AB 617 Shafter: Update on DPR 1,3-Dichloropropene Mitigation Pilots

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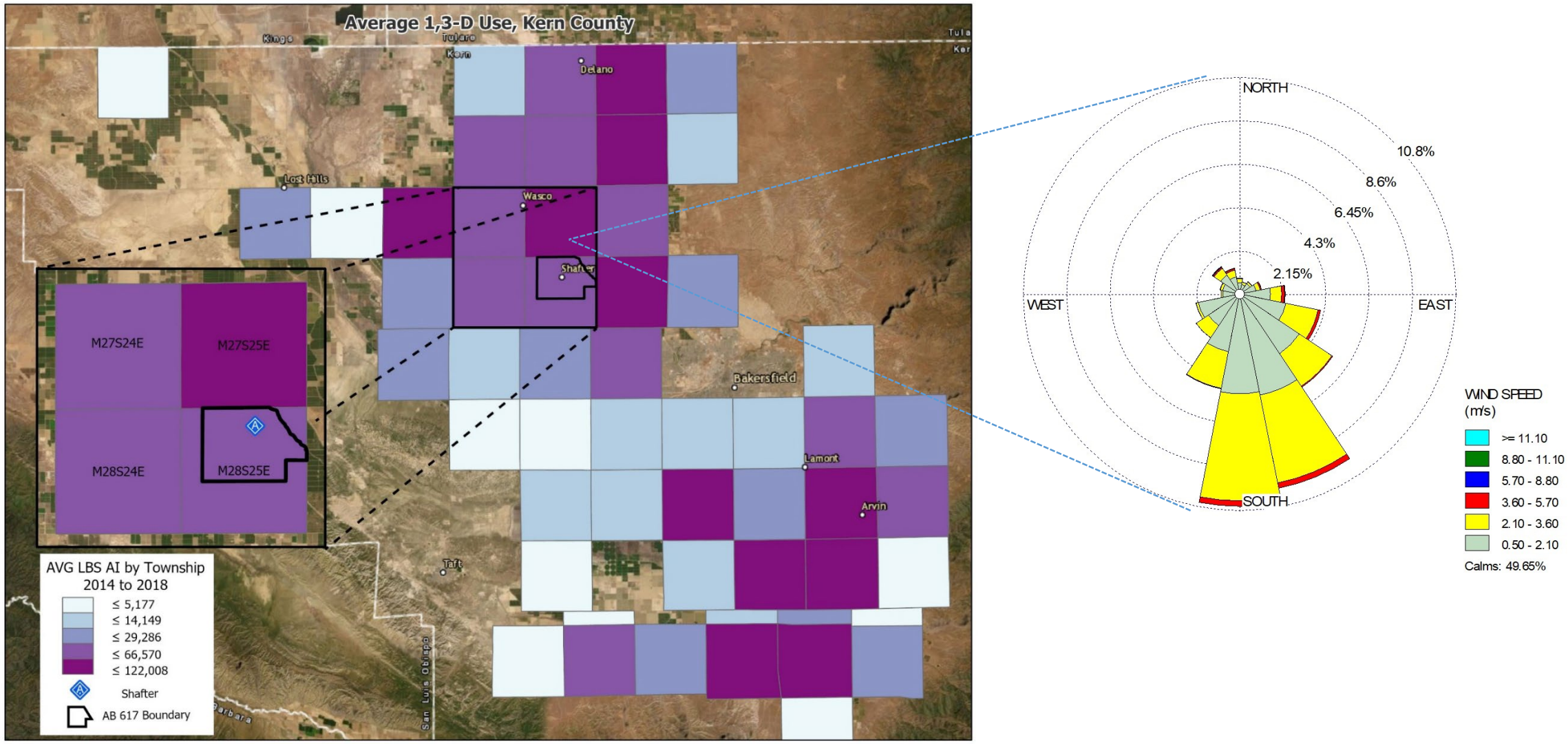
Scientific Review Panel on Toxic Air Contaminants

AB 617 and DPR's 1,3-D mitigation pilot program

- AB 617 Community: Shafter
  - Shafter Community Emission Reduction Plan (CERP) – includes 1,3-D
  - Shafter Community Steering Committee (CSC) – ongoing community engagement
  - Geographical – Shafter is one of 3 pilot study areas and DPR has an ambient Air Monitoring Network (AMN) station at Sequoia Elementary School

- DPR pilot program goal: explore alternative 1,3-D application methods to evaluate feasibility of implementation and effectiveness of methods in reducing 1,3-D emissions and acute exposures

