Particulate Matter Monitoring in the Eastern Sierra Region

A Brief History

Presented by
Great Basin Unified Air Pollution Control District

Owens Lake April 1995

GBUAPCD Monitoring History
July 2015

Monitoring Synopsis

- Great Basin Unified Air Pollution Control District formed in 1974
- Monitoring in Eastern Sierra began in 1978 using high-volume samplers collecting total suspended particulate matter (TSP)
- District began monitoring PM10 in 1985
- Federal EPA PM10 standard promulgated July 1, 1987
- Owens Valley Planning Area designated Nonattainment for PM10 August 7, 1987
- LADWP ordered to mitigate emissions from Owens Lake, July 2, 1997

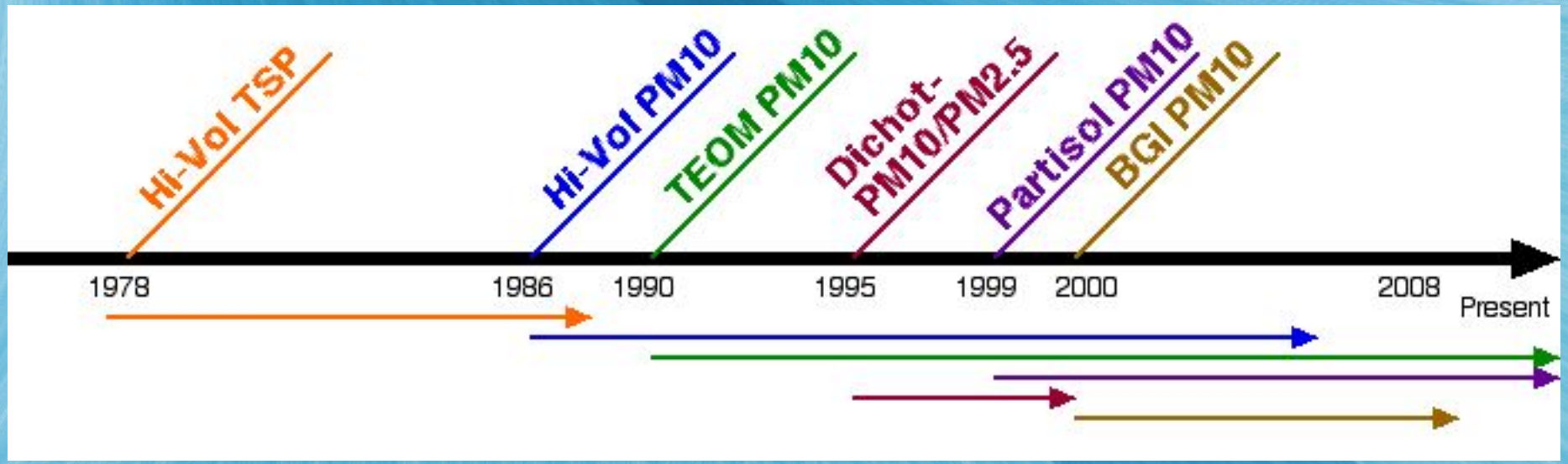
Litigation Synopsis

- Two lawsuits in LA Superior Court — Withdrawn by DWP
- DWP appeals 2011 Order to ARB — ARB finds for Great Basin
- DWP appeals 2012 GB fees to ARB — Hearing held June 2013
- DWP sues in Federal Court — Dismissed by Court
- Great Basin sues for fee payment — DWP ordered to pay
- DWP cross-complaint in fee case — Dismissed by Court
- Great Basin sues for penalties — $1.2 million settlement
- DWP appeals 2012 Order to ARB — Hearing April 2014
- DWP sues CARB and GB re: 2011 — Sacramento Court's preliminary decision released September 2014 – Great and CARB prevail on all issues. Great Basin works with LADWP to draw up a stipulated judgment prior to final Court decision
- Sacramento Court approves stipulated judgment resolving all issues between Great Basin and LADWP December 2014

Monitoring Rationale

- Regulation-driven
- Determination of Attainment Status
- Determining Compliance

Monitoring Timeline



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High-Volume TSP Monitoring 1978-1989

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High-Volume PM10 Monitoring

Andersen SSI 1985 - 2006

Wedding 1988 - 1997

PM10 Intercomparison 1988 - 1989

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Continuous PM10 Monitoring

Tapered Element Oscillating Microbalance 1990 - Present

Portable PM10 Monitoring

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Portable PM10 Monitor Power System

