AGENDA: 3

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Mission Statement and Schedule for 2021

Stationary Source and Climate Impacts Committee Meeting
March 15, 2021

Damian Breen
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Outcome

- Review Committee Mission Statement
- Devise Committee Calendar that meets Agency work goals for 2021

Outline

- Background
- Previous Committees' Mission Statements
  - Stationary Source
  - Climate Protection
- Mission Statement
- Proposed Committee Calendar

Requested Action

1. Approve the calendar for its 2021 Meeting Schedule.

Background

- February 3, 2021 - “Stationary Source” and “Climate Protection” Committees merged to form the new “Stationary Source and Climate Impacts Committee”.
- New Committee Structure
  - 2 Co-Chairpersons
  - 1 Vice-Chairperson
- Calendar required to show each Committee’s 2021 work schedule

Previous Committees' Mission Statements

Stationary Source Committee: "*…reviews and recommends stationary source policies, issues, and programs related to air quality management plans, air quality and economic modeling, permitting, compliance, small business assistance, toxics, source education, rule development, and grants. The Committee also advises the Board of Directors on the Air District's position on all regulations that affect stationary sources...*"

Climate Protection Committee: "*…reviews the Air District's climate protection policies, activities, and funding, and makes applicable recommendations to the Board of Directors. The committee stays informed on current and proposed climate protection actions by local, regional, state, federal, and international agencies and organizations...*"

Mission Statement

Stationary Source and Climate Impacts Committee: "…*will consider and recommend policies to the Board of Directors relating to stationary sources. The Committee shall recommend positions to the Board of Directors on stationary source policy issues affecting the implementation of the State and Federal Air Quality Management Plans and key planning policy issues such as federal and State Air Quality Management Plan development and air quality and economic modeling. The Committee shall review and make recommendations to the Board of Directors regarding major stationary source programs including: permitting, compliance, small business assistance, toxics, source education, and rule development. The Committee shall recommend to the Board of Directors positions concerning federal and state regulations that affect stationary sources. The Committee shall recommend policies to the Board of Directors for disbursal of supplemental environmental project grants.*

The Committee will also consider and recommend to the Board of Directors policies and positions of the District relating to climate protection activities and funding relative to stationary sources. The Committee will keep itself informed on actions and proposed actions by local, regional, state, federal, and international agencies and organizations relating to climate protection relative to stationary sources..."

Committee Calendar

Meeting Schedule	Topics
March	• Source Test 101 • Update on Amendments to Regulation 6, Rule 5: Particulate Emissions from Petroleum Refinery Fluidized Catalytic Cracking Units (Rule 6-5)
April	• Building De-Carbonization Discussion • Overview of Datacenters in the Bay Area
May	• Update on Potential Modifications to the Air District's Permitting Program • Update on the Air District's CEQA Thresholds
June	• Update on the Implementation of Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities (Rule 11-18) • Next Steps on the Particulate Matter Strategy

Committee Calendar (cont.)

Meeting Schedule	Topics
July	• Update on Amendments to Regulation 6, Rule 5: Particulate Emissions from Petroleum Refinery Fluidized Catalytic Cracking Units (Rule 6-5)
August	• No Meeting
September	• Update on Building De-Carbonization Rulemaking Efforts • Update on Amendments to Regulation 8, Rule 5: Storage of Organic Liquids (Rule 8-5);
October	• Update on the South Bay Odor Study • Update on Methane Strategy Implementation • F-Gas Strategy Discussion

Committee Calendar (cont.)

Meeting Schedule	Topics
November	• Updates on Rules from Community Emission Reduction Plans
December	• Update on the Implementation of Regulation 11, Rule 18: Reduction of Risk from Air Toxic Emissions at Existing Facilities • Overview of Bay Area Woodsmoke Impacts • Update on Amendments to Regulation 8, Rule 8: Wastewater Collection and Separation Systems (Rule 8-8) • Update on Amendments to Regulation 8, Rule 18: Equipment Leaks (Rule 8-18)

Feedback Requested/Prompt

Recommend the Committee:

1. Approve the calendar for its 2021 Meeting Schedule.

AGENDA: 4

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Update on the Development of Amendments to Rule 6-5

Stationary Source and Climate Impacts Committee Meeting
March 15, 2021

Greg Nudd
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Outcome

- Provide information and updates on the development process for amendments to Rule 6-5
- Get direction on next steps

Outline

- Background
- Draft amendments and estimated impacts
- Workshop and public input
- New “Stair-Step” approach developed by staff
- Next steps

Requested Action

- Seeking direction on next steps

Background

- Fluidized Catalytic Cracking Units (FCCUs) convert heavy components of crude oil into gasoline and high-octane products
- Four of the five Bay Area refineries have FCCUs
  - Three FCCUs currently in operation, one already has a wet gas scrubber
  - Marathon FCCU has been indefinitely idled, but would be subject to rule and amendments if restarted
- Large source of particulate matter (PM) emissions
  - Over 800 tons per year of PM_{10}
  - Approximately 50% of overall PM_{10} emissions at these refineries
  - 17% of PM_{10} emissions from all permitted stationary sources

Background

- Rule 6-5 originally adopted in 2015 to reduce PM & precursors
- Assembly Bill (AB) 617 Expedited Best Available Retrofit Control Technology (BARCT) Implementation Schedule – Identified potential rule development efforts to evaluate and implement BARCT at FCCUs
- Further address PM emissions
- Achieve public health benefits and continue progress towards attainment of ambient air quality standards

Background (cont.)