AB 617 – Shafter 1,3-D Pilot Program



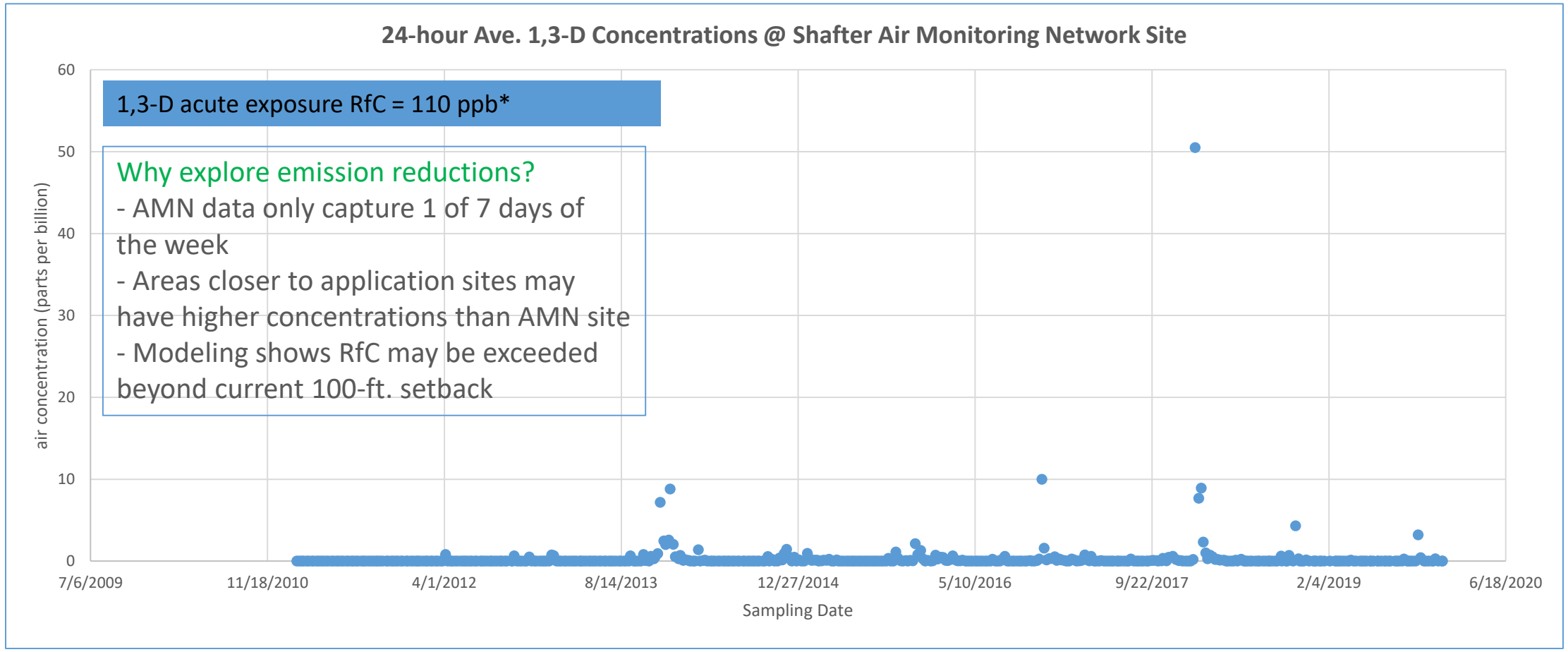
Background on 1,3-D

- 1,3-D is a widely-used, pre-plant fumigant that controls pests and diseases in soil
- Used to treat fields for growing fruit and nut trees, strawberries, grapes, carrots, sweet potatoes and other crops
- 1,3-D is a Toxic Air Contaminant
  - Use requires restricted materials permit issued by the County Agricultural Commissioner (CAC)
  - Must have recommendation by licensed pest control advisor
  - Applications must be supervised by a licensed certified applicator
  - DPR can recommend permit conditions to CACs

1,3-D Health-Protective Reference Concentrations

- An aim of the pilot program is to further ensure health-based acute reference concentrations (RfC) are not exceeded
- DPR has conducted human health risk assessments for 1,3-D
  → RfC for acute, sub-chronic & chronic exposures
- RfC = estimates of inhalation exposures to humans that are likely to be without appreciable risk of deleterious effects
- 2015 DPR Risk Characterization Document → resident/bystander acute scenarios = 110 parts per billion or ppb (children), 367 ppb (adults)
- Acute inhalation endpoint → weight loss