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Mini-Vol PM10 Monitor

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Flood Irrigation Project PM10 Monitor

Constructed by the District for the North FIP PM10 Monitoring Program

1993 - 1994

Wind Tunnel Surface Emissions Testing

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District's Portable Wind Tunnel

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Sequential Partisol PM10 Monitor

1999 - Present

Keeler PM10 Monitors

2000 - Present

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Low-Power PM10 Monitors

Solar-powered BGI Monitors - Mono Lake 2000 - 2008

Solar-Powered TEOM Monitor

2007 - Present

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Solar-Powered TEOM Monitor

2007 - Present

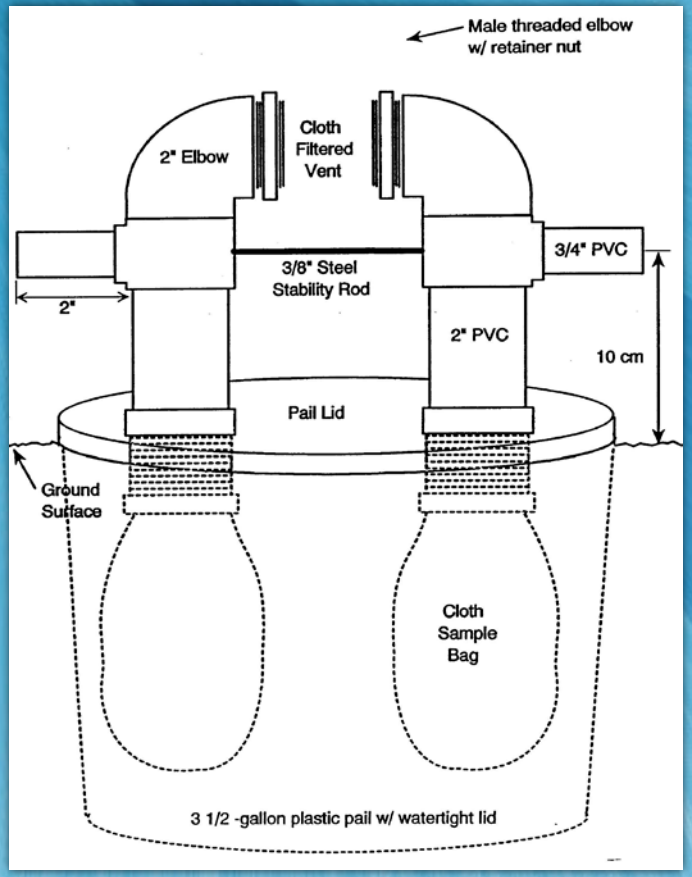
Special Studies

- PM10 Monitoring Methods Comparison at Owens Lake 1993-1999
- E-BAM - FDMS/TEOM Comparison 2005
- Met One eSampler - TEOM Comparison 2006