- Air District currently developing amendments to Rule 6-5
- Released draft amendments in May 2020
- Further evaluation of impacts and other potential control options to reduce PM from FCCUs and updates to committee
- Released workshop package with draft amendments for both control options and information on potential impacts in January 2021

Most Recent Draft Amendments – Control Scenario A and B

Requirements	Control Scenario A (ESP)	Control Scenario B (WGS)
Ammonia (NH_3)	10 ppm	10 ppm
Sulfur dioxide (SO_2)	25 ppm (365-day average) 50 ppm (7-day average)	25 ppm (365-day average) 50 ppm (7-day average)
Total PM_{10}	0.020 gr/dscf	0.010 gr/dscf
Effective date	January 1, 2023	January 1, 2026
Affected refineries	Chevron Products Richmond PBF Martinez Refinery	Chevron Products Richmond PBF Martinez Refinery *Marathon Martinez Refinery*
Anticipated controls	Improve/expand existing controls: ESP, feed hydrotreatment, catalyst additives	Install new WGS

ppm = parts per million
gr/dscf = grains per dry standard cubic foot
ESP = electrostatic precipitator
WGS = wet gas scrubber

Control Scenario A: Estimated Impacts

Refinery	PM_{10} Reductions	Est. Capital Cost	Est. Total Annualized Cost	Cost Effectiveness
Chevron Richmond	80 TPY	$30 MM	$4.4 MM/year	$55,300/ton
PBF Martinez	170 TPY	$80 MM	$14 MM/year	$84,900/ton
Marathon Martinez	*0 TPY*	*$0*	*$0/year*	*n/a*
TPY = tons per year, MM = million				

- **Socioeconomic Impacts**
  - Not considered "significant" since costs are less than 10% of annual estimated profits for the Chevron and PBF refineries, based on 2019 sales estimates
  - Marathon Martinez Refinery complied with this standard before stopping production
- **Environmental Impacts Assessed Under CEQA**
  - Construction air quality impacts exceeds CEQA significance thresholds

Control Scenario B: Estimated Impacts

Refinery	PM_{10} Reductions	Est. Capital Cost	Est. Total Annualized Cost	Cost Effectiveness	Incremental Cost Effectiveness
Chevron Richmond	160 TPY	$241 MM	$39 MM/year	$239,600/ton	$423,400/ton
PBF Martinez	240 TPY	$255 MM	$40 MM/year	$165,000/ton	$359,400/ton
Marathon Martinez	*93 TPY*	*$235 MM*	*$38 MM/year*	*$406,400/ton*	–
TPY = tons per year, MM = million					

- **Socioeconomic Impacts**
  - "Significant" for all three impacted refineries since costs exceed 10% of estimated annual plant profits
  - Potential for job losses and/or fuel price increases
  - Marathon Martinez Refinery would have expenses under this scenario if they restarted production.
- **Environmental Impacts Assessed Under CEQA**
  - Construction air quality impacts exceeds CEQA significance thresholds
  - Operation water use exceed CEQA significance thresholds

Health Impacts Estimates

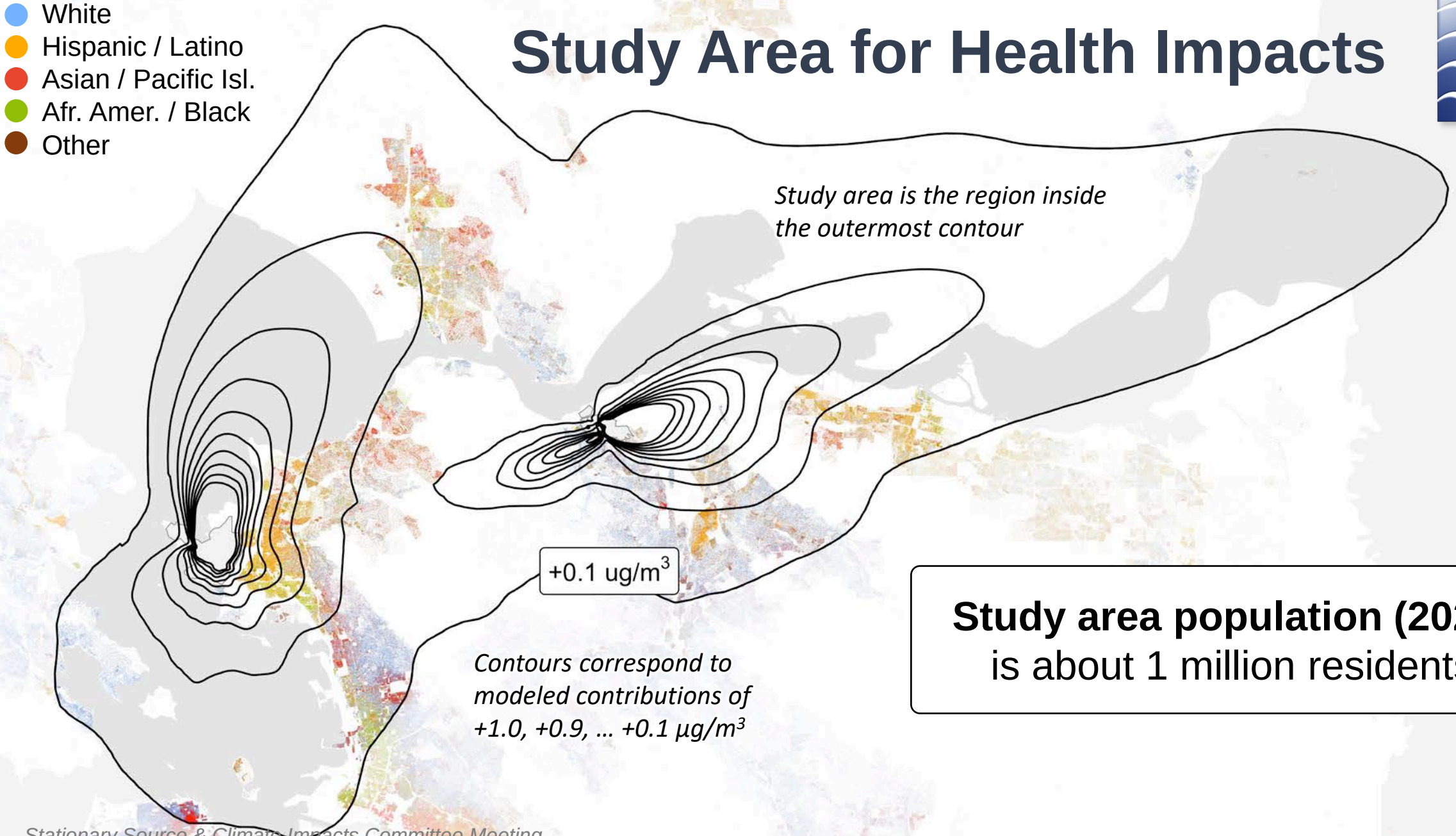
- Localized $PM_{2.5}$ impacts from Chevron Richmond and PBF Martinez
- Equity and health benefits of Control Scenario A and B

Facility	Control Scenario	Modeled Health Benefits[1,2]
Chevron Products Richmond	A (ESP)	$6.8 MM to $15.2 MM/yr
	B (WGS)	$12.2 MM to $27.4 MM/yr
PBF Martinez Refinery	A (ESP)	$10.1 MM to $22.7 MM/yr
	B (WGS)	$14.4 MM to $32.4 MM/yr

ESP = electrostatic precipitator
WGS = wet gas scrubber

[1] Based on conventional US EPA valuations of selected health impacts.
[2] Valuations are in 2015 US dollars, calculated using the US EPA BenMAP system.