Historical Measured Ambient 1,3-D Air Concentration at Shafter AMN Site



* Acute exposure RfC has been exceeded once @111 ppb (Parlier on 10/18)

1,3-D Pilots: Why and How

- Pilot Objectives
  - Reduce emissions by providing growers and applicators with alternative application methods that will reduce 1,3-D emissions to levels comparable to use of totally impermeable film (TIF) tarps
  - Reduce emissions by at least 60%, compared to untarped applications
- Implementation Approach
  - DPR used HYDRUS & AERFUM models to identify mitigation options
  - Growers and applicators in study areas will select and use options over 1-year program duration

Timeline and Pilot Program Developments

- Planning for 1-year pilot program in high use areas started in 2019 with implementation starting in Fall 2020
- Shafter community expressed interests in emission reductions (including use of tarps)
- Also discussed technical feasibility and participation with grower groups, applicators, CACs, and registrant
- Critical pilot information: field-level monitoring data from applications using alternative options to characterize acute exposures to further validate models
  - Will inform future rulemaking
- Economic and operational impacts from COVID-19 shifted pilot program emphasis to generation of field-level monitoring data
  - Weekly ambient air monitoring data collection for 1,3-D will continue

Emission Reduction Options

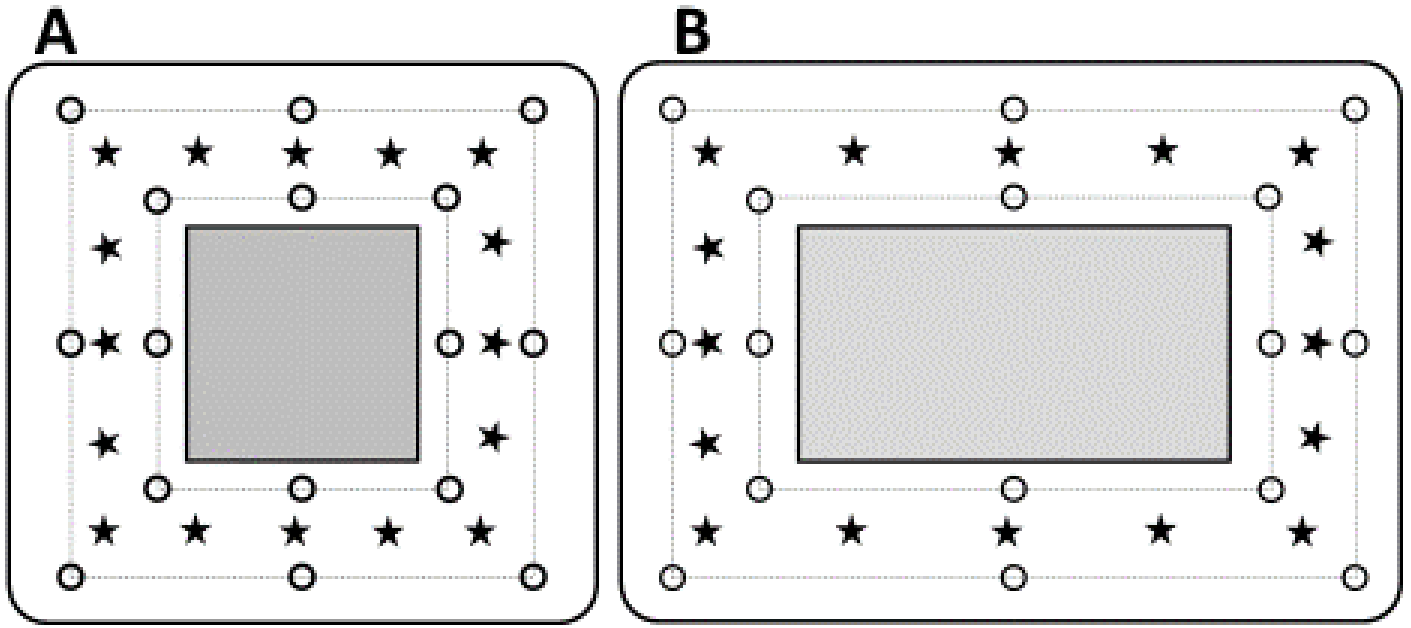
Emission Reduction Options (9/20)
Complete and partial TIF tarping
Fumigation injection at deeper soil depths
Increasing pre-application soil moisture
~~Post-application water seal~~
Reducing application rate
Limiting acreage (treatment block size)
Setback distance from occupied sensitive sites

