 1 Definitions 60301.230. Disinfected Tertiary Recycled Water, which states:

"Disinfected tertiary recycled water," means a filtered and subsequently disinfected wastewater that meets the following criteria:

- (a) The filtered wastewater has been disinfected by either:
 - (1) A chlorine disinfection process following filtration that provides a CT (the product of total chlorine residual and modal contact time measured at the same point) value of not less than 450 milligram-minutes per liter at all times with a modal contact time of at least 90 minutes, based on peak dry weather design flow; or
 - (2) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2 or polio virus in the wastewater. A virus that is at least as resistant to disinfection as poliovirus may be used for purposes of the demonstration.
- (b) The median concentration of total coliform bacteria measured in the disinfected effluent does not exceed an MPN of 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed and the number of total coliform bacteria does not exceed an MPN of 23 per 100 milliliters in more than one sample in any 30 day period. No sample shall exceed an MPN of 240 total coliform bacteria per 100 milliliters.

A. Chapter 7, Reclamation Article 1 Title of the California Water Code is known as Water Recycling Law. Article 2 Legislative Findings and Intent, Section 13511 Findings states:

- 1. The Legislature finds and declares that a substantial portion of the future water requirements of this state may be economically met by beneficial use of recycled water. The Legislature further finds and declares that the utilization of recycled water by local communities for domestic, agricultural, industrial, recreational, and fish and wildlife purposes will contribute to the peace, health, safety, and welfare of the people of the state. Use of recycled water constitutes the development of "new basic water supplies" as that term is used in Chapter 5 (commencing with Section 12880) of Part 6 of Division 6.

In addition, Section 13529 (F) states:

- 2. The use of recycled water has proven to be safe and the State Department of Health Services is drafting regulations to provide for expanded uses of recycled water.
- B. Workers shall be notified that recycled water is in use. Notification should include the posting of conspicuous identification signs with proper wording of sufficient size to be clearly read. It is recommended that this appendix be issued to all workers who come in contact with recycled water or equipment utilizing recycled water.
- C. In those locations where English is not the primary language of the workers, the signs and information shall be in the appropriate language as well as English.

-
- D. Workers should be informed of the potential health concerns involved with the ingestion of recycled water. (Contact your Physician for specific details.)
 - E. Precautionary measures should be taken to minimize worker contact with recycled water.
 - 1. Workers should not be subjected to direct recycled water sprays.
 - 2. Workers should be provided with protective clothing (rain gear/gloves) when there will be more than casual contact with recycled water.
 - F. Safe drinking should be supplied for workers. Where bottled water is provided, the water should be in contamination-proof containers, and be protected from recycled water and dust.
 - G. Potable hand-washing facilities should be provided. It is strongly recommended that before ingesting food or drink, and at the end of the work period, all workers wash with soap and water any parts of their body that may have come in contact with recycled water.
 - H. Precautions should be taken to avoid the contamination of food taken into recycled water use areas. Food should not be taken into areas still wet with recycled water. (Edible plants, fruits, and vegetables are prohibited to be grown in recycled water use areas.)
 - I. An adequate first aid kit should be available on-site. It is recommended that any worker who receives a cut, abrasion, or scratch receive proper medical attention after the accident to prevent possible infection or other complications.

**APPENDIX 9
RECYCLED WATER TESTING FORM/AGUA RECICLADA**

ONSITE TESTING AND MAINTENANCE REPORT/PRUEBA Y MANTENIMIENTO DEL LUGAR

Owner/Dueño:		Phone #/## Teléfono:	
Address/Domicilio:		Fax #:	
Date of Test Fecha de Prueba	Time of Test Hora de Prueba	From/De:	To/A:
Association/Asociacion:		Phone #/## Teléfono:	
Address/Domicilio:		Fax #:	
Account #/## de Cuenta:	Use Site #/## Numero de Sito:	Identification Letter/Letra de Identificación:	
Maintenance Contractor/Contratista de Mantenimiento:		Phone #/## Teléfono:	
Onsite Supervisor/Supervisor del Lugar:		Fax #:	
Address/Domicilio:			
Site Location/Direccion del Sitio o Lugar:			
Two Major Cross Streets/Calles Principales Que Pasen Cerca:			
1. Controller Operational Reloj Trabajando	12. Moisture Sensors Operational Sensor de Humedad Trabajando		
2. Hours of Operation Horas de operación	13. RW Identification Tags Attached Etiquetas de advertencia de RW		
3. Strainer Operational Coladera Trabajando	14. All Valve Box Lids Branded Tapaderas de cajas marcadas		
4. Master Valve Operational Válvula Maestra Trabajando	15. All Valve Box Lids Bolted Down Tapaderas de cajas atornilladas		
5. Flow Sensor Operational Sensor de Coriente Trabajando	16. RW Identification Sign On Site Anuncios de Advertencia de RW en el Lugar		
6. Booster Pump Operational Bomba Auxiliar Trabajando	17. Backflows Operational Backflows Trabajando		
7. Pressure Regulator Operational Regulador de Presión Trabajando	18. Drinking Fountains Protected Fuentes de agua protegidas		
8. PSI Static/Dynamic	19. Potable Identification Tags Attached Etiquetas de agua potable puestas		
9. Fertilizer Injector Operational Injector de Fertilizante Trabajando	20. Any Cross Connections Alguna conexión cruzada		
10. Quick Couplers Operational Quik Cuplers Trabajando	21. Approximate Temperature Temperatura aproximada		
11. QC Identification Tags Attached Etiquetas de advertencia pegadas a los QC	22. Approximate Wind Speed Velocidad del viento aproximado		
Repairs or Adjustments Performed/Reparaciones o Ajustes Hechos:			
Print name of person performing test Nombre inreso de la persona que hizo la prueba			
Signature of person performing test Firma de la persona que hizo la prueba			

APPENDIX 9 (continued)
RECYCLED WATER TESTING FORM/AGUA RECICLADA

COVERAGE TEST/PRUEBA DE CUBRIMIENTO

Controller Identification Letter/Letra de Identificación del Reloj: _____
 Place a YES or NO in each box as needed/Ponga SI or NO en la cada cuadro segun sea necesario

Control Valve	Overspray	Corrected	Run Off	Corrected	Ponding	Corrected	Check Valves at Base of Heads	(Anti Drain Valves) Operational	Minutes of Run Time	Cycles Per Day
Válvula de Control	Cubra de mas	Corregida	Se tira Mucha Aqua	Corregida	Agua Estancada	Corregida			Minutos Que Riega	Tiempos Que Prende en un Dia
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
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PROVISIONS

PROVISION 1

PLANS AND SPECIFICATIONS

The following shall be shown on the plans:

- All drinking fountains
- Water features
- Fire hydrants
- Exterior tables/benches
- Play areas
- Hardscape (including walls, fencing, drainage devices.)
- Buildings
- Ball field layouts
- All recycled water lines
- All potable water lines
- All non-potable water lines
- Location and size of all service connections and meters
- Location, size, and type of all backflow devices
- Specifically state on plans if there is no potable water on site
- Fire protection
- Vicinity and Index map

Meter Criteria - The following irrigation meter criteria information should be included in each set of plans adjacent to each meter:

- Tract and Lot Numbers or Parcel Map Number _____
- Use Site Number _____
- Meter Size _____
- Elevation _____
- Zone/HGL _____
- POC Static Pressure _____ psi
- Required Dynamic Pressure Onsite _____ psi
- Average Application Rate _____ gpm/acre
- Maximum Application Rate _____ gpm/acre
- Area Served _____ acres (irrigated)
- Annual Water Use _____ acre ft/yr

Irrigation Criteria - A legend showing the pertinent data for the materials used in the system shall be recorded on the plans. The legend shall include a pipe schedule listing pipe sizes and type of materials of construction, and all related appurtenances including their size, model number, and description. Provide a detail for the installation of all proposed appurtenances. NOTE: The use of the District's standard detail drawings is mandatory (available at www.mnwd.com) and controller timing charts showing maximum hours of operation per day.

Moulton Niguel Water District Standard Notes

The Standard Notes are to be listed on the plans.