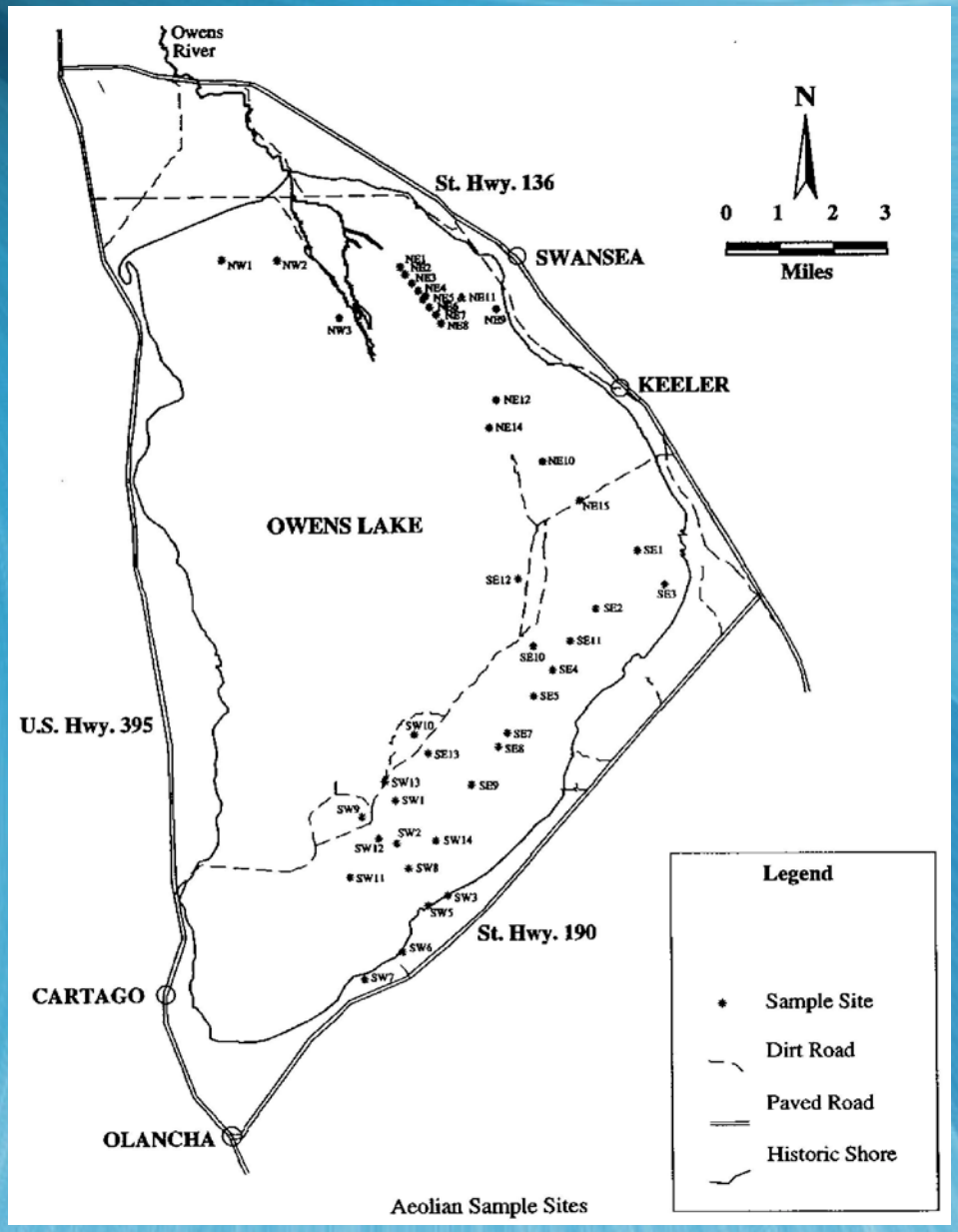
Considerations and Recommendations

- EPA Reference or Equivalent Method Monitors are required to Determine Compliance/Attainment
- Dust ID Model Requires Hourly Data
- EPA-approved Monitors providing Hourly PM10 Concentrations: TEOM and the BAM
- Light-scattering and Beta Attenuation monitors have precision, accuracy, calibration, maintenance, and maximum concentration issues
- TEOM monitors best-suited for District sites

