DataTrac 3
Style Guide

PDF Style Guide with swatches showing 48 colors for 10 categories with 4 grayscales. Colors are defined using HTML Hexcode numbers.

DataTrac 3 Design Criteria

PAGE CHROME: Environmental Science

LINES AND BARS: High contrast colors.

65 COLORS Requested

    12 different color categories with 5 grayscale levels in each category. + 5 spare masters.

DELIVERABLES

    PDF Style Guide with swatches showing 48 colors for 10 categories with 4 grayscales.

    Colors are defined using HTML Hexcode numbers.

HUMAN LIMITATIONS: COLOR PERCEPTION

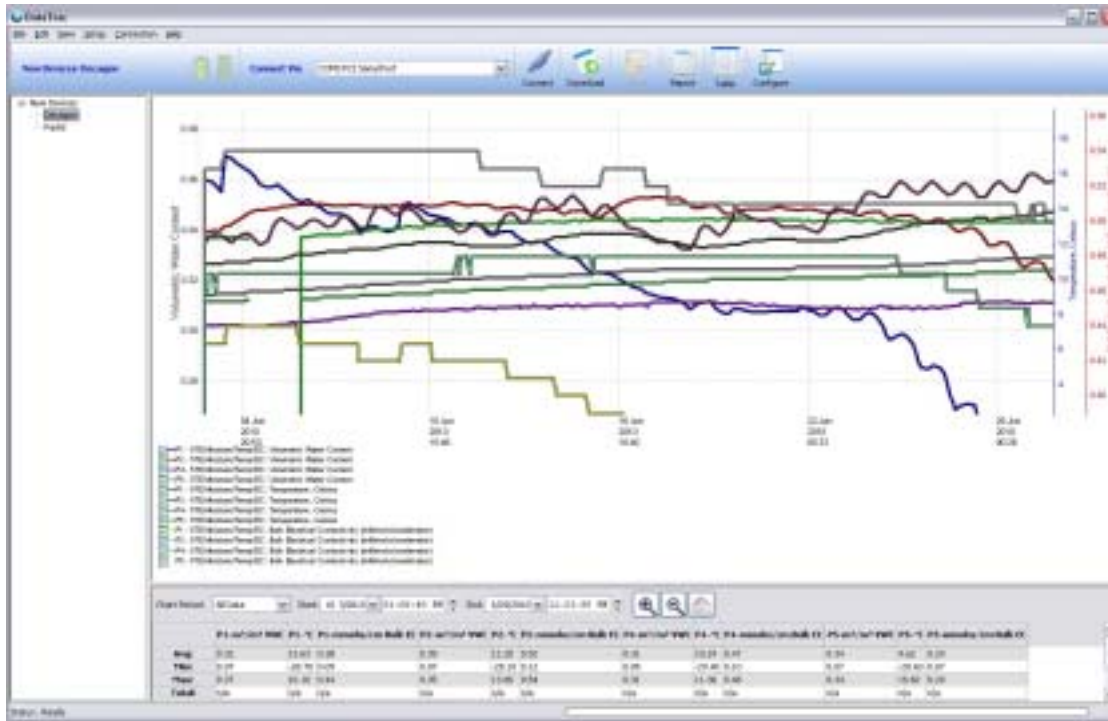   Lowest grayscale of any category must be 30%.

    Yellow is forbidden as it is too close to white. Gray is forbidden because those are just tints of black.