1. The design, installation, identification and use of all onsite potable water systems, fire protection systems, potable water used for irrigation systems and recycled water irrigation systems shall conform to all State, County, AWWA, SOCWA and District rules, regulations, guidelines, articles and codes regarding the design, installation, identification, use and maintenance of onsite systems and protection of the public's health. The Contractor shall have a copy of these plans and the District Standard Specifications on the job at all times.
2. No construction shall take place without all required approvals and signatures on the plans.
3. The District shall be furnished with three (3) copies of the approved construction plans prior to starting construction. A mandatory pre-construction meeting shall be held on the jobsite a minimum of 24 hours prior to the start of construction. No work shall take place without a pre-construction meeting onsite.
4. The District's inspector shall be notified a minimum of two days (48 hours) prior to construction, or any inspection.
5. All potable and recycled water meters, backflow assemblies, and related appurtenances shall be installed, inspected, and tested per District specifications before any recycled water use can take place.
6. Onsite Separation Requirements:

Horizontal Separation: The pressurized recycled water piping shall maintain a ten (10) foot horizontal separation at all times from all potable water piping and/or a parallel sanitary sewer system. If a 10-foot horizontal separation is not possible, special construction requirements shall be considered, refer to District standard detail drawing IRR-13. Common trench construction is prohibited.

Vertical Separation: The pressurized recycled water piping shall maintain a minimum one foot vertical separation at all times from all pressurized potable water piping and/or a sanitary sewer system. The pressurized recycled water piping shall be installed one foot below all pressurized potable water piping and one foot above all sanitary sewer systems.

-
If a one foot vertical separation is not possible, special construction requirements shall be considered, refer to District standard detail drawing IRR-13.

7. Quick coupling valves on recycled water irrigation mainline may be required to be removed at the end of the maintenance period. If the quick coupling valves are required to be removed, the District shall determine the manner of removal.
8. Adjust all sprinkler, impact and rotor heads and drip systems to minimize direct overspray, windblown spray, ponding and runoff, onto non-irrigated areas.
9. The installation of internal, external, or in-line anti-drain valves are mandatory to prevent low-head drainage immediately after the remote control valve has closed.
10. Any deviations from the signed and approved set of plans must be approved in writing prior to installation by the design consultant and the District. Any revision must be submitted to the design consultant and the District for approval. Failure to comply will result in a "STOP WORK NOTICE."
11. Final coverage tests must be performed and passed before a final release will be issued. Direct overspray, windblown spray, ponding, and runoff onto non-irrigated areas are to be minimized.
12. Cross-connection tests shall be performed on all water systems, including existing and future recycled water irrigation systems, and all potable and non-potable water systems, as determined by the District prior to the use of recycled water. All cross-connection tests must be performed and passed before a final release will be issued.
13. The entire irrigation system and its appurtenances, as well as all onsite facilities and appurtenances shall be inspected and reviewed by the District. Final inspections/site reviews must be performed and passed by the District before a final release will be issued.
14. Unless directed otherwise by the District, recycled water system regular hours of operation are as follows:
 - Turf areas and center street medians - between 6:00 p.m. and 6:00 a.m.
 - Slopes and groundcover/shrub areas - any hour
 - Golf courses - fill impoundments between 4:00 a.m. and 6:00 p.m.

The consideration for potential public contact with recycled water shall take precedence over all recycled watering schedules. All irrigation systems run times shall be adjusted to minimize contact with recycled water on an individual lateral system basis. The District may require specific run times and durations where there is a history of public contact.

-
15. The following information must be submitted to the District before a final release will be issued:
 - a. One complete set of District approved 4-mil-thick reproducible photo/fixline mylar record plans. (NOTE: All record drawing information must be reviewed and approved in writing by the design consultant and the District before producing the mylars, etc., for submittal to the District.) Final record plans shall be professionally drafted as determined by the District.
 - b. One complete set of District approved record blue-line plans. One complete set shall include cover sheet, irrigation sheets, and all irrigation detail and note sheets.
 - c. One 60# bond paper 11" x 16" color control charts, one set for each point of connection. One 60# bond paper 11" x 16" color control charts, hermetically sealed in a 6-mil-thick laminated pouch, one set for each point of connection.
 - d. Completed District backflow investigation and test reports for all backflow prevention assemblies on site. Submit to the District.
 - e. Certificates of substantial compliance, calibration, acceptance and/or proper installation/operation of the irrigation system and appurtenances as deemed necessary by the District.
 - f. Completed District recycled water Appendix 6/Use Permit form for each recycled water point of connection.
 16. Failure to comply with any of the prior provisions and/or any other of the Rules and Regulations will place the system in violation of the Rules and Regulations and will result in a stop work notice and/or termination of service until appropriate corrective steps have been taken.

Additional notes may be added, as appropriate.

PROVISION 2

APPLICATION RATES

Average and maximum application rates. All irrigation systems must not exceed the District's values for flat and slope areas.

Flat area:	Average Application Rate	15 gpm/acre
	Maximum Application Rate	20 gpm/acre
Slope area:	Average Application Rate	10 gpm/acre
	Maximum Application Rate	15 gpm/acre

Use the following formulas to calculate all application rates:

Use Sites Under One Acre

Average Application Rates:

Add up gallons per minute for each valve, then divide by total number of valves.

Maximum Application Rates:

Highest maximum valve gallons per minute multiplied by total irrigated acreage .

Use Sites Over One Acre

Average Application Rates:

Add up gallons per minute for each valve, then divide by total number of valves. Then divide by total irrigated acreage.

Maximum Application Rates:

Highest maximum valve gallons per minute divided by total irrigated acreage.

PROVISION 3

MINIMUM REQUIREMENTS OF PIPING, FITTINGS, AND APPURTENANCES

The class or schedule of piping and fittings shall as a minimum is as follows:

1. Cast-iron fittings for A.C.P.: ANSI 21.10 and AWWA C110.
2. Galvanized steel: Schedule 40, mild steel screwed pipe.
3. Galvanized malleable iron fittings: ANSI B-16.3.1.
4. Hard drawn copper Type K: ANSI H-26.1 and ASTM B 88.
5. Wrought copper or bronze solder fittings: ANSI B.16.22.
6. Tubing for drip irrigation systems: Manufactured from virgin polyethylene conforming to ASTM D 1248, Type II, Class C, or approved equals, such as Elastolene and Polybutylene.
7. Brass pipe and fittings: Schedule 40.
8. Recycled water identification products shall be used where available.
9. PVC constant pressure main line piping 4 inches and larger: Ring Tite, PVC Class 315RT or a class as approved by the District.
10. PVC constant pressure main line piping 2 and 3 inches: solvent weld joint, PVC Class 315.
11. PVC constant pressure main line piping 1½ inches and smaller: Solvent weld joint, PVC Schedule 40.
12. PVC intermittent pressure lateral line piping: Solvent weld joint, PVC Class 200, PVC Class 315, or Schedule 40.
13. PVC sleeving: solvent weld joint, Class 200, 200 psi rated pipe or greater.
14. PVC fittings: All pressure mainline fittings shall be PVC Schedule 40 or 80 solvent weld or threaded and factory manufactured. All non-pressure fitting shall be Schedule 40 or 80 solvent weld or threaded and factory manufactured.
15. PVC plastic pipe and fittings shall be installed below grade, except ultra violet protected pipe and fittings.

16. All PVC pipe shall be made from Grade I compound conforming to ASTM D 1784.
17. All PVC Schedule 40 and Schedule 80 pipe shall be manufactured conforming to ASTM D 1785 and D 2466 and shall meet requirements set forth in Federal specification PS-21.
18. All Schedule 40, Schedule 80, and Class 315 solvent weld and Ring Tite pipe shall be manufactured conforming to ASTM D 2241 and meet requirements set forth in Federal specification PS-22, with standard dimension ratio for pressure rated pipe. Pipe shall be extruded from approved Class 12454-PVC with resin specifications conforming to ASTM D 1784 and rubber rings conforming to ASTM D 169.
19. All pipes shall be homogeneous throughout, free from visible cracks, holes, or foreign materials. The pipe shall be free from blisters, dents, wrinkles or ripples, die, and heat marks.
20. All PVC plastic pipefittings shall be rigid PVC virgin Type I, minimum Schedule 40, with working pressure no lower than that of the pipe. Sockets shall be tapered to conform to the outside diameter of the pipe, as recommended by the pipe manufacturer. All Schedule 40 fittings shall conform to ASTM D 2466. Schedule 80 fittings shall conform to ASTM D 2464 and D 2467. (All pressurized mainline fittings past the master valve shall be Schedule 80.)
21. All fittings shall be injection molded of improved PVC fitting compound featuring high tensile strength, high chemical resistance, and high strength. The compound must meet the requirements described in ASTM D 1784 and D 2466, cell classification 13454B. Where threads are required for plastic fittings, they shall also be injected molded. All tees and ells shall be side gated. (All pressurized mainline fittings past the master valve shall be Schedule 80.)
22. PVC solvent cement shall conform to ASTM D 2564. Piping solvent cement shall be low VOC PVC heavy bodied industrial quality – medium setting, gray in color. For all PVC Schedules, UPC N.S.F. approved. (Fast setting cements are prohibited.) Piping solvent shall be low VOC PVC/CPUC purple primer. A deep etching, slow acting, high quality purple primer UPC N.S.F. approved.
23. Brass and galvanized Schedule 40 piping, wrap piping with UPC 10 mil black pipe wrap plumbers tape when buried per UPC.
24. The use of approved piping primers, glues, pipe, dope, Teflon tape, and manufacturers recommended assembly practices shall be mandatory.
25. Drip systems per manufacturer's specifications.