Directional Sand Transport Sampler



Sand Motion Monitoring Network 1993-1995



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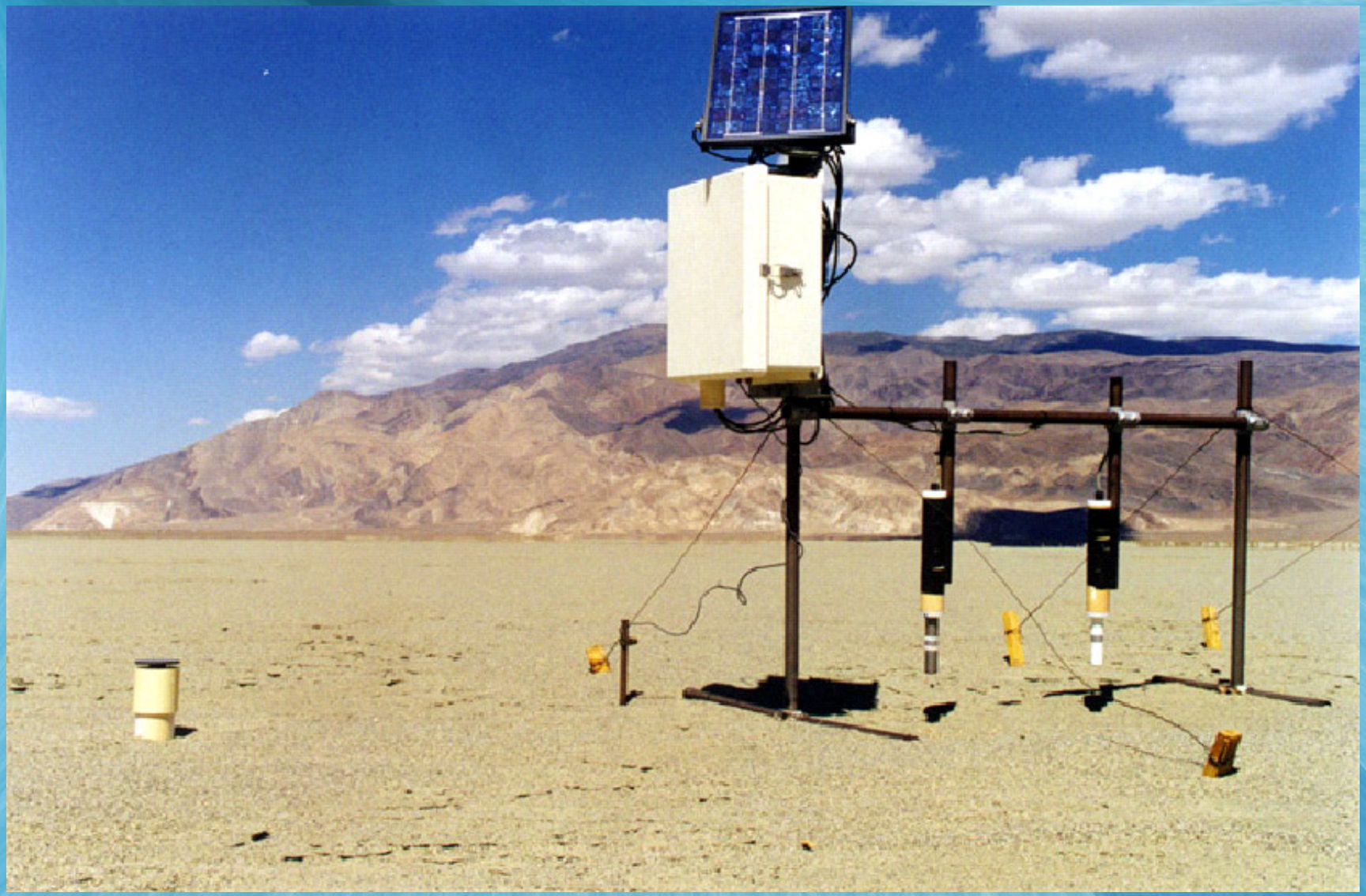
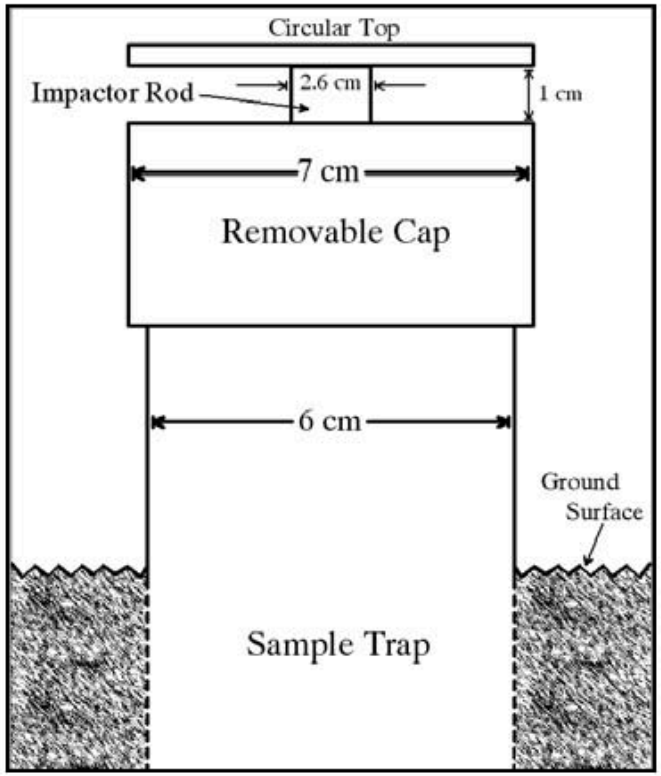
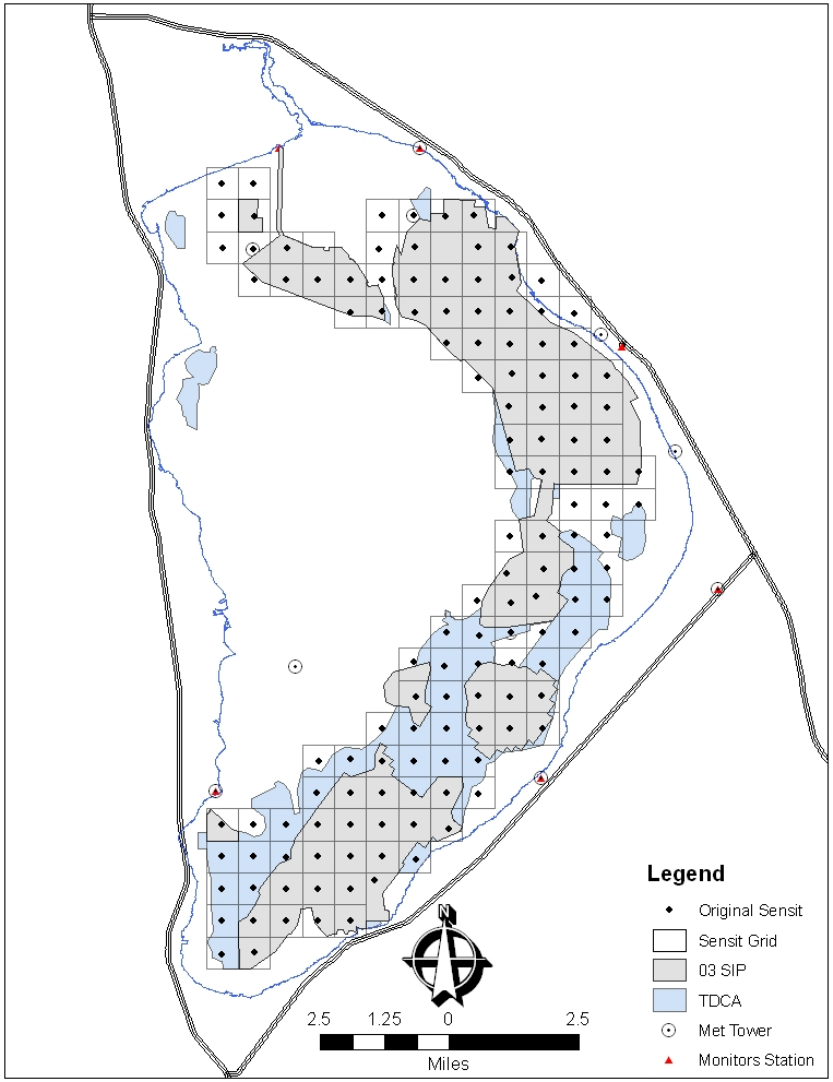
Sensits & Cox Sand Catcher