Study Area for Health Impacts



Study area population (2020) is about 1 million residents

Public Workshop

- Virtual public workshop held on February 4, 2021
- Approximately 200 attendees
  - Community members and advocates
  - Refinery representatives and workers
  - Board members, executives and staff
- Input from breakout rooms and public comments
- Polled participants on which sentiment(s) they identified with:
  - Support for most stringent limits and WGS controls (51 percent)
  - Concern for potential job losses and economic impacts (41 percent)
  - Unsure or needed more information (24 percent)

Public Comments

- Received total of 69 written public comments
  - Support for most stringent limits and WGS controls
  - Importance of reducing health impacts
  - Concern for potential job losses and economic impacts
  - Concern for environmental impacts of significant WGS water use
  - Concern for hazards from ESP operation
  - Support for balance between air quality benefits and economic impacts
  - Compliance costs, economic impacts, and health benefit estimates are too high/low
  - Implementation timeline is too long/short
  - Testing/monitoring concerns

Key Comments and Issues

- Broad community support for the most stringent limits and wet gas scrubber controls
- Clear health and environmental justice benefits from maximum level of pollution reduction
- Wet gas scrubbers take years to design and install, meanwhile the pollution continues
- Flexibility on the timing to install wet gas scrubbers could mitigate economic impact

Possible New Approach

"Stair-Step" Approach for Early Reductions

- Goal: Require most stringent standard (Scenario B – WGS), but require or incentivize early reductions to reduce health impacts
- Approach: "Stair-step" or phase-in
  - Required to achieve an interim emissions standard - close to Scenario A (ESP), as soon as possible
  - Provide additional time to meet the WGS-equivalent control level
  - Ensure greater emission reductions over time than would be possible with WGS alone
- Benefits:
  - Require health protective emissions reductions sooner
  - Allows refiners flexibility in planning for installation of wet gas scrubbers
- Challenges:
  - May delay implementation of WGS-equivalent control level
  - Total cost may exceed that of WGS

Potential Paths Forward

- Path 1: Prepare Scenario A (ESP) **and** Scenario B (WGS) for Board consideration in June
- Path 2: Prepare Scenario A (ESP) **or** Scenario B (WGS) for Board consideration in June
- Path 3: Develop rule language for Stair-Step approach, workshop that new language, prepare for Board consideration in September

Next Steps for Paths 1 or 2

- March 15 – 31: Make appropriate changes based on workshop comments, draft proposed rule and supporting materials, publish for 30-day public comment period beginning March 31
- April 30 – May 21: Develop formal response to comments, finalize Board hearing package, publish Board hearing package on May 21
- Consideration for adoption by Board of Directors at Public Hearing on June 2

Next Steps for Path 3 (Stair-Step Approach)

- March/April: Flesh out details of alternative approach in consultation with stakeholders, publish new rule language and supporting materials beginning 30-day informal comment period
- Mid-May: Hold public workshop on alternative, stair-step approach
- Late June: Make appropriate changes based on workshop comments, draft proposed rule and supporting materials, publish for 30-day, formal public comment period
- August: Develop formal response to comments, finalize Board hearing package, publish Board hearing package
- Consideration for adoption by Board of Directors at Public Hearing in September 2021

Feedback Requested/Prompt

- Questions and comments?
- Committee discussion and direction on next steps:
  - Path 1: Prepare Option A (ESP) **and** Option B (WGS) for Board consideration in June
  - Path 2: Prepare Option A (ESP) **or** Option B (WGS) for Board consideration in June
  - Path 3: Develop rule language for Stair-Step approach, workshop that new language, prepare for Board consideration in September

AGENDA: 5

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Source Test 101

Stationary Source and Climate Impacts Committee Meeting
March 15, 2021

Elaine Ko

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Outcome

- Learn about the Air District's Source Test team.

Requested Action

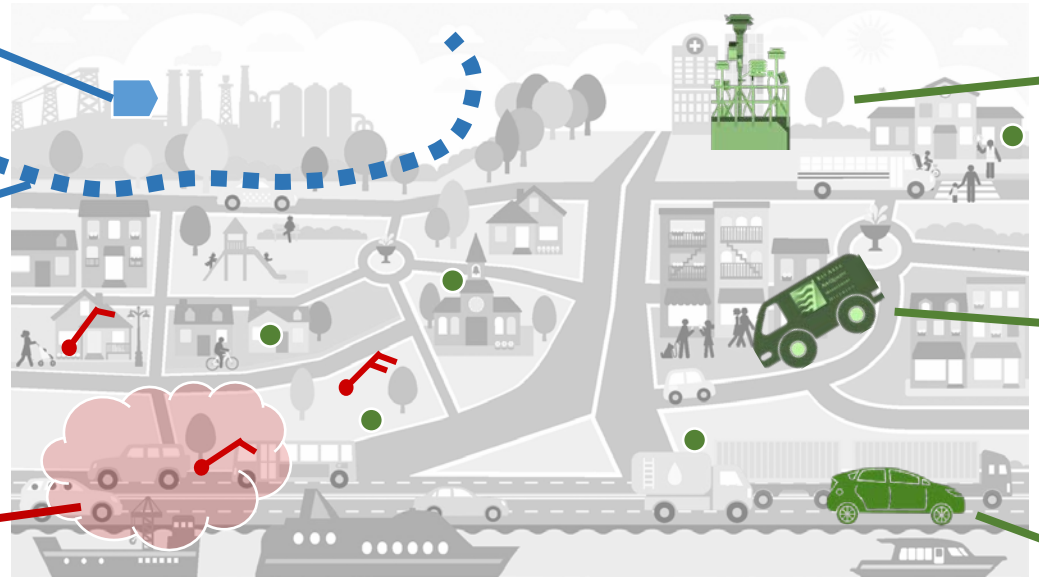
- None – informational presentation.