26. Bell end piping shall be installed with bell end on inlet side of pipe on flat areas and on uphill side for slope applications.
27. Water/garden hoses and hose appurtenances utilizing recycled water shall be purple in color with heavy-duty brass fittings. Hoses shall be continuously imprinted with "Caution; Recycled/reclaimed Water – Do Not Drink" and rated at 150 psi working pressure. Hoses shall only be used for recycled water use. Potable water use at anytime is strictly prohibited.
28. Quick coupling valves may be required to be removed if they are used in contrary to District regulations or are located in an area that encourages unauthorized use. The manner of removal shall be subject to approval by the District. Quick coupling valves shall conform to the following:

Rating - Quick coupling valves shall be 3/4-inch or one-inch nominal size with brass construction, acme thread body and key, and a normal working pressure of 125 psi. All quick coupler valves used for recycled water shall be of a design that prevents the quick coupler key (spike) from being used in potable water quick couplers.

Cover - The cover shall be permanently attached to the quick coupling valve. It shall be purple in color and made of rubber or vinyl with the following information stamped or molded on the cover or other approved equal:

1. "Recycled Water" in English and Spanish;
 2. "Do Not Drink" in English and Spanish; or
 3. The international "Do Not Drink" symbol: A glass of water in a circle with a slash through it.
 4. Locking cover.
29. Mainline valves shall be of the type and manufacture shown on the plans or approved equal. All underground gate and ball valves three inches and smaller shall be threaded bronze bodies furnished with handwheels.

All gate and ball valves larger than three inches shall be flanged with cast iron bodies and two-inch square operating nuts.

Ball valves required directly behind meter box or above ground before the strainer shall be Wilkins #850 full port ball valves or approved equal.

30. Valve Boxes:

All remote control valves, gate valves, quick coupling, drip valve assemblies, flush valve assemblies, manual drain valves, and pressure relief valves shall be installed in suitable valve boxes, complete with locking and hinged cover, or other approved secure enclosure. Recycled water valve boxes and covers must be colored purple and have recycled water identification imprinted. All valve box covers shall be bolted down with stainless steel bolts and washers.

31. WYE Strainer/Basket Strainer:

Strainers shall have cast bronze or iron body. Screen shall be 80 mesh minimum, stainless steel screens. Automatic flushing is prohibited.

32. Irrigation Heads

Recycled water irrigation identification products shall be used whenever possible. All onsite irrigation (sprinkler) heads shall conform to the following:

Rating - Sprinkler heads shall be the types and sizes with the radius of throw, pressure, discharge, and any other designations, as indicated on the plans. All irrigation heads shall have internal check valves.

Manufacture - All heads of a particular type of function in the system shall be of the same manufacture and shall be marked with the manufacturer's name and identification in such a position that they can be identified without being removed from the system.

Adjustable-arc, adjustable-radius heads/nozzles - Shall be used whenever possible, and shall be mandatory at site perimeters, walks, play areas, along non-vegetated areas, hardscape, and near picnic tables/benches and drinking fountains.

Risers - All sprinkler risers shall be as shown on the plans. All risers shall be considered aboveground piping. This includes existing risers on systems to be retrofitted to recycled water use.

Nozzle screens – All sprinkler nozzles shall utilize pressure compensating screens where available to eliminate fogging and pressure variations.

Substitutions - Any substitutions by the contractor for items specified on the Plans must be submitted to the design consultant and District for approval.

33. Above ground pipe stabilizer:

All above ground pipe stabilizers, sprinkle and riser stabilizers shall be manufactured by V.I.T. Products, Inc. or approved equal.

Sprinkler heads shall be securely installed to minimize breakage, utilizing V.I.T. brand sprinkler stabilizer systems and V.I.T. brand sprinkler ties or approved equal.

34. External Check Valves:

Install external check valves at all heads, bubblers, or lateral lines that exceed manufacturer's internal check valve requirements. Minimize all irrigation runoff at each

head or bubbler immediately after valve has closed; by installing appropriate inline check valves to the satisfaction of the District.

35. System Control Devices:

All onsite irrigation controllers and appurtenances shall conform to the following:

Type - Automatic controllers shall be UL listed of the type and manufacture shown on the plans or approved equal. Each controller shall be capable of eight repeats daily with 16-day variable cycles minimum. The controller shall have a water budget feature. It shall have remote start capability. It must be compatible with the master valve and flow sensor. It must have power outage time keeping capability. It must be capable of closing master valve when flow design parameters are exceeded. All irrigation system controllers shall be programmed to run sequentially to facilitate testing. Example: being from one end of the system to the other.

36. Electrical wiring:

Remote Control Valves - All 24 volt control wiring shall be direct burial solid copper wire AWG-UF 600 volt #14 or larger. Common wire is to be white, control wires to be color-coded. (Conforming to Underwriters Laboratories (UL) wire and cable) Install wiring in same trench as pressure supply line with wires consistently located below and to one side of the pipe or in separate trenches. Multiple wires shall be taped together at intervals of 10 feet. Utilize 3M-brand 3/4" black electrical tape within wiring sleeves.

Electrical splices - No splices shall be made between controller and remote control valve. Loop 24" of excess wire into each valve box.

Where splices or repairs are absolutely necessary, they must be located in a 9" round splice box utilizing a 24" coil of excess wire at each splice located within the splice box.

Provide a 24" coil of wire, 100' on center, along all wire runs.

A spare common wire and 3 spare color-coded control wires shall be run to the last control valve. Provide a 1" diameter 24" long coil of wire, to be located in the last control valve box.

Control wiring splices - Utilize 3M brand direct bury splice kits. For two wire connections, use DB, for three or four wire connections, use DBR or approved equal.

37. Wind anemometers:

Wind anemometers that shut down the irrigation system, that are compatible with the specified controller for new systems or retrofitted systems are required when wind speed or direction, in the opinion of the District, greatly affect the system coverage.

38. Rain sensor shutoff modules:

All irrigation controllers shall be equipped with a rain sensor module that shuts down the irrigation system during rainy conditions. Exceptions to the above would be centralized irrigation systems utilizing a centrally located weather station.

39. Moisture sensors/tensiometers:

Recommended on all newly constructed and retrofitted irrigation systems. (Install per Manufacturer's recommendation.)

40. Inline Pressure Regulator:

Recycled water inline pressure regulators smaller than 3 inches shall have a cast bronze body. The screens shall be stainless steel. Pressure regulators may be utilized in place of the pressure-regulating feature as part of the master valve requirement.

41. Master Valve:

Recycled water master valve shall be a cast bronze or iron (cast iron valves shall be epoxy coated) pressure regulating (manually and electrically) contamination proof, self-flushing-cleaning style valves, and normally closed position valve. Only valves that utilize reverse flow and fail in the closed position shall be utilized.

42. Flow Sensor:

The recycled water flow sensor must be compatible with the controller and master valve. The flow sensor must have high flow shut off capability for all remote control valves and irrigation system mainlines.

43. Remote Control Valves:

Recycled water remote control valves can have purple plastic or brass bodies and bonnets. Purple valve handles shall be used. They shall be contamination proof, self flushing-cleaning style valves. It shall be pressure regulating (manually and electrically) where required due to elevation changes, normally closed positioned valve. Only valves that utilize reverse flow and fail in the closed position shall be utilized.

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44. **Booster Pumps:**

Booster pumps and assemblies shall be approved on an individual basis.

