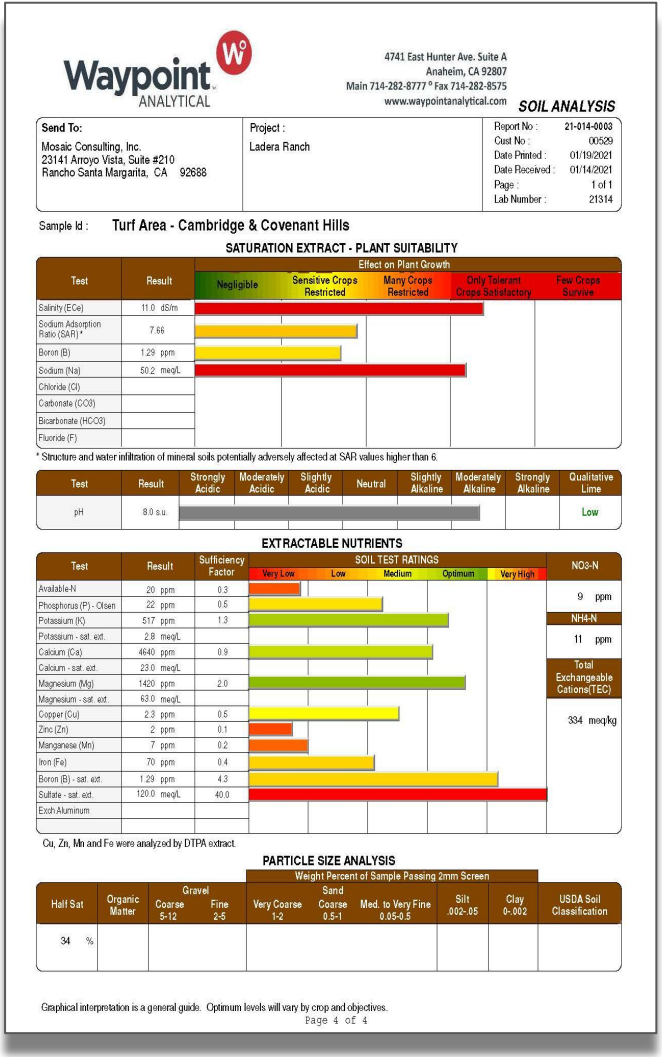
LARMAC

Landscape Materials and Cultural Practices Overview

March 10, 2021

Evolving Cultural Practices

- Regular Soil and Water Testing
  - Heavy clay soils
  - Elevated sodium levels
  - Reclaimed water challenges



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SOIL ANALYSIS

Send To:	Project :	
Mosaic Consulting, Inc. 23141 Arroyo Vista, Suite #210 Rancho Santa Margarita, CA 92688	Ladera Ranch	Report No : 21-014-0003 Cust No : 00529 Date Printed : 01/19/2021 Date Received : 01/14/2021 Page : 1 of 1 Lab Number : 21314

Sample Id : **Turf Area - Cambridge & Covenant Hills**

SATURATION EXTRACT - PLANT SUITABILITY

Test	Result	Effect on Plant Growth: Negligible	Sensitive Crops Restricted	Many Crops Restricted	Only Tolerant Crops Satisfactory	Few Crops Survive
Salinity (ECe)	11.0 dS/m					
Sodium Adsorption Ratio (SAR) *	7.66					
Boron (B)	1.29 ppm					
Sodium (Na)	50.2 meq/L					
Chloride (Cl)						
Carbonate (CO3)						
Bicarbonate (HCO3)						
Fluoride (F)						

* Structure and water infiltration of mineral soils potentially adversely affected at SAR values higher than 6.

