

Appendix III:  
Norman's  
Nursery  
Management  
Plan Progress  
Report

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## EXECUTIVE SUMMARY

The San Joaquin County and Delta Water Quality Coalition (SJCDWQC or Coalition) developed Part I and Part II of the Site-Specific Nitrate Management Plan (Management Plan) for the Coalition member, Norman's Nursery, Linden (NNL) to address surface and groundwater quality exceedances. Part I was submitted to the Central Valley Regional Water Quality Control Board (Regional Water Board) in February 2018, and Part II was submitted in September 2018 (approved September 21, 2018).

The goal of the Management Plan is to evaluate the potential of current operations to impact surface and groundwater quality as part of the Irrigated Lands Regulatory Program (ILRP) and existing SJCDWQC management plans. The Coalition acts as the third-party to comply with the Regional Water Quality Control Board's Waste Discharge Requirements General Order for Growers Within the San Joaquin County and Delta Area R5-2014-0029-03 (WDR). Monitoring outlined within the Norman's Nursery Site-Specific Management Plan is conducted by the Coalition, according to the requirements outlined within SJCDWQC Quality Assurance Project Plan (QAPP).

The Coalition is submitting this NNL Nitrate Management Plan Progress Report for the 2018 WY as an appendix to the SJCDWQC 2019 Annual Report. The Progress Report provides updates on the status and methods used to identify agricultural sources of discharges resulting in exceedances of WQTLs in surface and groundwater, tracks implemented management practices, and progress toward meeting the performance goals as outlined in the Management Plan.

# GEOGRAPHIC AREA AND MONITORING DESIGN

## SURFACE WATER

Norman’s Nursery, Linden (NNL) is a commercial wholesale nursery located in San Joaquin County, four miles east of Linden. The property is on the east side of Escalon Bellota Road between Shelton and Flood roads. Norman’s Nursery, Linden encompasses 517.12 acres total, including roads, buildings, and a loading dock, with 378 acres in production. The nursery is bordered to the north by Potter Creek and walnut orchards, to the east by hilly rangeland, to the south by a hilly grape vineyard, and to the west by Escalon Bellota Road. West of the Escalon Bellota Road are walnut orchards. None of these neighboring properties are owned or controlled by NNL. The neighboring properties to the south and east are upslope from NNL and water drains from them into NNL.

There are four locations on NNL property at which water can enter Potter Creek and four basins on the property, Basin A, Basin B, Basin C, and Basin D (Figure 1). The nursery has two main drainage canals located west of the NNL office. These were installed to capture runoff from the nursery and for storm drainage; both flow into Basin B. A third canal connects Basin A and Basin C for storm water overflow. There is a small slough from Basin C that empties into Potter Creek. It is dry most of the year unless there is storm runoff.

Under the management plan, the Coalition collects water quality samples in Potter Creek at three monitoring locations monthly during discharge events (when discharge to Potter Creek is observed) to capture the effects of nursery runoff; Table 1 lists the surface water monitoring locations on Potter Creek. The Coalition monitors the three sites on Potter Creek for field parameters, discharge, and Nitrate-Nitrite as N. A digital photo of each discharge point (D1 and D2 locations) is taken daily for the first year of monitoring, beginning November 9, 2018.

**Table 1. Surface water monitoring locations.**

STATION NAME	LATITUDE	LONGITUDE
Potter Creek @ Escalon Bellota Rd	38.04189	-121.01393
D1 @ Potter Creek	38.04255	-121.01102
D2 @ Potter Creek	38.04419	-121.00475