Meteorology and Measurement

Facilities

Source Testing
Emissions from facilities

Fence line Monitoring
Facility emissions that may impact communities



Meteorology
Air quality forecasting for Spare the Air, Wildfire smoke updates and advisories

Communities

Regional Network
High accuracy equipment at 30+ stations in the Bay Area

Portable/Mobile Monitoring
High accuracy equipment on a moving vehicle or temporarily sited

Hyperlocal Monitoring
Medium accuracy equipment to measure block-by-block air pollution

Sensor Networks
Technical support for low cost, real-time sensors for higher density data, community-led science

Source Test 101: Presentation Outline

- Types of facilities and # of tests
- Testing methods and data review
- How is data used
- Key projects
- Research new technologies

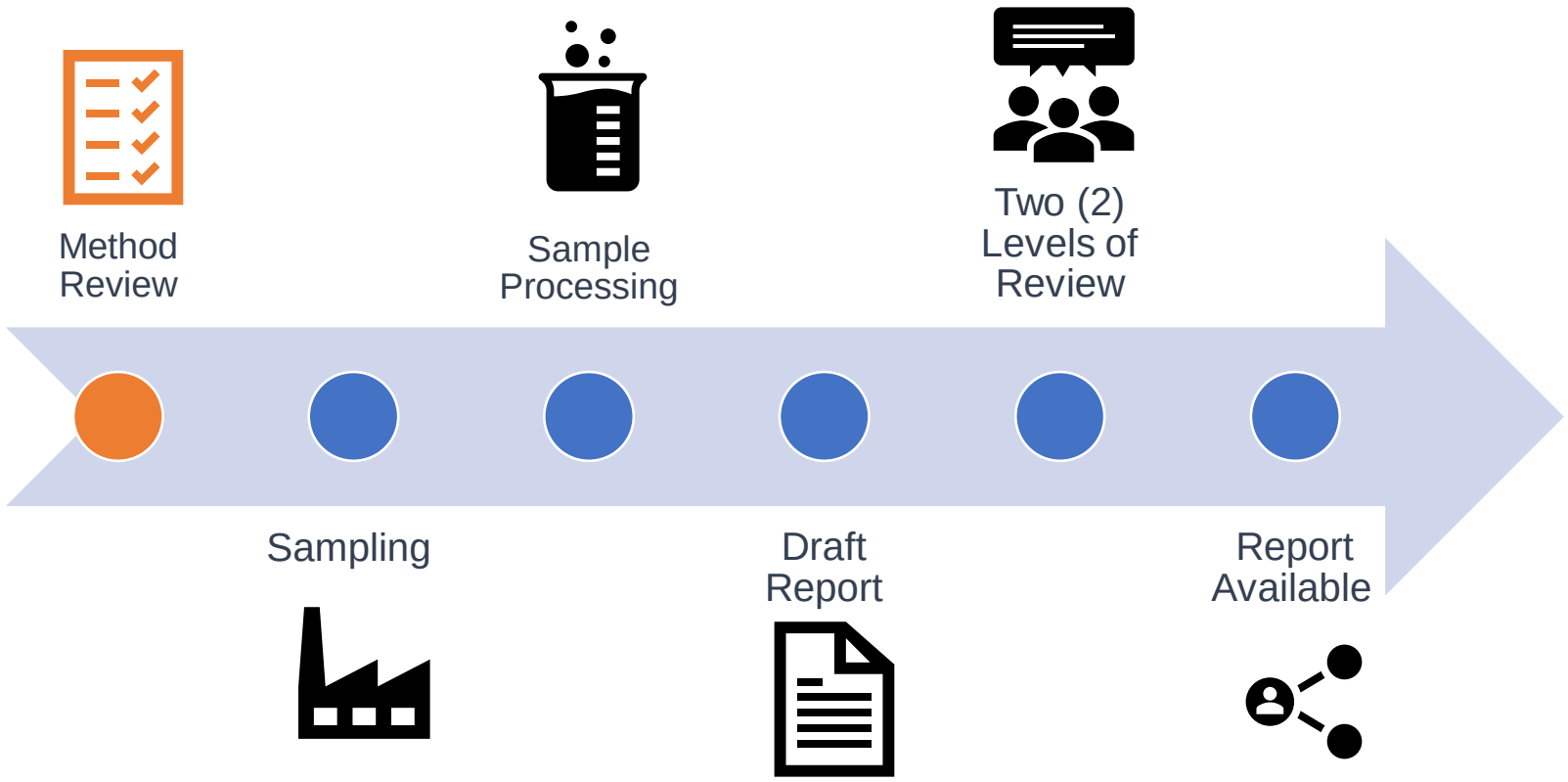
Source Categories and Number of Tests* (2019)

	Conducted by Staff	Reviewed by Staff**
Refineries	32	190
Power plants	3	16
Cement/asphalt/concrete production	2	19
Landfills/compost facilities	8	33
Wastewater treatment plants	20	24
Bulk terminals	34	10
Cargo tanks	233	0
Gasoline dispensing facilities	69	2,730
Other	11	127