PROVISION 4

INSPECTION ITEMS

1. Plans (approved and signed by all regulatory agencies)
2. Pre-construction meeting onsite
3. Materials
4. Trenching
5. Mainlines (including sleeving where applicable)
6. Identification tape (recycled and domestic)
7. Meter and box setting
8. Mainline record drawing
9. Pressure test (Provision 5, Testing Provisions)
10. All valves (master valves, control valves, quick couplers, gate valves, pressure regulating valves, ball valves, etc.)
11. Lateral lines
12. All sprinkler heads and emitters
13. Drip lines and emitters
14. Backflows, all strainers
15. Irrigation pumps
16. Valve box and cover identification, bolted down with stainless steel bolts and washers
17. Wye or basket strainer (Verify 80 mesh Monel screen)
18. Quick coupling valve - locations and installation
19. Piping - required identification
20. Pipe anchors - secure proper spacing

21. Sprinkler heads - required identification
22. Sprinkler risers - required identification
23. External check valves - as necessary to prevent drainage after valve is closed
24. Site identification requirements
25. That all phases of the work are completed and installed in accordance with plans and specifications
26. Complete review of site and irrigation system installation
27. Submittal and approval of all calibration/test reports, certificates and written approvals.
Submittal of letters of project acceptance from the irrigation designer and landscape architect.
28. Coverage tests
29. Cross connection tests to be performed and passed on all potable, non-potable, and recycled water points of connection
30. Record drawings' package, review, approval, and submittal
31. Controller installation, operation, setup, parameters, and hours of operation
32. Moisture sensor/automatic rain shutoff calibration and operation
33. Wind anemometer calibration and operation
34. Booster pump operation
35. Fertilizer injector operation
36. Pressure regulator setting (Per plan specifications)
37. Master valve and remote control valve - pressure-settings (Per plan specifications)
38. Wiring - expansion coils; identification color; installation at controller, wire connectors

PROVISION 5

TESTING PROVISIONS

New piping systems shall be subjected to a 4-hour hydrostatic pressure test as determined by the design consultant at 120 percent of maximum static operating pressure of the pipe or 150 psi, whichever is greater. (See schedule below) The testing shall be conducted by the contractor in the presence of the District inspector. For systems with static operating pressures less than 125 psi, the four-hour pressure test shall be 150 psi. For systems with pressures over 125 psi, the test will be based on 120% of static system pressure. The District may require the tests by a State-certified testing company who will provide certified testing results to the District if the systems fail more than two tests. Before testing, the pipe shall be center-loaded to hold the pipe in place while testing. The water necessary to maintain this pressure shall be measured through a meter or other means satisfactory to the inspector. The leakage shall be considered as the amount of water entering the pipe during the test, less the measured leakage through valves and bulkheads. Any noticeable leaks shall be stopped and any defective pipe shall be replaced with new sections. Couplings shall be kept to a minimum.

HYDROSTATIC PRESSURE TESTING CHART SCHEDULE

125 psi x 120%	= 150 psi
130 psi x 120%	= 156 psi
135 psi x 120%	= 162 psi
140 psi x 120%	= 168 psi
145 psi x 120%	= 174 psi
150 psi x 120%	= 180 psi

For systems with 4-inch diameter pressure main lines, a State-certified testing company must provide certified testing results for all hydrostatic testing.

The test shall be made prior to connecting the new piping system with existing systems or a service connection. The test shall be conducted with gate valves, master valves and ball valves open, and the open ends of pipes, valves, and fittings suitably plugged. Valves shall be open during the test period.

All concrete thrust blocks shall be allowed to cure to develop design strength prior to testing. All labor, materials, tools, and equipment for the testing shall be furnished by the contractor.

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- Operational Testing

Prior to final acceptance by the District, all onsite recycled and potable water systems shall pass an operational test within 30 days of the completed irrigation system installation. The test shall be conducted by the contractor in the presence of the District Inspector. The scheduling of these tests shall be the responsibility of the contractor. The contractor shall provide adequate manpower.

The following items shall be examined:

- All items as stated in the final inspection requirements (Provision 4)
- Operation and programming/set-up of the automatic controllers and related appurtenances.
- General operation and coverage of the irrigation system.
- Required backflow protection and all backflow test reports of the onsite potable water systems.
- Cross connection testing for all points of connection.
- Site and appurtenance identification requirements as determined by the District Inspector.
- As-built package review and submittal

The District shall note all required corrections in the form of a punch list issued to the contractor. Regular service startup shall not be authorized until all corrections are made to the satisfaction of the District. Punch list is valid for 30 days only.

PROVISION 6

ONSITE RECYCLED WATER RETROFIT PROCEDURES

The following are retrofit procedure requirements that shall be adhered to by the owner. The District will provide coordination and inspection assistance in retrofitting these irrigation systems. (All onsite retrofit costs/expenses shall be the owner's sole responsibility.)

1. Submit to the District a completed application for recycled water service (Appendix 5)
2. Submit to the District one set of irrigation plans and/or a record drawing of the site, irrigation system, and all potable water systems onsite. (An example plan of the minimum requirements needed is available from the District upon request.)
3. Preliminary site inspections are intended to inform the owner of the site identification, backflow prevention, onsite separation requirements, and other issues regarding the retrofit of the use site to recycled water.
4. Preliminary coverage tests are intended to assure compliance with District regulations regarding direct spray, windblown spray, overspray, ponding, and runoff. Irrigation sprinkler heads may be required to be replaced and/or plant materials trimmed or removed to accomplish the Rules and Regulations.
5. Preliminary cross-connection tests are required to assure that no cross connections exist between the irrigation systems and any potable water sources. (See Provision 9 Cross-Connection Testing Procedures.) Any cross connections found between potable water systems and future recycled water systems shall be eliminated prior to retrofit.
6. A recycled water point of connection and irrigation system(s) shall serve only one property as recorded with the County of Orange. (See Section 4.1.6 System Layout)
7. Remove existing quick-coupling valves per District regulations or change out to brass ACME thread recycled water style quick-coupling valves. The locking cover shall be purple rubber or vinyl with the following information stamped or molded into the cover:
 - a. "Recycled Water" in English and Spanish
 - b. "Do Not Drink" in English and Spanish
 - c. The international "Do Not Drink" symbol: A glass of water in a circle with a slash through it.
8. Remove all existing hose bibbs whose water source is supplied by the irrigation system to be retrofitted. (Hose bibbs are prohibited on recycled water systems.)
9. Attach purple recycled water identification tags in English and Spanish to all recycled water appurtenances. (Remote control valves, gate valves, Wye strainers, etc.) (See standard detail drawing IRR-26)

10. Identify all above ground pressure and non-pressure recycled water piping, as recycled water by attaching purple recycled water identification labels to the piping at five foot intervals. (See standard detail drawing IRR-25)
11. Identify all sprinkler heads with purple recycled water identification materials. Other heads may require identification as determined by District.
12. Identify all sprinkler, bubbler, or drip system risers with purple recycled water identification labels in English and Spanish. (See standard detail drawing IRR-26)
13. Install check valves below any sprinkler head or bubbler head where run-off occurs after the control valve has been shut down. Note: The Owner has the option to replace affected sprinkler heads with recycled water style heads that have built in check valves and purple recycled water identification caps. Minimize runoff after the control valve has been shutdown.
14. All on site pressurized recycled water mainlines are required to maintain minimum horizontal and vertical separations from all pressurized potable water piping, and sanitary sewer systems as specified in standard detail drawing IRR-13.

To locate irrigation and other potable water lines, wire tracing, electronic testing/tracing or other methods shall be required.

Suspect piping shall be required to be exposed for verification of separation requirements. All exposed potable and recycled water piping shall have appropriate identification tapes attached to them, to the satisfaction of the District.

Sleeving of mainlines may be used under certain circumstances to address the separation issues in areas near fire hydrants, backflow assemblies, and potable water lines and services as directed and approved by the District.

Common trenching is prohibited. The relocation of pressurized potable water lines may be required to meet District separation requirements.

Pressurized potable water piping shall be required to be relocated if minimum separation requirements cannot be met. In some cases, the pressurized recycled water piping may be relocated in place of the potable water piping as determined and approved by the District.

15. All potable water service points of connection shall have backflow prevention assemblies as determined by the District. All backflow assemblies must be tested before recycled water is used on site. (Submit the completed test reports to the recycled water inspector.)

District minimum requirements for public water supply backflow protection are as follows: Approved reduced pressure principal assemblies for all potable water points of connection and double-check detector check assemblies for all potable water fire

protection points of connection. Other backflow prevention devices may be required, to protect public health, as determined by the District.