MEASUREMENT --categories

    1. Volumetric water content (VWC)

    2. Temperature

    3. Electrical Conductivity (EC)

    4. Leaf Wetness

    5. Precipitation

    6. Wind speed

    7. Radiation (undefined)

    8. Humidity (RH)

    9. Photosynthetically Active Radiation (PAR)

    10. Water Potential
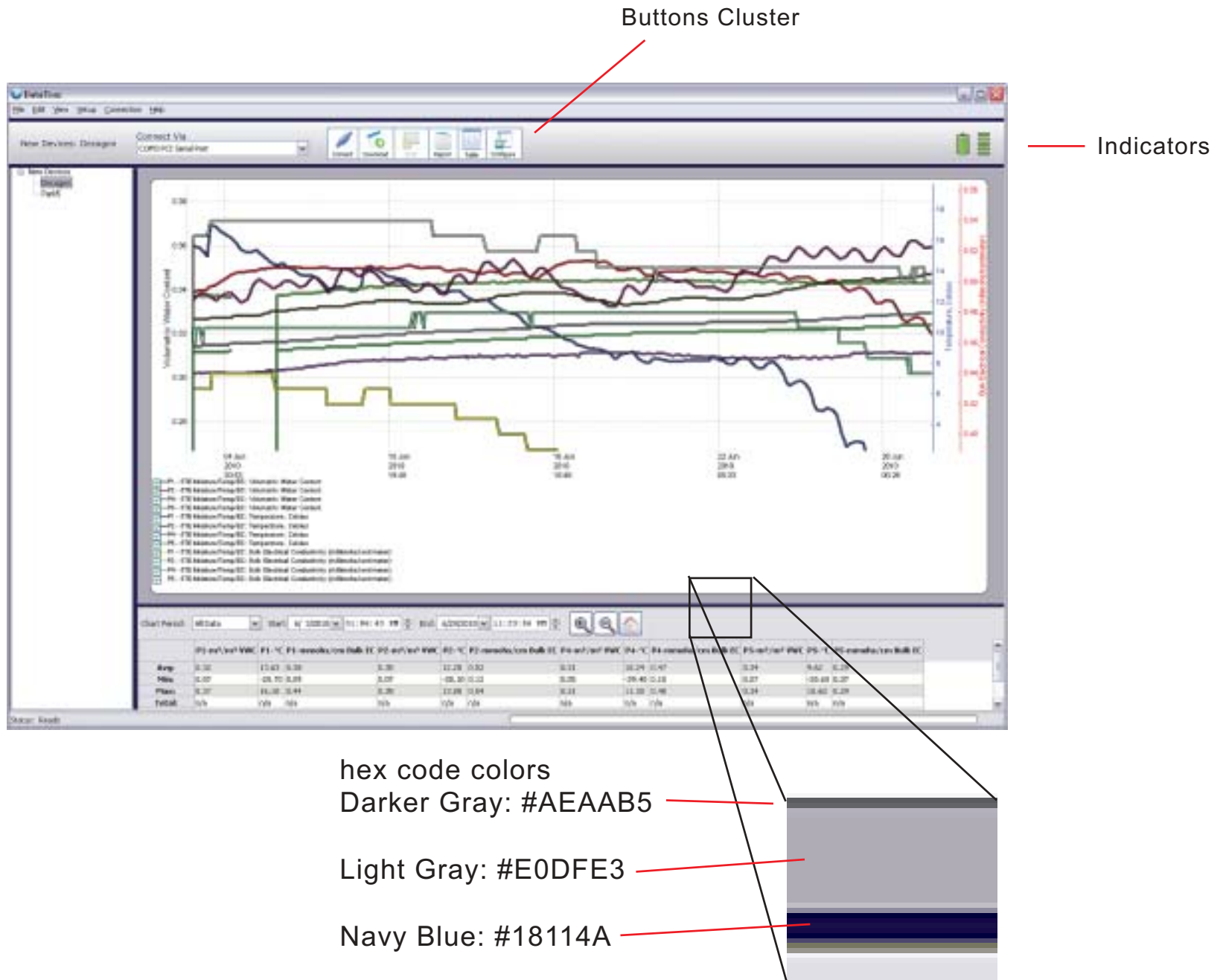
    11. Air Pressure (undefined)

    12. Drainage

Simple changes improve GUI usability .

Buttons Cluster

Indicators

hex code colors
Darker Gray: #AEAAB5

Light Gray: #E0DFE3

Navy Blue: #18114A

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Data colors

While there are millions of colors to choose from — there are limitations for human perception of color differences.