* Each test in the table includes multiple compounds

** Ensure third party protocol, testing, quality control, and quality assurance meets standards

Source Testing Process



Example Method Review: Particulate Matter (PM) Methods

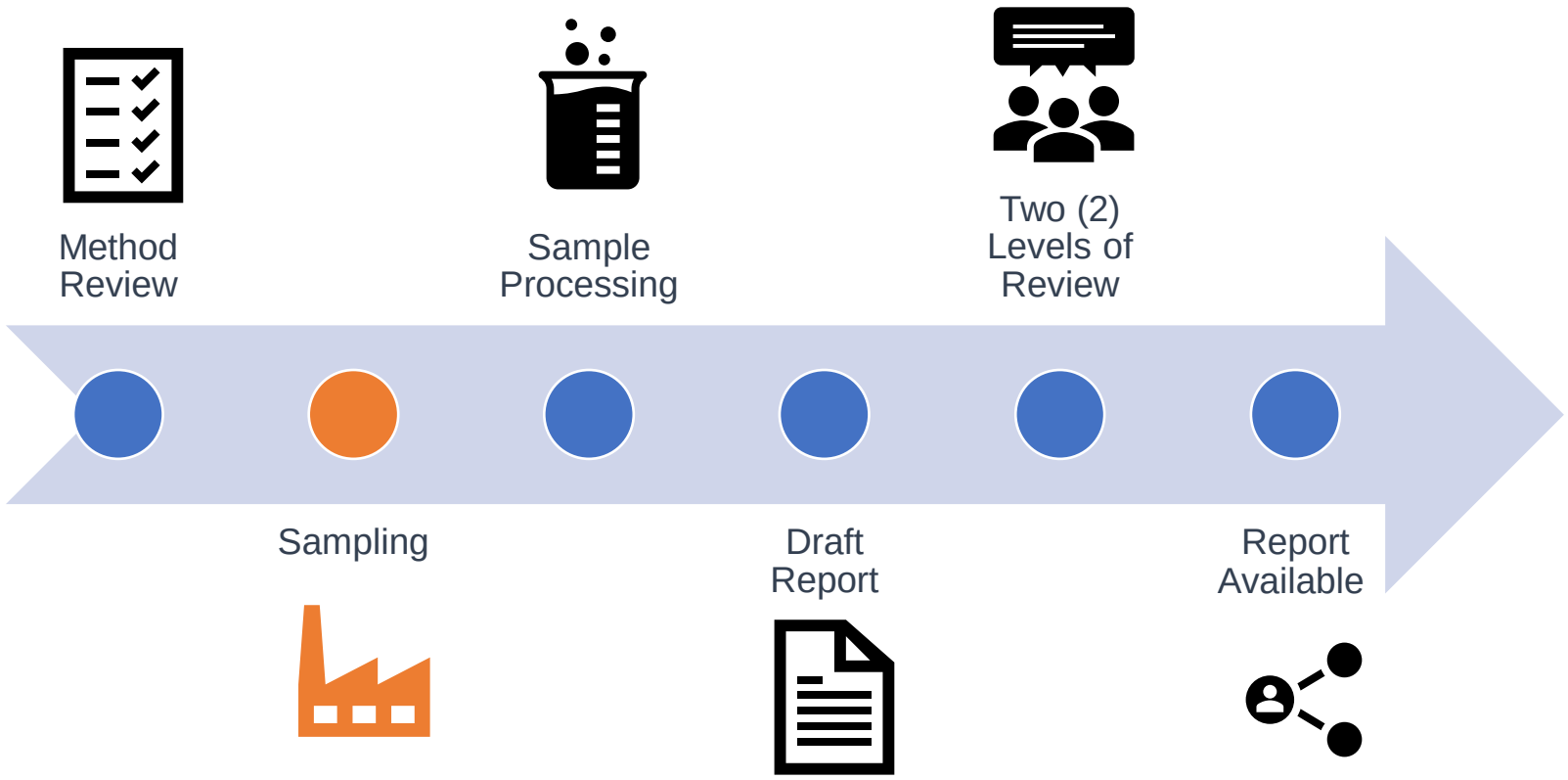
EPA Method 5	EPA Method 5B	EPA Method 201A	EPA Method 202	OTM-037
Filterable PM …….. No particle sizing	Nonsulfuric acid filterable PM …… No particle sizing	Filterable PM …… Separates PM10 and PM 2.5 fractions …… Not for use in cyclonic flow conditions	Condensable PM …….. Used in conjunction with filterable methods	Filterable and condensable PM …….. Dilutes and cools sample prior to filter …… Uses ambient technology

Approved by EPA

Not approved by EPA

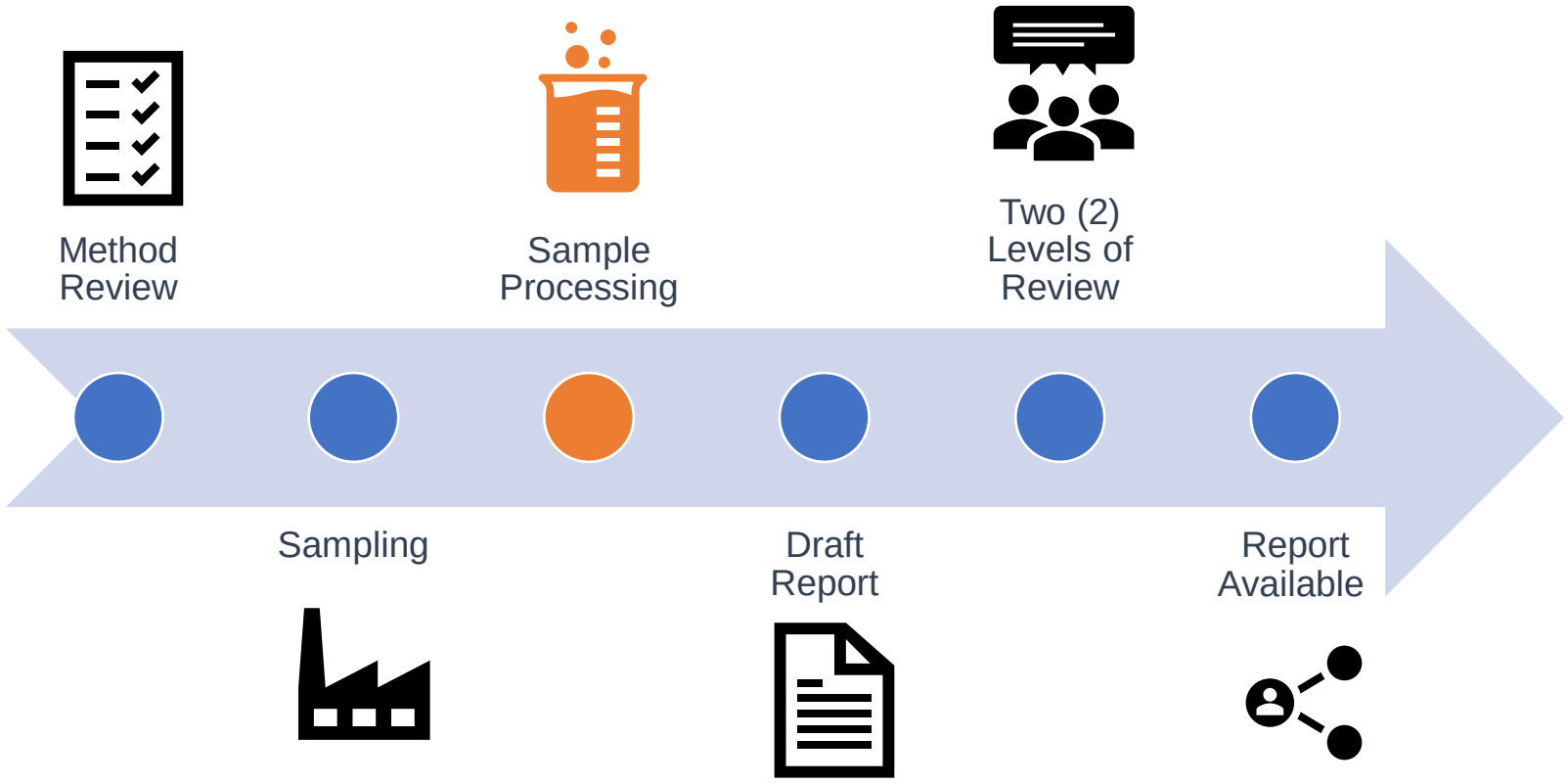
Methods used for testing fluidized catalytic cracking units (FCCUs) at PBF and Chevron (Regulation 6 Rule 5)

