



**Eco-Rental
Solutions**



Build Your Perimeter Air Monitoring Station

Perimeter Air Monitoring System Selection Guide

Every Eco-Rental Solutions Perimeter Air Monitoring System starts with a rugged environmental enclosure and tripod designed to protect monitoring equipment from weather and harsh site conditions while providing reliable, long-term operation. These systems are frequently deployed for regulated Community Air Monitoring Plans (CAMP), SCAQMD Rule 1466 compliance and other environmental monitoring projects where dependable, continuous data collection is essential.

Simply answer the following questions to build the monitoring system that best fits your project.

QUESTION 1

How many monitoring stations are required?

Most projects require at least two monitoring stations, although the actual number is typically determined by:

- Site size
- Site layout
- Regulatory requirements
- Upwind/downwind monitoring requirements
- Consultant or agency specifications

QUESTION 2

What do you need to monitor?

Is your project subject to SCAQMD Rule 1466?

South Coast Air Quality Management District (SCAQMD) Rule 1466 establishes specific monitoring requirements for certain excavation, remediation, and earth-moving activities involving contaminated soils.

If YES

Your monitoring system configuration is generally already defined by the regulation.

A typical Eco-Rental Solutions Rule 1466 monitoring station includes:

- ✓ TSI DustTrak 8530 with TSI Heated Sampling Inlet and TSI Auto Zero Module
- ✓ Weather Station
- ✓ Environmental Enclosure & Tripod
- ✓ Aethair Thiamis Telemetry
- ✓ Environet Cloud Reporting Platform

You may not need to complete the remainder of this guide.

If NO

Please proceed below to select the instruments required for your project.

Dust / Particulate Matter

Select this option if your project requires monitoring of:

- Construction dust
- Demolition dust
- Remediation activities
- Community air quality concerns
- General particulate emissions

Volatile Organic Compounds (VOCs)

Select this option if your project requires monitoring of:

- Petroleum vapors
- Solvent vapors
- VOC emissions
- Remediation activities
- Industrial emissions

Recommended Instrument:

Honeywell RAE Systems MiniRAE 3000 PID
Honeywell RAE Systems MiniRAE 3000 PID with 11.7eV lamp (for measuring specialized compounds with higher ionization potentials)
Honeywell RAE ppbRAE 3000 PID

Hazardous Gases

Select this option if your project requires monitoring of:

- PID (VOCs)
- LEL (Combustible Gas)
- Oxygen (O₂)
- Carbon Monoxide (CO)
- Hydrogen Sulfide (H₂S)

Optional sensors available for:

- Nitric Oxide (NO)
- Nitrogen Dioxide (NO₂)
- Sulfur Dioxide (SO₂)
- Chlorine (Cl₂)
- Ammonia (NH₃)

Recommended Instrument:

Honeywell RAE Systems MultiRAE with P2P Protocol

Note: The MultiRAE also has a Photoionization Detector (PID) for VOC detection, so the MultiRAE would be selected instead of the MiniRAE 3000.

Sound Monitoring

Recommended Instrument:

Quest SoundProDL Type 2 Sound Level Meter

Select this option if your project requires environmental noise monitoring.

Proceed to Question 3.

QUESTION 3

Which dust monitor is right for your project?

(Only answer if dust monitoring is required.)

Do you need to monitor multiple particulate fractions simultaneously?

Examples:

- PM1
- PM2.5
- PM4
- PM10
- Total Dust

If NO:

Recommended Instrument:

TSI DustTrak II 8530

Benefits:

- Cost-effective solution
- Reliable real-time dust monitoring
- Excellent for general particulate monitoring applications
- Ideal when only a single dust fraction is required

If YES:

Recommended Instrument:

TSI DustTrak DRX 8533

Benefits:

- Simultaneously measures multiple particle size fractions
- Most commonly selected for perimeter air monitoring
- Ideal for regulatory and public-facing projects
- Provides the most comprehensive particulate dataset

Still not sure?

Most monitoring applications do not require the DustTrak 8533's ability to simultaneously measure multiple particulate size fractions. However, we recommend consulting with your client, project specifications, regulatory agency, or governing authority to confirm the monitoring requirements for your specific application.

Proceed to Question 4.

QUESTION 4

How will your monitoring station be powered?