The color set is limited to elemental "crayon" colors and their tints (grayscales.) When rainbow colors are too close, they become unusable as differentiators— especially on electronic displays which vary in age and settings.

Only 44 colors are recommended and even that is pushing human patience and tolerance.

A primary goal is to reduce visual noise and improve human interpretation of complex data.

Where more than four colors are needed for one parameter, it will be neccessary to use dashed lines or other symbols in charting more data.

There is a heirarchy. The solid color should be assigned first and then descend to lighter tints in order. This will create a subtle "depth illusion" on screen.

Volumetric Water Content (VWC)

Orange

ff6600	ff923c	ffb16c	ffd0a3
100%	70%	50%	30%

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Temperature

Red

ff0000
100%

ff5533
70%

ff8562
50%

ffb59a
30%

Electrical Conductivity (EC)

Dark Green

006633	ff5533	ff8562	ffb59a
100%	70%	50%	30%

Drainage

Blue

0033ff
100%

4c70ff
70%

7f99ff
50%

b3c2ff
30%

Water Potential

Brown

663333
100%

947070
70%

b39999
50%

d1c2c2
30%

Wind Speed

Black

000000
100%

4c4c4c
70%

7f7f7f
50%

b3b3b3
30%

Leaf Wetness

Light Green

99cc33	b8dc70	cce699	e1f0c2
100%	70%	50%	30%

Air Pressure

Aqua

00cccc

100%

4cdcdc

70%

7fe6e6

50%

b3f0f0

30%

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Precipitation

Dark Blue

| 000099 | 4c4cb8 | 7f7fcc | b3b3e1 |
| 100% | 70% | 50% | 30% |

Humidity (RH)

Purple

| 990099 | b84cb8 | cc7fcc | e1b3e1 |
| 100% | 70% | 50% | 30% |

Photosynthetically Active Radiation (PAR)