## GROUNDWATER

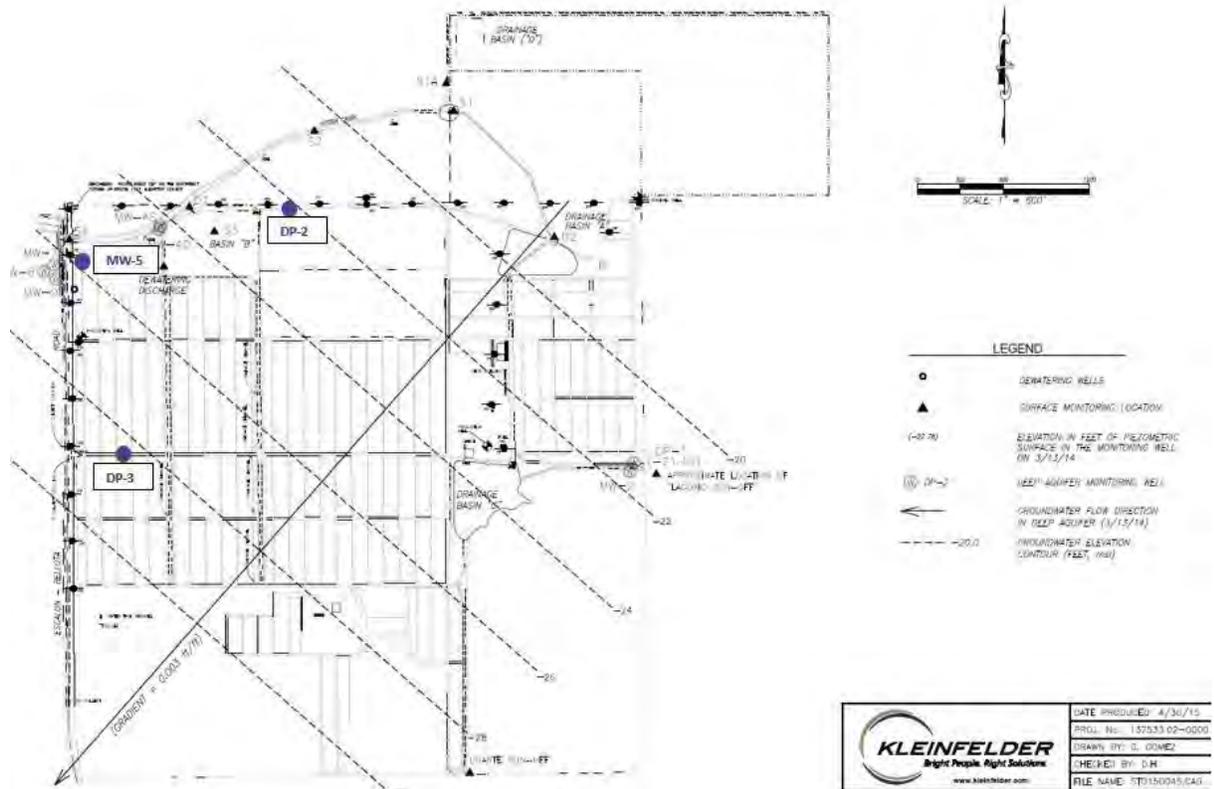
The nursery site has moderate topographic relief, sloping to the north and west. According to the Fall 1996 Groundwater Report by the San Joaquin Flood Control and Water Conservation District, groundwater beneath NNL exists at a depth of approximately 150 to 160 feet. Monitoring wells are established to collect samples from the perched aquifer (20 ft) and shallow groundwater (150-160 ft). There are four wells on site: three propagation wells and one domestic well. The Site-Specific Management Plan requires NNL to monitor three wells, twice a year in October and April (Table 2, Figure 2). The Coalition coordinates with NNL to monitor the wells DP-2 and DP-3 for nitrate to evaluate the effectiveness of implemented management practices and evaluate trends in groundwater quality.

Monitoring at MW-5 will continue based on the previous exceedances of the nitrate MCL from 2010 through 2015.

**Table 2. Groundwater monitoring locations.**

Site Code	Type of Well	Date Installed	Well Depth	Site Location
MW-5	Perched Aquifer Well	1997	13.5	Northwest corner of nursery property.
DP-2	Shallow Well	1999	168	Adjacent to Nursery's north road, east of Basin B.
DP-3	Shallow Well	1999	165	East of Nursery's main gate.

Figure 2. Norman's Nursery groundwater well monitoring locations.



## MANAGEMENT PLAN PROCESS

### OVERVIEW OF MANAGEMENT PLAN MONITORING

Water quality results for nitrate + nitrate as N are used to evaluate the effectiveness of Coalition outreach and management practices implemented by NNL. The Site-Specific Management Plan was approved by the Regional Water Board on September 21, 2018. Monitoring began in November 2018, after the first storm occurred and discharge to Potter Creek was observed.

Monitoring results and a discussion of exceedances of the WQTL will be provided in the 2019 WY Management Plan Progress Report.

### OUTREACH TO MEMBERS

The SJCDWQC conducts outreach and education activities yearly to the Coalition members, including member meetings, mailings, workshops, and the County Agricultural Commissioner's meetings.

In 2018, the Coalition held meetings to inform members of progress in achieving water quality goals, site subwatershed-specific monitoring results, and management practices effective at reducing agricultural runoff to waterbodies. All outreach and education activities from 2018 are included in Table 56 in the main body of the Annual Report.

### SUMMARY OF MANAGEMENT PRACTICES

Norman's Nursery submitted their Farm Evaluation (FE) survey for the 2017 crop year. Norman's Nursery currently is not required to submit a Nitrogen Management Plan survey.