16. Mark or identify all valve box lids per District regulations to identify them as recycled water, potable water, non-potable or "potable water used for irrigation" and type of appurtenance enclosed. Other valve boxes or enclosures shall be identified as "Recycled Water", "Potable Water", "Non-Potable", or "Potable Water Used for Irrigation," and as directed by MNWD. (See standard detail drawing IRR-24) Bolt down all valve box covers with stainless steel bolts and washers.

Green valve box covers utilizing recycled water shall be identified as recycled water use by attaching purple 1 1/4" x 5 3/4" recycled water identification valve box name plate. (Or changed out to purple recycled water valve box and covers.)

17. Attach blue "Potable Water" or lime-green "Potable Water Used for Irrigation" identification tags, in English and Spanish, to all potable water exterior appurtenances and potable water used for irrigation appurtenances. (Remote control valves, gate valves, backflows, etc. and as directed by MNWD) (See standard detail drawing IRR-26)
18. Identify all above ground potable water, potable water used for irrigation pressure piping, and potable water used for irrigation non-pressure piping, and irrigation system risers as "Potable Water Used for Irrigation" by attaching lime-green identification labels stating "Potable Water Used for Irrigation" in English and Spanish, at five foot intervals, and as directed by MNWD) (See standard detail drawing IRR-26)
19. Protect drinking fountains from recycled water by placing drinking fountains away from recycled water areas or protecting the drinking fountains to the satisfaction of The District and State and County Departments of Health Services. (See standard detail drawing IRR-30)
20. Drinking fountains, buildings and other potable water appurtenances shall be protected from potable water quick-coupling valves, if any, when they use the same main line by an approved reduced pressure, principle backflow assembly, placed between the quick-couplers and drinking fountain or buildings. Backflow prevention assembly locations to be determined by MNWD.
21. All onsite exterior potable water hose bibbs shall have brass hose bib vacuum breaker devices attached to them. Potable water identification tags shall also be attached to the hose bibbs other methods may also be required as per District.
22. Any connections between potable water systems, potable water irrigation systems, and the recycled water systems are prohibited. It shall be mandatory to disconnect the irrigation system from the potable water meter and remove the backflow prevention assembly from the irrigation system prior to connecting the system to recycled water. (This work shall be coordinated with the District's recycled water inspector.)

23. Existing potable water used for irrigation meters will be removed from the potable water points of connection (POC) by The District. The owner of record is responsible for purchasing and installing new potable backflow public water supply protection, backflow assembly devices, at use sites where the existing potable water will need to remain in place for onsite use, following District specifications and procedures for installation.
24. Make the connection to the recycled water meter; using Class 315, purple PVC recycled water piping. For piping with diameters of four inches or greater, use piping as approved by The District on a case-by-case basis.
25. Install a Wilkins #850 resilient-seat full port ball valve or approved equal, and a line size 80 mesh Wye strainer or basket strainer with 80-mesh Monel screen immediately after the recycled water meter. Locations to be determined by the District.
26. Attach recycled water identification labels to controller door face and controller enclosure face (supplied by MNWD).
27. Place a minimum of 2 recycled water identification signs (1/16" aluminum, 12" x 18") in locations designated by MNWD. Additional signage may be necessary due to site considerations and access. The District supplies signage.
28. The irrigation controller shall operate recycled water systems only. (Example: a single controller cannot operate a potable water irrigation system and a recycled water irrigation system). All systems must remain separate. The District may make special consideration(s) on a case-by-case basis.
29. Submit to the District record irrigation drawings and record drawing information for all irrigation systems receiving recycled water as well as any non-potable water systems, potable water systems and/or potable water used for irrigation systems within the same use site on 30" x 42" record blue or black line drawing sheets, which shall include cover sheets, record irrigation sheets, irrigation legend detail sheets and any other sheets pertaining to the irrigation system or other onsite systems and their specifications, if available in final record form for each point of connection, controller and/or sheets of irrigation drawings.
Requirements for Potable Water, Recycled, and Potable Water Used for Irrigation Systems:
 1. One complete set of District approved blue or black line record drawings
 2. 60# bond paper 11" x 16" color control charts, one set for each point of connection
 3. 60# bond paper 11" x 16" color control charts, hermetically sealed in a 6-mil laminated pouch, one set for each point of connection (See District-provided example record drawing for minimum requirements to be shown, for sites with no existing record drawings or plans.) All record drawings shall be dimensioned. All dimensions shall be taken from two permanent

points of reference, such as buildings, monuments, sidewalks, curbs, or hardscape. (Final record drawings shall be professionally drafted, to the satisfaction of The District.)

NOTE: (Submit Redlines for approval by District, prior to submitting the items listed above.)

30. Prior to activating water service, the District will perform final inspection and final coverage tests to assure compliance with District regulations. Included in the final inspection are cross connection tests to assure that no cross connections exist between the recycled water irrigation system and any potable water sources.
31. Operate and maintain the irrigation system in the same operating conditions as it was when MNWD issued its final release. Comply with all MNWD Rules and Regulations regarding the use of recycled water.
32. MNWD regulations require monthly onsite testing and maintenance reports to be completed and available to MNWD. (See Section 6.2, Onsite Irrigation Systems, 6.2.1 Supervision, and Appendix 9)
33. Notify MNWD when any revision, upgrade, alteration or repair is anticipated or performed to the recycled and potable water used for irrigation systems, onsite potable water systems, or their related components. MNWD must approve all plans concerning changes to onsite recycled water systems, potable water used for irrigation systems, and all potable water systems. Inspections for all the above are mandatory.
34. Certain precautions should be taken when recycled water is used. Please see information titled: Appendix 8 - "District Guidelines Related to Recycled Water Production and Use."
35. MNWD is required to monitor all recycled water use sites for compliance with District regulations. If a violation occurs, a recycled water violation notice will be issued to the owner of record and/or the onsite supervisor, who is responsible for the particular use site. The District must be notified orally or in writing of the steps taken to correct the violation 48 hours within receipt of the report. Noncompliance with this regulation will result in termination of recycled water service and a re-connection fee will be charged in order to reestablish service. Onsite conditions that endanger the public's health will require immediate termination of all water services until corrections have been made to the satisfaction of MNWD and appropriate regulatory agencies. (See Section 6, Operational Requirements for Recycled Water Use)
36. The Association shall notify its members advising them of the fact that recycled water is being used for irrigation in the area and to ask the members for their assistance in notifying the Association of any main line breaks, broken heads, direct spray, windblown, or overspray onto private property, ponding, run off, or any damage to the irrigation systems. (See Section 3.4, Reporting)
37. Any questions regarding onsite retrofits requirements should be addressed to the District's Recycled Water Coordinator at 949-425-3549.

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PROVISION 7

HOURS OF OPERATIONS

Irrigation with recycled water is restricted to the following:

- Turf areas and center street medians - between 6:00 p.m. and 6:00 a.m.
- Slopes and groundcover/shrub areas - any hour
- Golf courses - fill impoundments between 4:00 a.m. and 6:00 p.m.

PROVISION 8

ONSITE TESTING PROCEDURES

1. Review site for following recycled water identification requirements:
 - Recycled water meter identification tag
 - Recycled water site identification signs
 - Recycled water controller enclosure labels 11" x 17"
 - Recycled water use site identification number on enclosure
 - Recycled water controller labels 4" x 6"
 - Recycled water above ground piping labels 2.5" x 3"
 - Recycled water identification tags for all appurtances
 - Purple/magenta identification tape on below ground piping
 - Recycled water valve box identification (1" x 5" RWID tags, branding etc.)
 - Recycled water quick coupling valve locking purple cover, Acme thread
 - Recycled water sprinkler heads, bubblers, drip systems, riser identification labels 2.5" x 3"

2. Where potable water used for irrigation, check identification:
 - Blue potable tag for water meter
 - Green potable water used for irrigation, on the backflow assembly downstream ball valve
 - Green potable water used for irrigation controller enclosure label 2.5" x 3"
 - Green potable water used for irrigation controller label 2.5" x 3"
 - Green potable water used for irrigation above ground piping labels 2.5" x 3"
 - Green potable water used for irrigation tags for all appurtenances
 - Green potable water used for irrigation identification tape on below ground piping
 - Green potable water used for irrigation valve box identification (branding etc.)
 - Potable water used for irrigation quick coupling valves, green potable water used for irrigation identification tag
 - Green potable water used for irrigation sprinkler heads, bubblers, drip systems, riser identification labels 2.5" x 3"