Test	Result	Strongly Acidic	Moderately Acidic	Slightly Acidic	Neutral	Slightly Alkaline	Moderately Alkaline	Strongly Alkaline	Qualitative Lime
pH	8.0 s.u.								Low

EXTRACTABLE NUTRIENTS

Test	Result	Sufficiency Factor	SOIL TEST RATINGS: Very Low	Low	Medium	Optimum	Very High
Available-N	20 ppm	0.3					
Phosphorus (P) - Olsen	22 ppm	0.5					
Potassium (K)	517 ppm	1.3					
Potassium - sat. ext.	2.8 meq/L						
Calcium (Ca)	4640 ppm	0.9					
Calcium - sat. ext.	23.0 meq/L						
Magnesium (Mg)	1420 ppm	2.0					
Magnesium - sat. ext.	63.0 meq/L						
Copper (Cu)	2.3 ppm	0.5					
Zinc (Zn)	2 ppm	0.1					
Manganese (Mn)	7 ppm	0.2					
Iron (Fe)	70 ppm	0.4					
Boron (B) - sat. ext.	1.29 ppm	4.3					
Sulfate - sat. ext.	120.0 meq/L	40.0					
Exch Aluminum							

NO3-N	NH4-N	Total Exchangeable Cations(TEC)
9 ppm	11 ppm	334 meq/kg

Cu, Zn, Mn and Fe were analyzed by DTPA extract.

PARTICLE SIZE ANALYSIS

Half Sat	Organic Matter	Gravel: Coarse 5-12	Gravel: Fine 2-5	Weight Percent of Sample Passing 2mm Screen: Sand: Very Coarse 1-2	Sand: Coarse 0.5-1	Sand: Med. to Very Fine 0.05-0.5	Silt .002-.05	Clay 0-.002	USDA Soil Classification
34 %									

Graphical interpretation is a general guide. Optimum levels will vary by crop and objectives.

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Evolving Cultural Practices

- Transitioning from *"Cool Season"* to *"Warm Season"* Turf
  - Kikuyu Grass, *Pennisetum clandestinum*
  - Drought tolerant
  - Requires less fertilization and pesticides than "cool season" grass
  - Once established, Kikuyu competes with turf weeds and other invasives, eliminating the need for herbicides
  - Prevalent throughout southern California
  - Many prominent golf courses have successfully transitioned to Kikuyu

Evolving Cultural Practices

- Composted Mulch
  - Helps reduce soil moisture loss
  - Helps control weed germination
  - Insulates soil, protecting roots from extreme summer and winter temperatures
  - Can improve soil biology, aeration and structure
  - Can improve soil fertility as certain mulch types decompose
  - Inhibits certain plant diseases
  - Reduces the likelihood of tree damage from mowing operations
  - LARMAC budgets 150k annually

Evolving Cultural Practices

- Tree Trimming Chippings
  - Used in Fuel Modification and Open Space areas
  - Reduces need for herbicides
  - Helps retain moisture
  - Improves aesthetics
  - Responsible use for green waste by keeping it onsite

Evolving Cultural Practices

- Aerating
  - Improves air exchange between the soil and atmosphere
  - Enhances soil water uptake
  - Improves fertilizer uptake and use
  - Reduces water runoff and puddling
  - Promotes stronger root systems
  - Reduces soil compaction
  - Enhances heat and drought stress tolerance
  - Improves resiliency and cushioning
  - Promotes thatch breakdown

Evolving Cultural Practices

- Top Dressing for Sports Fields
  - Improves playability
  - Improves the health of the turf to reduce dependence on chemicals
  - Helps level minor depressions
  - Helps control “thatch”
  - Helps reduce hard compacted soils
  - Improves aeration and drainage
  - Improves seedbed for overseeding

Evolving Cultural Practices

- Grubs (Japanese Beetle) - Destroy Turf Areas
  - Now only 1 treatment per year
  - Granular application- No EPA signal word
  - No spraying required
  - 26% of 750 acres of landscape is turfgrass
  - Replacement sod is $2.00 per square foot

Evolving Cultural Practices

- Shot Hole Borer
  - This is a rapidly spreading pest-disease complex in which several fungal species are vectored by ambrosia beetles that attack numerous hardwood tree species throughout California
  - It was first identified in Los Angeles in 2012 and has since spread into the surrounding counties
  - Treatment- “Bark Banding Application” to the trunk of the tree
    - Only the lower portion of the tree trunk is addressed