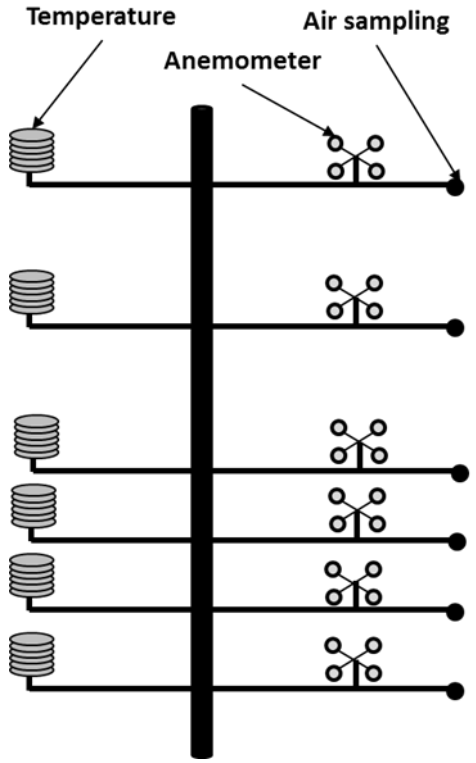
- No commercial-scale alternative pesticides exist
- Certain options more feasible for growers/applicators
- Individual options and combinations of options (in orange rows above) = ~12 methods
- Options in grey rows dictated by selection of options in orange rows in order to meet acute RfC

Current Status

- Entering fieldwork phase → initial fields being identified with field sampling starting in October
- Shafter area - a monitoring priority to DPR
- Need to closely coordinate with growers, applicators and CACs to identify, select, and monitor alternative applications
- Keeping community closely informed is very important
  - Shafter Community Steering Committee and its Pesticide Sub-committee = additional level of engagement
- DPR is targeting at least 4 or 5 applications in study areas – more growers may try alternative methods to evaluate feasibility
  - Fields need to meet selection criteria to produce high quality data
  - Registrant also investigating 3 or more methods in addition to DPR pilots
  - Pilot program could serve to demonstrate feasibility of methods to all growers who rely on 1,3-D

Field Monitoring Schematic



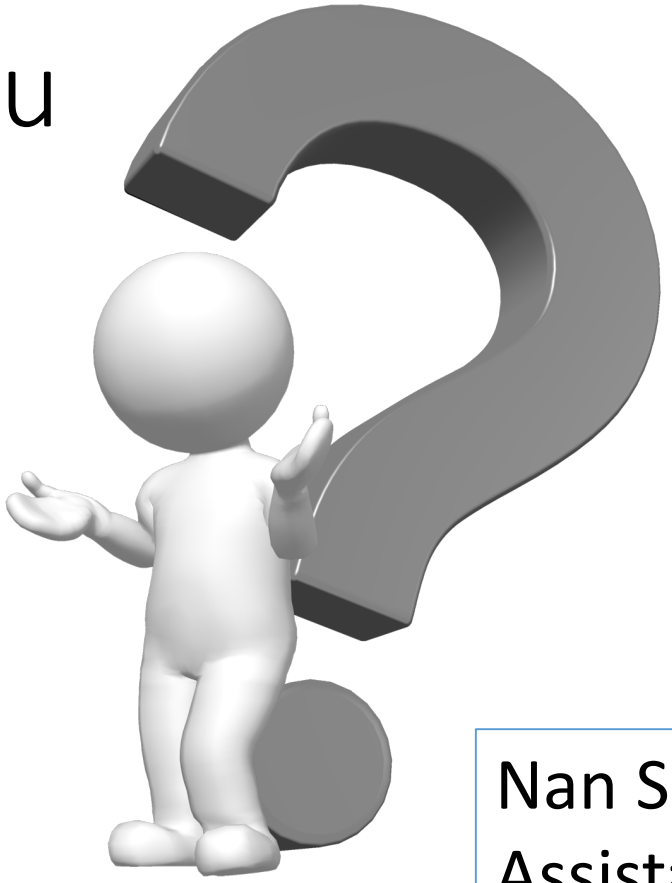


- Air samplers using sorbent tubes arranged around field
- Sampling interval over 7 days to capture field emissions
- Hundreds of samples generated per field

Potential Considerations for SRP in 2021

- Opportunity for feedback on initial fields identified/selected and alternative methods monitored
- Review and discussion of data generated from various stages of pilot program
  - Compare and discuss alternative method emission reductions. Do the methods meet 60% reduction target?
  - Compare and discuss modeling and monitoring results.

Thank You



Questions?

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