3. Where potable water used for domestic purposes, check identification:
 - Blue potable water meter identification tag
 - Blue potable water tag on the backflow assembly upstream ball valve
 - Blue potable water identification tag for all exterior hose bibbs
 - Blue potable water identification labels for all exposed exterior piping
 - Blue potable water identification tape on below ground piping

4. Where potable water fire protection, check identification:
 - Blue potable water meter identification tag
 - Blue potable water tag on the backflow assembly upstream shutoff valve
5. Where non-potable water, check identification:
 - Check identification of all appurtances
6. Coverage testing:
 - Operate all recycled water valves to verify minimum runoff, ponding, misting, and overspray
 - Eliminate direct spray onto all areas other than District approved irrigated area, especially those that there may be a possibility of public contact
 - Identify and eliminate systems that irrigate areas not approved to utilize recycled water
 - All plant materials shall be trimmed, removed, or irrigation systems altered to prevent obstruction of the irrigation spray patterns, to the satisfaction of the District
7. Cross connection testing:
 - Follow all control testing procedures as stated in the Rules and Regulations
 - Contact District Cross Connection Specialist if there are questions, (949)425-3559.
8. Verify use site conforms to the most current district approved as-built drawings
9. Review use permit for contact information and onsite supervisor information
10. Review recycled water testing forms (Appendix 9) for all quarterly tests since last routine onsite inspection and testing.
11. Alterations or upgrades to systems:
 - Inquire with the onsite supervisor or his designated representative if any upgrades, alterations, or repairs have taken place on the use site since the last site inspection. (See Section 3.5 for procedures that are required for compliance with the Rules and Regulations)
12. Punchlist

The District shall note all corrections in the form of a punchlist issued to the onsite supervisor. It shall be the onsite supervisor's responsibility to contact the District for all corrections noted on the punchlist within thirty (30) consecutive calendar days after issuance to avoid termination of recycled water service. Recycled water service will not

-
be reconnected until all punchlist items have been completed to the satisfaction of the District.

PROVISION 9

CROSS CONNECTION TEST

Case I applies to cases where recycled water is the only water supply to a site. Case II applies to recycled water and potable water service to a site. The following are the steps required to perform the cross-connection control testing:

Case I – Recycled water used for irrigation cross connection test/no other water sources on site

1. Verify/Record the following:
 - Owner Address
 - Site Address
 - On site supervisor
 - Meter Numbers
 - Meter Sizes
 - Meter Location
 - Public and private backflow protection information, locations, and current test reports.
 - Identification tags and labels for all meters, vaults, backflow assemblies, and related appurtenances.
 - Use site number on controller enclosure
 - List of all personnel in attendance and participating in testing
2. Verify full water pressure at the ends of the recycled water used for irrigation system.
3. Deactivate Systems:
 - Turn off and lock service
 - Customer shall open master valve manually (if any)
 - Attach “Cross Connection Testing in Progress” tag to water meter. Attach magnetic “cross connection testing in progress” label to controller door.
 - Run each control valve using irrigation controller, run all quick coupling valves.
 - Customer shall turn off irrigation controller.
4. Drain System - Reduce pressure to an acceptable level (approved by regulatory agency).
5. Verify the water pressure does not exceed an acceptable level at the low points of the system.

6. Start 24-hour cross connection test. Record date and time. Notify onsite personnel recycled water irrigation system is to remain off for testing.
7. Return to site a minimum of 24 hours after start of cross-connection test. Record date and time.
8. Verify the following conditions:
 - Angle stop is off and locked
 - Master valve is open (in manual position)
 - Irrigation controllers are still off
 - Verify the system water pressure does not exceed an ("acceptable level") (as approved by the regulatory agencies) at the low point of the recycled water irrigation system.
9. Complete report stating whether irrigation system passed or failed the cross connection test.

If system passed - District unlocks and turns on angle stop, the customer's onsite maintenance personnel are responsible for pressurizing the recycled water irrigation system, turning on controller, and returning the master valve back to the normal operating position.

If system fails - Angle stop shall remain off and locked. The District will notify SOCWA, MNWD, OCHCA, and DHS of cross connection. Locate source of cross connection. Eliminate cross connection. Retest all systems. Complete cross-connection report form. Other requirements may be required by the District as necessary on a case-by-case basis.

- District will file cross-connection test form. Send copy to SOCWA, OCHCA, DHS, and owner as requested.

Case II - Recycled water with potable water service on site

1. Verify/Record the following:
 - Owner Address
 - Site Address
 - On site supervisor
 - Meter Numbers
 - Meter Sizes
 - Meter Location
 - Public and private backflow protection information, locations, and current test reports.

- Identification tags and labels for all meters, vaults, backflow assemblies, and related appurtances.
- Use site number on controller enclosure
- List of all personnel in attendance and participating in testing

2. Test all systems in the following order:

- A. Recycled water used for irrigation systems
- B. Recycled water non-irrigation systems
- C. Potable water used for irrigation systems
- D. Potable water fire protection systems
- E. Potable water systems

A. Recycled Water Used for Irrigation Cross-Connection Test

1. Verify full water pressure at the ends of the recycled water irrigation system. Customer shall manually open master valve, if any on the recycled water irrigation system.
2. Verify full water pressure at all recycled water non-irrigation systems.
3. Verify full water pressure at the ends of the potable water used for irrigation systems. Customer shall manually open master valve, if any, on potable water used for irrigation systems.
4. Verify full water pressure at potable water fire protection systems, as necessary.
5. Verify full water pressure at all potable water system outlets - buildings, restrooms, drinking fountains, sinks, hose bibbs, and all other facilities and appurtenances.
6. Deactivate recycled water irrigation system.
 - a. Turn off and lock angle stop
 - b. Customer shall open master valve, if any
 - c. Attach "Cross Connection Testing in Progress" tag to meter, and magnetic "Cross Connection Testing in Progress" label to controller door.
 - d. Customer shall turn off irrigation controller
7. Drain system/reduce pressure to an acceptable level as approved by the regulatory agencies on the recycled water irrigation system at the low point of the system.
8. Verify full water pressure on the following systems:
 - a. Recycled water systems not a part of irrigation system
 - b. Potable water used for irrigation systems (at ends of systems)

- c. Potable water fire protection systems, as necessary
 - d. All potable water outlets
9. Start recycled water irrigation system cross-connection test. Record date and time. Notify onsite personnel. Recycled water irrigation system is to remain off for testing.
 10. Return to site within the time established by the regulatory agencies after start of cross-connection test. Record date and time.
 11. Verify recycled water irrigation system:
 - a. Angle stop is off and locked
 - b. Master valve is open (in manual position)
 - c. Irrigation controllers are still off.
 - d. Verify the system water pressure does not exceed an acceptable level (as approved by the regulatory agencies) at the low points of the recycled water irrigation system.
 12. Verify full water pressure at:
 - a. Recycled water systems not a part of irrigation system
 - b. Potable water used for irrigation systems (at the ends of the systems)
 - c. Potable water fire protection systems, as necessary
 - d. All potable water outlets
 13. Complete section of report stating whether the recycled water irrigation system has passed or failed the cross-connection test.

If system passed - District unlocks and turns on angle stop. The customer's onsite maintenance personnel are responsible for pressurizing the recycled water irrigation system, turning on controller, placing recycled water master valve back in normal operating position, and returning the recycled water irrigation master valve back to normal operating position.

If system fails - Angle stop shall remain off and locked. Turn off and lock all potable water angle stops. Discontinue use of all systems until further notice. The District will notify SOCWA, OCHCA, and DHS of cross connection, locate source of cross connection. Customer will eliminate cross connection, retest all systems, complete cross-connection report form. Other requirements may be necessary on a case-by-case basis, as determined by the District.