Evolving Cultural Practices

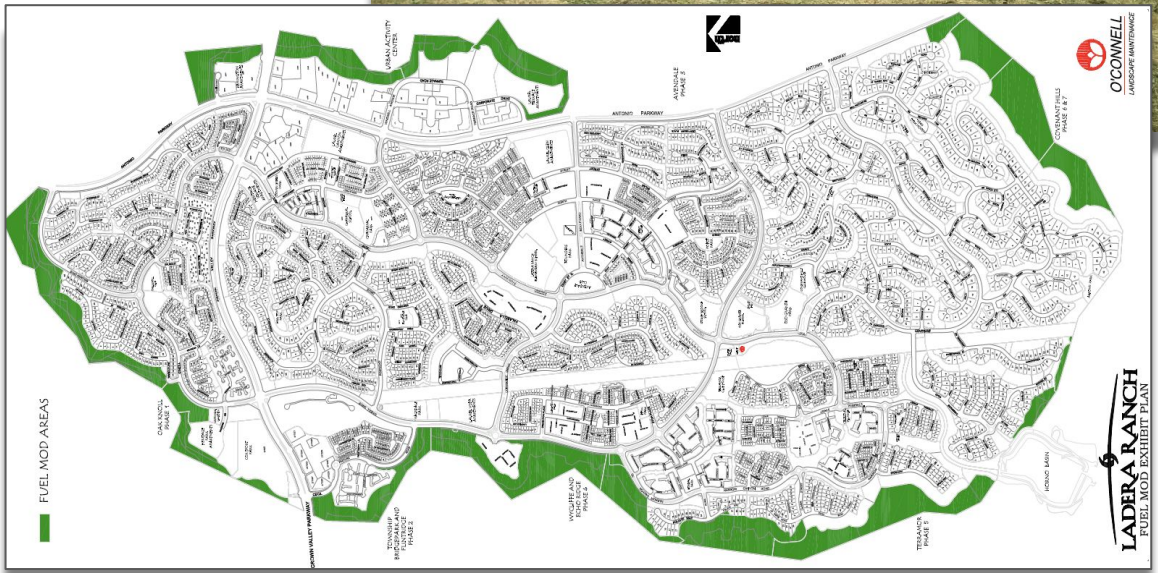
- Founders Park- EZ Flow
  - Combines irrigation and fertilizers
  - More efficient fertilizer application
  - Reduce the need for herbicides and pesticides
  - Reduces fertilizer runoff
  - Dispensing fertilizers in small concentrations is the most responsible way to fertilize

Evolving Cultural Practices

- Citrus Orchard
  - “EZ Flow” Fertigation tank
  - Free of Synthetic herbicides and pesticides
  - Composted Mulch
  - Organic maintenance practices

Evolving Cultural Practices

- Fuel Modification
  - Over 90 Acres
  - OCFA Inspections
  - Stricter guidelines
  - Reduced hand labor
  - Pesticide Free



Reducing the Use of the Most Common Materials Used

#	1	2	3	4	5	6	7	8	9	10
Product Name	***Lifeline***	***Speedzone***	***Quicksilver***	***Harrell's Spray Max***	***Pentra Bark***	***Safari***	***Masterline***	***Criterion 2F***	***Pendulum***	***Atrimmec***
What is it?	Non selective herbicide	Selective broadleaf herbicide	Selective broadleaf herbicide	Oil- based spray adjuvant	Bark penetrating surfactant	Insecticide	Insecticide	Insecticide	Preemergence	Plant growth regulator
Signal Word	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION	CAUTION
Use / Target	Invasive weeds	Combined for broadleaf weeds in turf'			Treat "Shot Hole Borer"		Grubs / Scale / Aphids		Weed inhibitor	Fastest growing shrubs
Where	Tree Wells DG Trails Shrub Areas Pavers Sidewalks	Turf other than sports fields including parkways, greenbelts, passive parks			Trees, mostly Sycamore and Koelreuteria		Grubs in turf except sports fields, scale on vines / shrubs, Aphids on shrubs, roses		Renovated areas to and other known areas prone to severe weed infestation	Selected shrub areas
Method	"Spot" or target application with backpack sprayer	Truck mounted sprayer and/or backpack sprayer			"Bark Banding" with backpack sprayer		Truck mounted sprayer or backpack sprayer		Truck mounted or backpack sprayer or spread by granular	Truck mounted or backpack sprayer
X / Year	Ongoing	Once per year			As needed		Grubs 2x/year other pests as needed		As needed	2-3x /year