Norman's Nursery currently implements a variety of irrigation and nitrogen control management practices. Norman's Nursery has three irrigation wells on the property where proper wellhead protection practices are implemented. Table 3 lists the management practices implemented to minimize leaching of nitrate past the root zone as indicated in NNL's most recent Farm Evaluation summary.

Norman's Nursery continues to replace the drip tubing to reduce drips and leaks and is currently in contact with the AquaMat representative to run a trial of their irrigation products. Norman's Nursery has also been working to reconfigure the drainage basins on the property to prevent water from discharging into Potter Creek during the irrigation season. This summer, NNL plans to clean out Basin B and the canals, removing sediment and weeds to allow for more storage of stormwater. In addition, NNL will begin to treat the basins with microbes and sludge reducers.

**Table 3. Management practices implemented by NNL.**

MANAGEMENT PRACTICE CATEGORY	MANAGEMENT PRACTICE
Irrigation Practices	The 1-gallon shrubs are watered using overhead "broadcast" sprinklers. Supplemental watering by hand, where needed.
	Fill water trucks from the basins and water roads to control dust.
	Working with AquaMat trial product.

MANAGEMENT PRACTICE CATEGORY	MANAGEMENT PRACTICE
Nitrogen Management to Minimize Leaching Past the Root Zone	Drip irrigation; drip irrigation maintenance
	Split fertilizer applications in soils
	Regular maintenance performed on meters
	Tissue/petiole testing
	Irrigation water N testing
	Vegetation in basins
	Fertigation
	No fertilizer applied over outside temperatures of 90-95 degrees
Wellhead Protection	Standing water avoided around wellhead
	Good housekeeping practices (keeping the area surrounding the wellhead clean of trash, debris)
	Backflow preventative/check valve
Structural	Rock berm installed in between Basin B and Potter Creek
	Basin maintenance to increase water holding capacity.

Norman’s Nursery staff participated in various trainings and workshops throughout the year. In addition to the Coalition quarterly meetings, NNL attended the California Nursery Conference (water management in nursery and greenhouse productions), two UC Nursery and Floriculture Alliance workshops (plan nutrition and fertilizer management in nursery operations), and an Apex Short Course (presentations, education, and information from nursery industry leaders). Norman’s Nursery also conducted weekly ‘tail-gate’ meetings with all nursery personnel to discuss water issues, irrigation management, and the responsibility of all employees to conserve water and protect water quality.

## PERFORMANCE GOALS AND MEASURES

Progress toward the implementation of management practices and improved water quality are measured by progress in meeting the established performance goals and measures from the Site-Specific Management Plan, listed below.

1. Identify new management practices.
  - a) Meet with industry specialists twice to discuss additional practices by 2020.
  - b) 100% of practices identified are evaluated for the potential to implement, within 6 months of practices identified.
2. Implement effective management practices.
  - a) 100% of practices identified to reduce nitrate leaving NNL property are implemented [within 6 months of each practice identification, or as soon as practicable and economically feasible].
3. Eliminate exceedances of the MCL for nitrate in samples collected during surface and groundwater monitoring.
  - a) By 2022, all samples collected from Potter Creek have nitrate concentrations below the nitrate MCL.
  - b) By 2028, Management Plan Wells have nitrate concentrations below the MCL.

Norman’s Nursery will work with industry specialists and the Coalition to identify, evaluate and implement new management practices as soon as practicable and economically feasible. The Coalition will evaluate the 2019 WY monitoring results and report any new management

practices implemented in the 2019 WY in the following year's Management Plan Progress Report Appendix.

## MANAGEMENT PLAN COMPLETION

### Management Plan Completion Goals

The Coalition will document implemented management practices and evaluate the effectiveness of these practices through monitoring results. If three years of monitoring demonstrates no exceedances of the MCL for nitrate, the Coalition will request to complete the nitrate management plan. As established in Appendix MRP-1 of the SCJDWQC WDR, a management plan can be approved for completion based on the following key components:

- Demonstration through monitoring that the water quality concern is no longer occurring; three years of monitoring with no exceedances during the times of the year when previous exceedances occurred.
- Documentation of implemented management practices that address the water quality exceedances.
- Demonstrate that management practice implementation is effective in addressing the water quality concern.

Monitoring for nitrate will continue until three years of monitoring results in no exceedances of the nitrate MCL. With no exceedances of the nitrate MCL and a record of management practices implemented by NNL to reduce discharge and protect groundwater, NNL will have demonstrated its operations are not negatively impacting water quality.