B. Recycled Water System (Not Used For Irrigation) Cross-Connection Test

1. Verify full water pressure on recycled non-irrigation water systems.

2. Verify full water pressure at the ends of the recycled water used for irrigation system. Customer shall manually open master valve, if any.
3. Verify full water pressure at the ends of the potable water irrigation system(s). Customer shall manually open master valve, if any.
4. Verify full water pressure at all potable water fire protection systems, as necessary.
5. Verify full water pressure at all potable water system outlets - buildings, restrooms, drinking fountains, sinks, hose bibbs, and all other facilities and appurtenances.
6. Deactivate recycled non-irrigation water system
 - a. Turn off and lock angle stop
 - b. Attach "Cross Connection Test in Progress" tag to meter
7. Drain recycled water non-irrigation system and reduce pressure to an acceptable level (as approved by the regulatory agencies) on the recycled water non-irrigation system
8. Verify full water pressure on the following systems:
 - a. Recycled water irrigation systems (at the ends of the systems)
 - b. Potable water used for irrigation systems (at the ends of the systems)
 - c. Potable water used for fire protection systems
 - d. All potable water outlets
9. Start recycled water non-irrigation system cross-connection test. Record date and time. Notify onsite personnel that recycled water non-irrigation system is to remain off for testing.
10. Return to site within the time established by the regulatory agencies after start of cross-connection test. Record date and time.
11. Verify recycled non-irrigation water system:
 - Angle stop is off and locked
 - The system water pressure does not exceed an acceptable level (as approved by regulatory agencies) on the recycled water non-irrigation system.
12. Verify full water pressure at:
 - a. Recycled water irrigation systems (at the ends of the systems)
 - b. Potable water used for irrigation systems (at the ends of the systems)
 - c. Potable water used for fire protection systems
 - d. All potable water outlets

13. Complete section of report stating whether the recycled water non-irrigation system has passed or failed the cross-connection test.

If system passed - District unlocks and turns on service, customer's onsite maintenance personnel are responsible for pressurizing the recycled water non-irrigation system, and returning both recycled water irrigation system and potable water irrigation master valves back to normal operating position.

If system fails - Service remains off and locked. The District staff will turn off and lock all recycled water and potable water angle stops. Discontinue use of all systems until further notice. The District will notify SOCWA, OCHCA, and DHS of cross connection. Locate source of cross connection, eliminate cross connection, retest all systems, and complete cross-connection report forms. Other requirements may be necessary on a case-by-case basis as determined by the District.

C. Potable Water Used for Irrigation Cross-Connection Test

1. Verify full water pressure at the ends of the potable water used for irrigation system. Customer shall manually open master valve, if any on potable water used for irrigation system.
2. Verify full water pressure at the ends of the recycled water irrigation system. Customer shall manually open master valve, if any on recycled water irrigation system.
3. Verify full water pressure at all recycled water non-irrigation systems.
4. Verify full water pressure at all potable water used for fire protection systems, as necessary.
5. Verify full water pressure at all potable water system outlets - building, restrooms, drinking fountains, sinks, hose bibbs, and all other facilities and appurtenances.
6. Deactivate potable water irrigation system.
 - a. Turn off backflow at isolation valves
 - b. Verify master valve is manually open, if any
 - c. Attach "Cross Connection Testing in Progress" tag to backflow and magnetic "Cross Connection Testing in Progress" label to controller box.
 - d. Customer shall turn off irrigation controller.
7. Drain system and reduce pressure to an acceptable level (as approved by the regulatory agencies) on the potable water used for irrigation system at the low point of the system.

8. Verify full water pressure on the following systems:
 - a. Recycled water irrigation systems (at the ends of the systems)
 - b. Recycled water non-irrigation systems
 - c. Potable water fire protection systems
 - d. All potable water outlets
9. Start potable water used for irrigation system cross-connection test. Record date and time.
10. Return to site within the time established by the regulatory agencies after start of cross-connection test. Record date and time.
11. Verify potable water used for irrigation system:
 - a. Backflow isolation valves are off
 - b. Verify that master valve is manually open, if any
 - c. Verify the system water pressure does not exceed an acceptable level (as approved by the regulatory agencies) at the low points of the potable water used for irrigation system.
12. Verify full water pressure at:
 - a. Recycled water irrigation systems (at the ends of the systems)
 - b. Recycled water systems
 - c. Potable water fire protection systems
 - d. All potable water outlets
13. Complete section of report stating whether the potable water irrigation has passed or failed the cross-connection test.

If system passed - Customer turns on backflow isolation valves. The customer's onsite maintenance personnel are responsible for pressurizing the potable water irrigation system and places the master valve back in the normal operating position, and returning the potable water used for irrigation master valve back to normal operating position.

If system fails - Turn off and lock all potable water and recycled water angle stops. Discontinue use of all systems until further notice. The District will notify SOCWA, OCHCA, and DHS of cross connection. Locate source of cross connection, eliminate cross connection, retest all systems, and complete cross-connection report form. Other requirements may be necessary on a case-by-case basis as determined by the District.

D. Potable Water Fire Protection Systems Cross-Connection Test, As Necessary

1. Owner shall notify employees, tenants, and the Fire Department that fire protection system is under pressure testing.
 - a. Verify full water pressure at all potable water fire protection system outlets, as necessary.
 - b. Check pressure gauge and record psi at the beginning of all cross connection testing.
2. Verify full water pressure at all recycled water irrigation systems (at the ends of the systems). Customer shall manually open master valve, if any.
3. Verify full water pressure at all recycled water non-irrigation system outlets.
4. Verify full water pressure at all potable water used for irrigation systems (at the ends of the systems). Customer shall manually open master valve, if any.
5. Verify full water pressure at all potable water system outlets - buildings, restrooms, drinking fountains, sinks, hose bibbs, and all other facilities and appurtenances.
6. Owner turns off fire protection system at backflow device.
7. Attach "Cross Connection Testing In Progress" tag to backflow device inlet handle.
8. Check pressure gauge and record psi on the potable water fire protection system.
9. Verify full water pressure on the following systems:
 - a. Recycled water irrigation systems (at the ends of the systems)
 - b. Recycled water non-irrigation systems
 - c. Potable water irrigation systems (at the ends of the systems)
 - d. All potable water outlets
10. Start potable water fire protection system cross-connection test. Record system psi at pressure gauge, date and time.
11. Return to site within the time established by the regulatory agency after start of cross-connection test. Record date and time.
12. Verify potable water fire protection system water pressure at pressure gauge has not changed from previous reading.
13. Verify full water pressure at:
 - a. Recycled water irrigation systems (at the ends of the systems)

- b. Recycled water systems
 - c. Potable water irrigation systems (at the ends of the systems)
 - d. All potable water outlets
14. Complete section of report stating whether the potable water fire protection system has passed or failed the cross-connection test.

If system passed - Customer's onsite maintenance personnel are responsible for opening backflow isolation valves, pressurizing system, notifying fire department system is back on-line. Returning both recycled water irrigation and potable water used for irrigation master valves back to normal operating position.

If system fails - Service remains off and isolated. Turn off and lock all recycled water and potable water angle stops. Discontinue use of all systems until further notice. The District will notify SOCWA, OCHCA, and DHS of cross connection. Locate source of cross connection, eliminate cross connection, retest all systems, and complete cross-connection report forms. Other requirements may be necessary on a case-by-case basis as determined by the District.

E. Potable Water Cross-Connection Test

1. Verify full water pressure at all potable water outlets - buildings, restrooms, drinking fountains, sinks, hose bibbs, and all other facilities and appurtenances.
2. Verify full water pressure at the ends of the recycled water irrigation system(s), Customer shall manually open master valve, if any on the recycled water irrigation system.
3. Verify full water pressure at all recycled water non-irrigation system(s).
4. Verify full water pressure at the ends of the potable water used for irrigation system(s). Customer shall manually open master valve, if any on potable water used for irrigation system(s).
5. Verify full water pressure at potable water fire protection systems, as necessary.
6. Deactivate potable water system.
 - a. Turn off backflow at isolation valves
 - b. Attach "Cross Connection Testing in Progress" tag to isolation valve.
7. Drain and reduce pressure to an acceptable level (as approved by the regulatory agencies) on the potable water system. Verify the water pressure is at an acceptable low level (approved by regulatory agency) at low point of system.
8. Verify full water pressure on the following systems:

- a. Recycled water irrigation systems
 - b. Recycled water non-irrigation systems
 - c. Potable water irrigation systems
 - d. Potable water fire protection systems, as necessary
9. Start potable water cross-connection test. Record date and time.
 10. Return to site within the time established by the regulatory agencies after start of cross connection test. Record date and time.
 11. Verify the potable water systems water pressure does not exceed an acceptable level (as approved by the regulatory agencies) at the low points of the potable water system.
 12. Verify full water pressure at:
 - a. Recycled water irrigation systems
 - b. Recycled water non-irrigation systems
 - c. Potable water irrigation systems
 - d. Potable water fire protection systems, as necessary
 13. Complete section of report stating whether the potable water system has passed or failed the cross-connection test.