Cox Sand Catcher



Dust ID Network 2000



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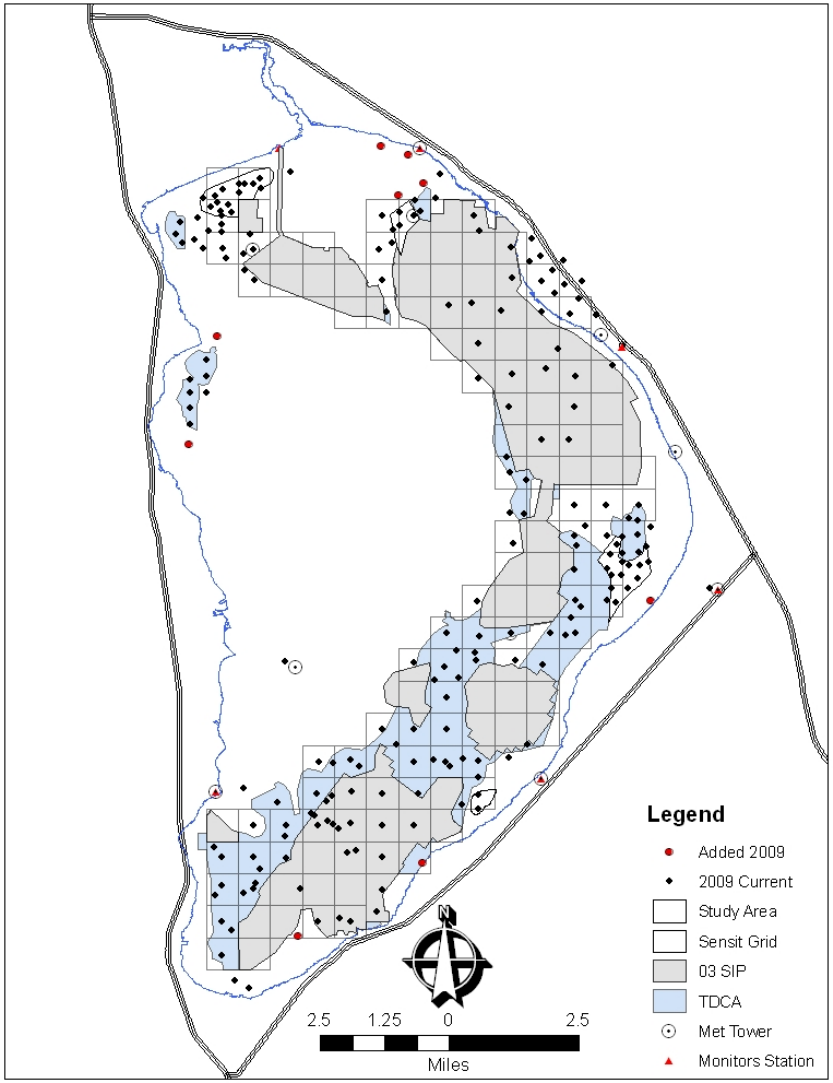
Dust ID Network 2009