Source Testing Process



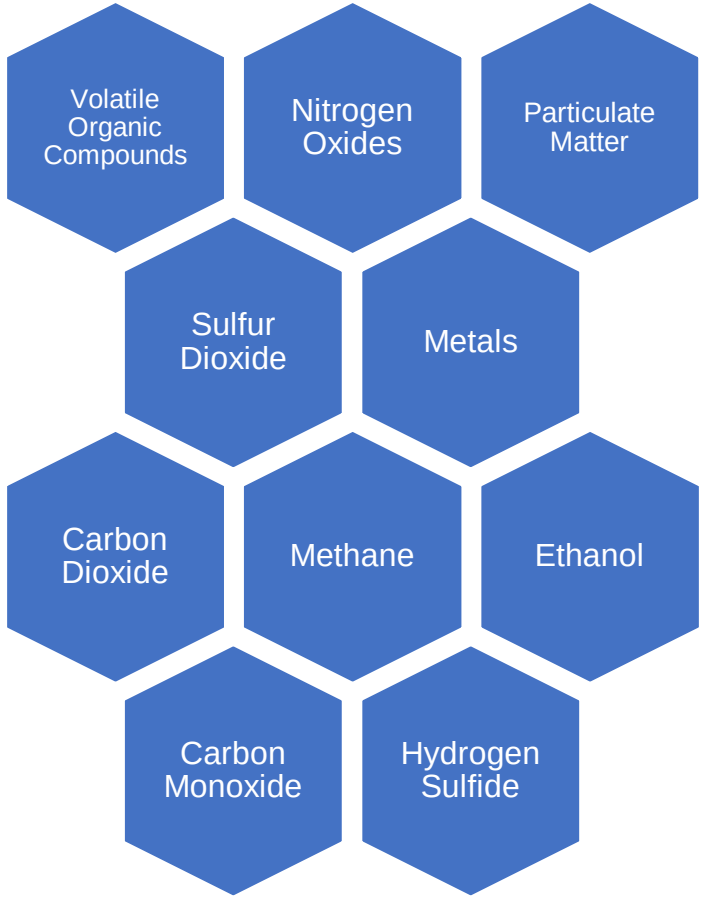
Sampling

Source Testing Process

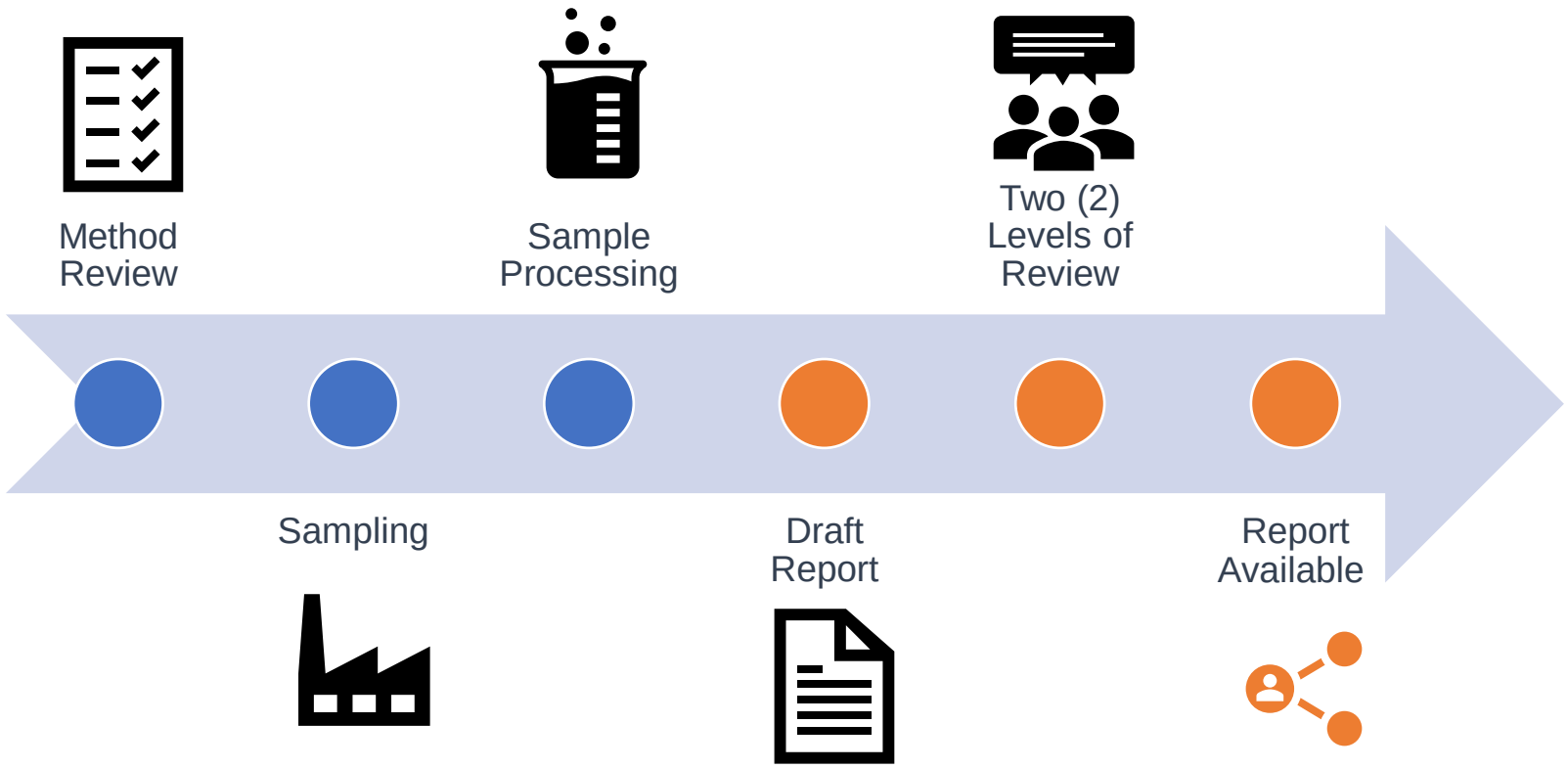