If system passed - Customer opens backflow isolation valves, pressurizes system, returns both recycled water irrigation and potable water irrigation master valves back to normal operating position.

If system fails - Service remains off and isolated. Turn off and lock all recycled water and potable water angle stops, discontinue use of all systems until further notice. The District will notify SOCWA, OCHCA, and DHS of cross connection. Locate source of cross connection, eliminate cross connection, retest all systems, and complete cross-connection report forms. Other requirements may be necessary on a case-by-case basis as determined by the District.

(NOTE: All testing shall be done in conjunction with and the approval of MNWD Recycled Water Division Inspectors, Customer Service Cross-Connection Specialists and OCHCA and DHS.)

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SITE SPECIFIC PROVISIONS

NOTES:

1. The Owner of record shall be required to notify their employees and/or tenants when cross connection control testing may affect the water service to facilities under the Owner's control.
2. The Owner of record shall be required to notify their employees, tenants, and the fire department when the fire protection system is involved in the cross connection control testing process. (Fire watches and/or other related requirements are the sole responsibility of the Owner.)
3. For recycled water non-irrigation systems, testing requirements will be determined on a case-by-case basis by the District.

TABLE 1 RECYCLED WATER IRRIGATION SYSTEMS			
Site Conditions: Recycled Water Irrigation System No Potable Water Onsite			
Type of Site:	New Construction	Conversion	Retrofit
<u>INITIAL - TESTING</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>ROUTINE INSPECTION AND TESTING</u>			
Duration:	24 Hours	24 Hours	24 Hours

TABLE 2 SCHOOL SITES			
Site Conditions: Recycled Water Irrigation System Potable Water Irrigation System (RPPD) Potable Water Multiple Building Use (RPPD) Potable Water Fire Protection (DCDA)			
Type of Site:	New Construction	Conversion	Retrofit
INITIAL - TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEM:</u>			
Duration:	4 Hours	4 Hours	4 Hours
<u>POTABLE WATER MULTIPLE BUILDING USE:</u>			
Duration:	4 Hours	4 Hours	4 Hours
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.
ROUTINE INSPECTION AND TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEM:</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER MULTIPLE BUILDING USE:</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.

TABLE 3
COMMERCIAL SITES

Site Conditions: Recycled Water Irrigation System Potable Water Irrigation System (RPPD) Potable Water Multiple Building Use (RPPD) Potable Water Fire Protection (DCDA)			
Type of Site:	New Construction	Conversion	Retrofit
INITIAL - TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEM:</u>			
Duration:	4 Hours	4 Hours	4 Hours
<u>POTABLE WATER MULTIPLE BUILDING USE:</u>			
Duration:	4 Hours	PPC	PPC
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.
ROUTINE INSPECTION AND TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEM:</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER MULTIPLE BUILDING USE:</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk	Pressure Gauge Chk.	Pressure Gauge Chk.

TABLE 4
CONDOMINIUMS/APARTMENTS

Site Conditions: Association Recycled Water Irrigation System Association Potable Water Irrigation System (RPPD) Association Potable Water Multiple Building Use (RPPD) Association Potable Water Fire Protection (DCDA)			
Type of Site:	New Construction	Conversion	Retrofit
INITIAL - TESTING			
<u>ASSOCIATION RECYCLED WATER IRRIGATION SYSTEM:</u> Duration:	24 Hours	24 Hours	24 Hours
<u>ASSOCIATION POTABLE WATER IRRIGATION SYSTEM:</u> Duration:	4 Hours	4 Hours	4 Hours
<u>ASSOCIATION POTABLE WATER MULTIPLE BUILDING USE:</u> Duration:	4 Hours	PPC	PPC
<u>ASSOCIATION POTABLE WATER FIRE PROTECTION:</u> Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.
ROUTINE INSPECTION AND TESTING			
<u>ASSOCIATION RECYCLED WATER IRRIGATION SYSTEM:</u> Duration:	24 Hours	24 Hours	24 Hours
<u>ASSOCIATION POTABLE WATER IRRIGATION SYSTEM:</u> Duration:	PPC.	PPC.	PPC.
<u>ASSOCIATION POTABLE WATER MULTIPLE BUILDING USE:</u> Duration:	PPC	PPC	PPC
<u>ASSOCIATION POTABLE WATER FIRE PROTECTION:</u> Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.

TABLE 5
SINGLE FAMILY HOMES
ASSOCIATION MAINTAINED FRONT YARD COMMON AREAS

Site Conditions: Recycled Water Irrigation System (Association Maintained Front Yard Common Areas) Potable Water Irrigation System Front and Backyards Potable Water Use (No Backflow at Meter) No Fire Protection			
Type of Site:	New Construction	Conversion	Retrofit
INITIAL - TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEMS BACKYARDS:</u>			
Duration:	No Testing	No Testing	No Testing
<u>POTABLE WATER USE (NO BACKFLOW AT METER):</u>			
Duration:	4 Hours	PPC	PPC.
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.
ROUTINE INSPECTION AND TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEM:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE WATER IRRIGATION SYSTEMS BACKYARDS:</u>			
Duration:	No Testing	No Testing	No Testing
<u>POTABLE WATER USE (NO BACKFLOW AT METER):</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.

TABLE 6
SINGLE FAMILY HOMES

Site Conditions: Recycled Water Irrigation Systems Front & Rear Potable Irrigation Systems(RPPD) Potable Water Use (RPPD) Potable Water for Fire Protection (DCDA)			
Type of Site:	New Construction	Conversion	Retrofit
INITIAL - TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEMS FRONT & REAR:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE IRRIGATION SYSTEMS:</u>			
Duration:	4 Hours	4 Hours	4 Hours
<u>POTABLE WATER USE:</u>			
Duration:	4 Hours	4 Hours.	4 Hours
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.
ROUTINE INSPECTION AND TESTING			
<u>RECYCLED WATER IRRIGATION SYSTEMS FRONT & REAR:</u>			
Duration:	24 Hours	24 Hours	24 Hours
<u>POTABLE IRRIGATION SYSTEMS:</u>			
Duration:	4 Hours	4 Hours	4 Hours
<u>POTABLE WATER USE:</u>			
Duration:	PPC	PPC	PPC
<u>POTABLE WATER FIRE PROTECTION:</u>			
Duration:	Pressure Gauge Chk.	Pressure Gauge Chk.	Pressure Gauge Chk.

STANDARD DETAIL DRAWINGS

**RECYCLED WATER
STANDARD DETAIL DRAWINGS**

<u>NUMBER</u>	<u>TITLE</u>
IRR-1	AIR GAP
IRR-2	APPURTENANCE LAYOUT
IRR-3	WYE STRAINER
IRR-4	BASKET STRAINER
IRR-5	BACKFLOW PREVENTION DEVICE
IRR-6	BACKFLOW PREVENTION LAYOUT
IRR-7	PRESSURE REGULATOR INSTALLATION
IRR-8	MASTER CONTROL VALVE
IRR-9	FLOW SENSOR
IRR-10	REMOTE CONTROL VALVE
IRR-11	BALL/GATE VALVE
IRR-12	QUICK COUPLING VALVE
IRR-13	DESIGN CRITERIA FOR SEPARATION OF ONSITE WATER AND SEWER MAINS FOR NEW RECYCLED WATER MAINS
IRR-14	TRENCHING
IRR-15	PIPES UNDER PAVING
IRR-16	THRUST BLOCKS FOR PLASTIC PIPE
IRR-17	TERRACE DRAIN CROSSING
IRR-18	ROTOR/POP-UP SPRINKLER HEAD
IRR-19	ROTOR/SPRINKLER HEAD ON GRADE
IRR-20	SHRUB SPRAY ON RISER
IRR-21	SLOPE CONDITIONS
IRR-22	PIPE STABILIZER ON GRADE
IRR-23	CONTROLLER
IRR-24	BRANDING GUIDE
IRR-25	ABOVE GROUND PIPELINE/HOSE IDENTIFICATION
IRR-26	IDENTIFICATION TAGS AND LABELS
IRR-27	RECYCLED WATER SITE IDENTIFICATION SIGN
IRR-28	PLAN CRITERIA, SIGNATURE BLOCK LAYOUT
IRR-29	PLAN NOTES
IRR-30	DRINKING FOUNTAIN COVER DETAIL
IRR-31	RECYCLED WATER RETROFIT POINT OF CONNECTION REQUIREMENTS