Rhodimine
Red

ff0099

100%

ff4cb8

70%

ff7fcc

50%

ffb3e1

30%
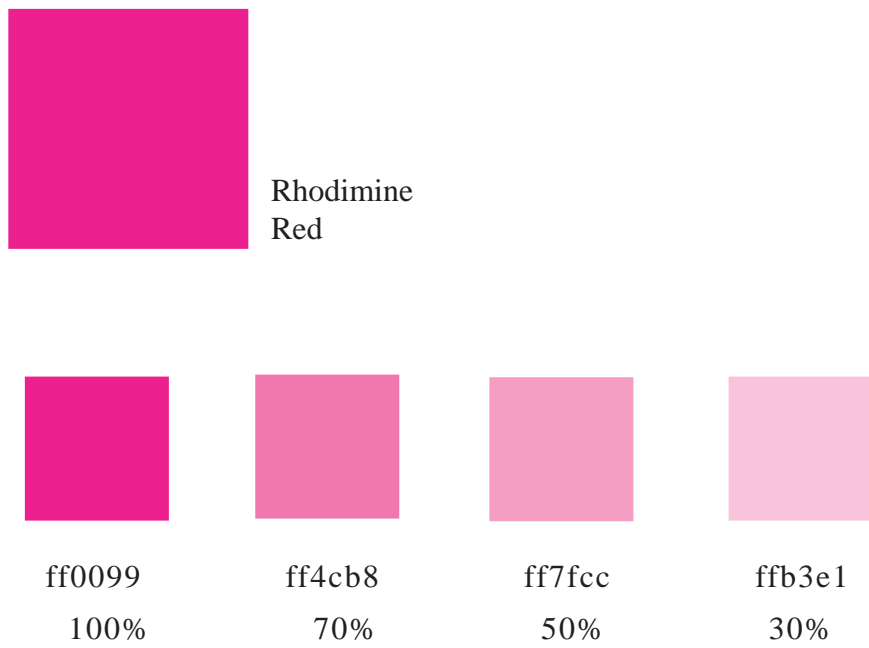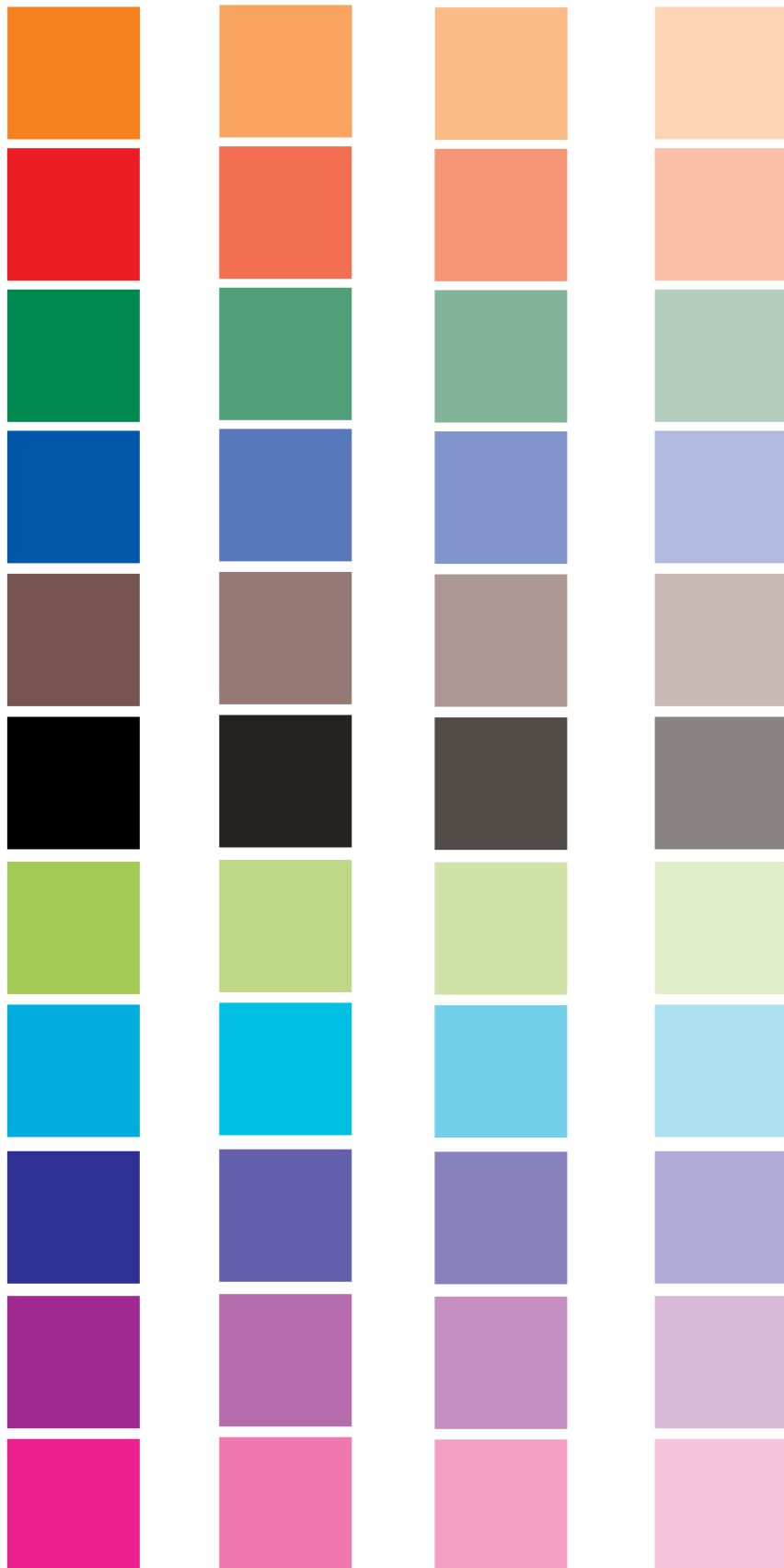
44 colors

These two end swatches show how difficult it can be to differentiate colors in some cases. Here they are almost identical at 30%.

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