AC Power

Best for:

- Semi-permanent projects
- Permanent installations
- Sites with available utility power

Advantages:

- Continuous operation
- Lowest maintenance requirements
- Ideal for telemetry-equipped systems

Battery Power

Best for:

- Short-term projects
- Frequently relocated monitoring stations
- Temporary construction projects
- Remote locations without AC power

Advantages

- Fully portable
- No utility power required
- Quick deployment

Solar Power

Best for:

- Remote locations with unobstructed southern sky exposure
- Long-term deployments
- Sites without available utility power

Advantages:

- Extended unattended operation
- Reduced site visits
- Ideal for remote telemetry applications

Proceed to Question 5.

QUESTION 5

Do you need weather monitoring?

Recommended for Most Projects

Weather data provides essential context for interpreting monitoring results and serves as valuable project documentation by identifying upwind and downwind conditions during monitoring activities

Recommended Weather Station:

AirMar 150WX
Lufft WS500
Davis VantagePro 2

Measures:

- Wind Speed
- Wind Direction
- Temperature
- Relative Humidity
- Barometric Pressure

Weather monitoring is strongly recommended for:

- Dust monitoring projects
- Regulatory compliance projects
- Community monitoring programs
- Long-term environmental monitoring

Proceed to Question 6.



QUESTION 6

Would you benefit from cloud-based telemetry and remote monitoring?

If you would like to:

- ✓ View monitoring data from your office
- ✓ Access live readings from a smartphone or tablet
- ✓ Receive SMS and E-mail alarm notifications
- ✓ Generate automated reports
- ✓ Reduce site visits
- ✓ Monitor multiple sites simultaneously

Then telemetry may be a valuable addition to your monitoring system.

Recommended Telemetry Solution

Aethair Thiamis Telemetry with Environet Cloud Platform

The Aethair Thiamis transmits monitoring data from the field directly to the Environet cloud platform, providing real-time visibility of your project from virtually anywhere.

Real-Time Monitoring

View:

- Dust concentrations
- VOC levels
- Gas readings
- Weather conditions
- Instrument status
- Historical trends
- 15-minute rolling averages

from:

- Computers
- Tablets
- Smartphones

Automated Alerts

Receive notifications when:

- Action levels are exceeded
- Alarm thresholds are reached
- Communications are interrupted
- Equipment requires attention

Notifications can be delivered via:

- Email
- Text Message
- Mobile alerts

Advanced Reporting

Generate:

- Daily reports
- Weekly reports
- Monthly reports
- Client reports
- Regulatory documentation packages

Reports can include:

- Trend graphs
- Exceedance summaries
- Upwind/downwind and other weather correlations
- Site activity documentation

AI Assisted Analytics through Noesis®

Environet's advanced analytics tools help users:

- ✓ Identify trends and anomalies
- ✓ Highlight exceedance events
- ✓ Review large datasets more efficiently
- ✓ Correlate environmental conditions with monitoring results
- ✓ Simplify project reporting and data interpretation

If you are unsure, Eco-Rental Solutions can assist with evaluating site suitability for telemetry. Proceed to Question 7.

QUESTION 7

Is reliable cellular service available at your monitoring location?

The Aethair Thiamis telemetry system communicates with the Environet platform using cellular networks.

Before selecting telemetry, confirm:

- ☐ Reliable cellular coverage exists at the site
- ☐ Signal strength is adequate
- ☐ Cellular service is consistently available throughout the monitoring area

Note: The Aethair Thiamis can utilize a strong WiFi signal connection if available on location in lieu of or to supplement cellular signal.

Common locations requiring additional evaluation include:

- Remote rural areas
- Deep excavations
- Landfills
- Mountainous terrain
- Underground work areas
- Heavily obstructed industrial facilities

YOUR SYSTEM CONFIGURATION

Base Equipment Included:

- ☐ Environmental Enclosure
- ☐ Tripod Mounting System

Monitoring Parameters

- ☐ Dust
- ☐ VOCs
- ☐ LEL / O₂ / CO / H₂S
- ☐ Sound

Dust Instrument

- ☐ DustTrak 8530
- ☐ DustTrak 8533

Gas Instrument

- ☐ MiniRAE 3000
- ☐ MultiRAE with P2P Protocol
- ☐ Honeywell RAE Systems ppbRAE 3000

Calibration Supplies

- ☐ Multigas Calibration Cylinder
- ☐ Isobutylene
- ☐ Regulators

Power

- ☐ AC Power
- ☐ Battery Power
- ☐ Solar Power

Weather Monitoring

- ☐ AirMar 150WX
- ☐ Lufft WS500
- ☐ Davis VantagePro 2

Telemetry

- ☐ Aethair Thiamis
- ☐ Environet Subscription

Need help selecting the right configuration?

Contact Eco-Rental Solutions and our monitoring specialists will help configure a system that meets your project objectives, regulatory requirements, site conditions, and budget.