Sample Processing and Analysis

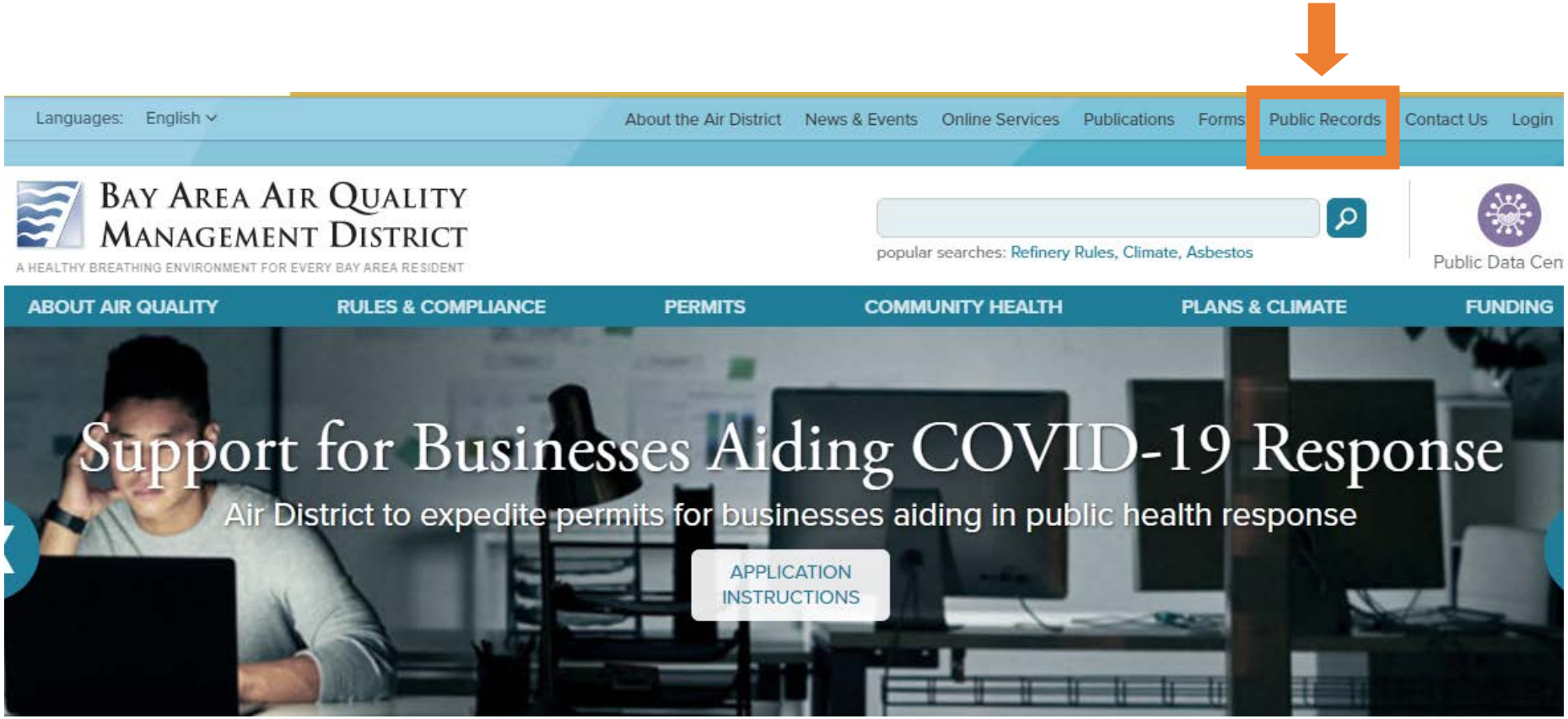
Samples are broken down into their components and quantified.