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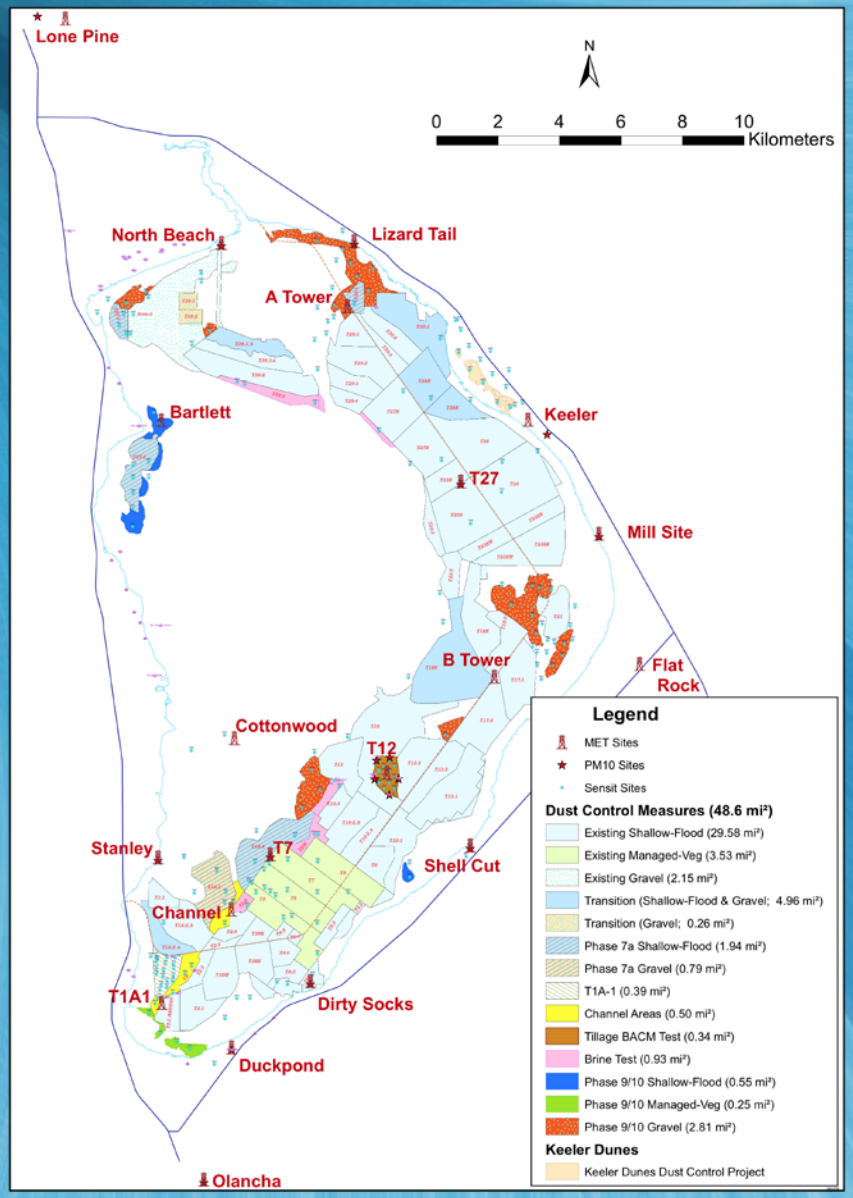
Dust ID Network 2015



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