Source Testing Process



Public Records Requests for Source Test Reports



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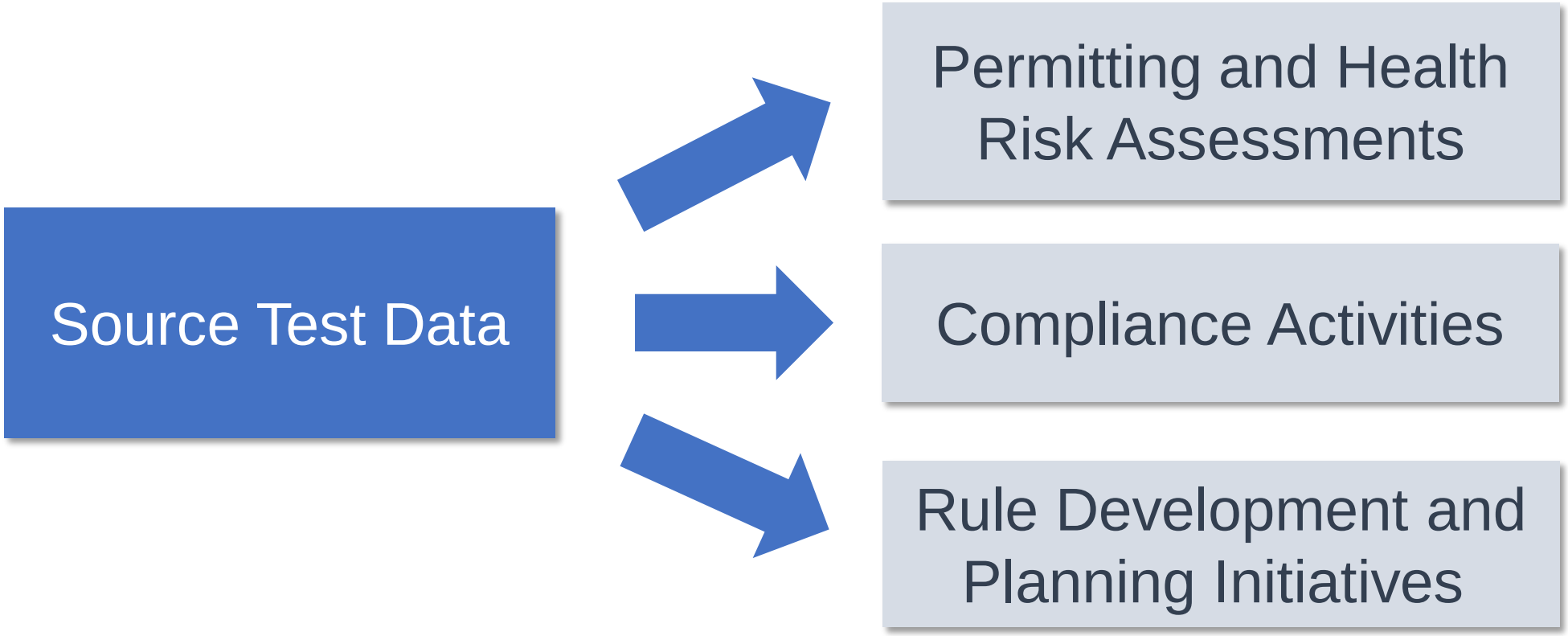
How is Source Test Data Used



Key Projects

Oversight of Fenceline Monitoring at refineries

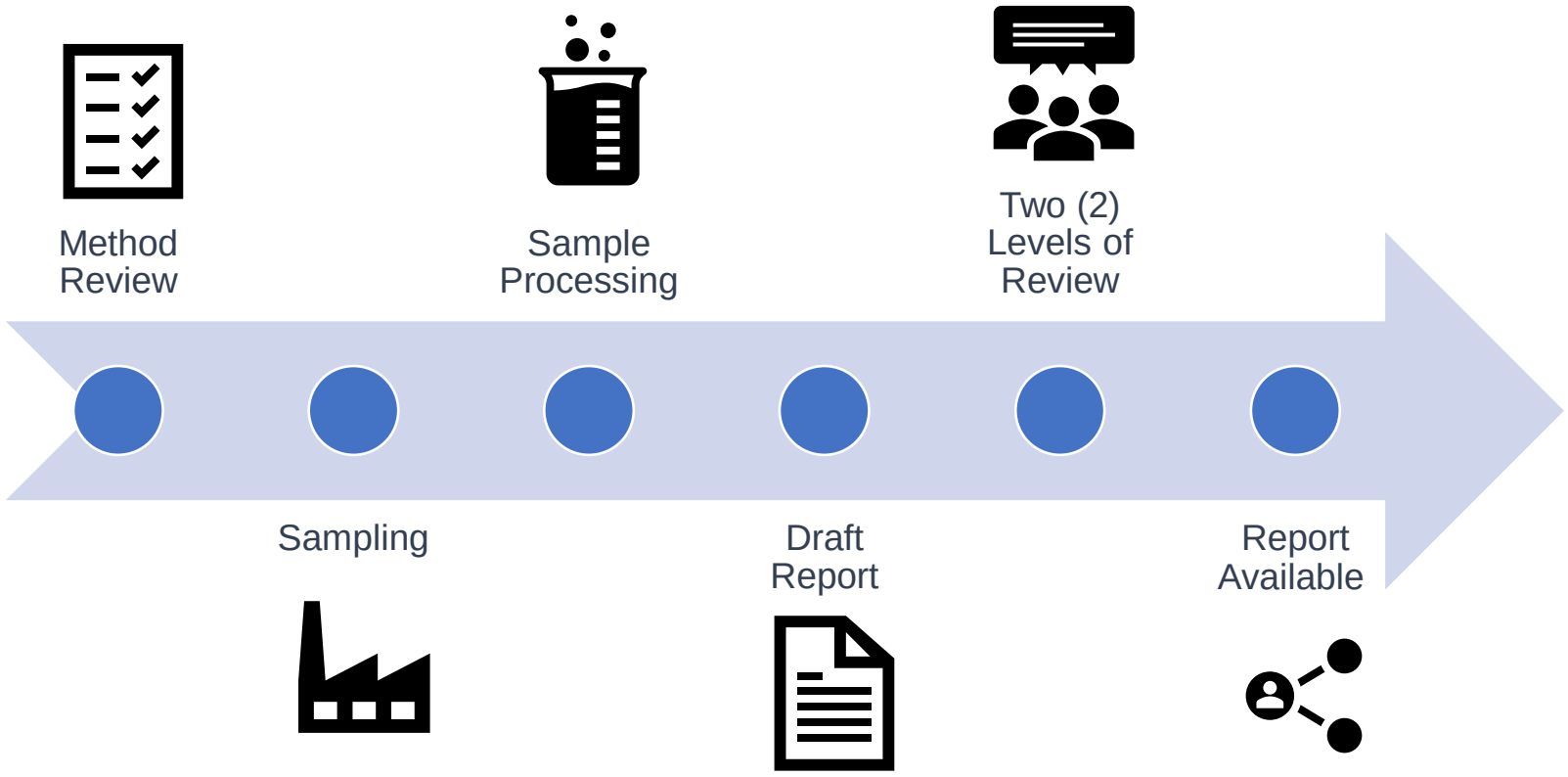
……

Investigate odors that can be attributed to 3 South Bay waste facilities

Research New Technologies

Goals	Technologies Evaluated
Monitor ammonia continuously, in a way that is comparable to existing point-in-time methods	Ammonia Continuous Emissions Monitors (CEMS)
Sampling equipment that can be used in area sources like landfills and compost piles	Flux chamber

Questions?


Method Review
Sample Processing
Two (2) Levels of Review
Sampling
Draft Report
Report Available