



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**



2018 Storm Water Monitoring Year and Results for the Individual Permit

December 19, 2018

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ENVIRONMENTAL MANAGEMENT
SAFETY ♦ PERFORMANCE ♦ CLEANUP ♦ CLOSURE



Summer Precipitation Network

Legend

 Met Towers

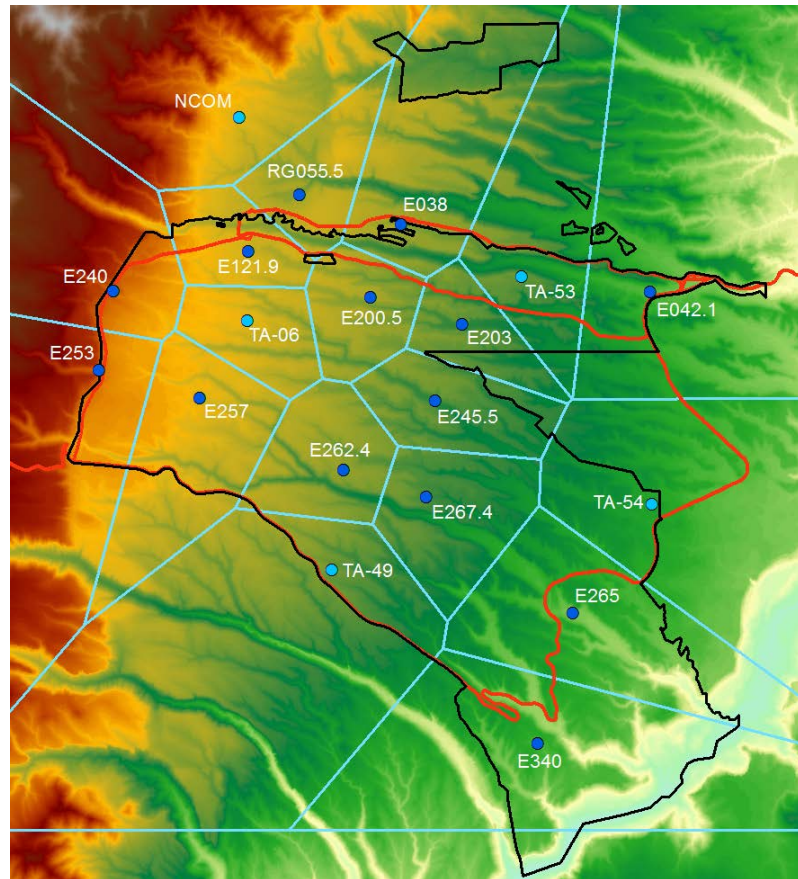
 Extended
Network

 LANL
Boundary

 Major Roads

 Summer
Theissen
Polygons

 Elevation

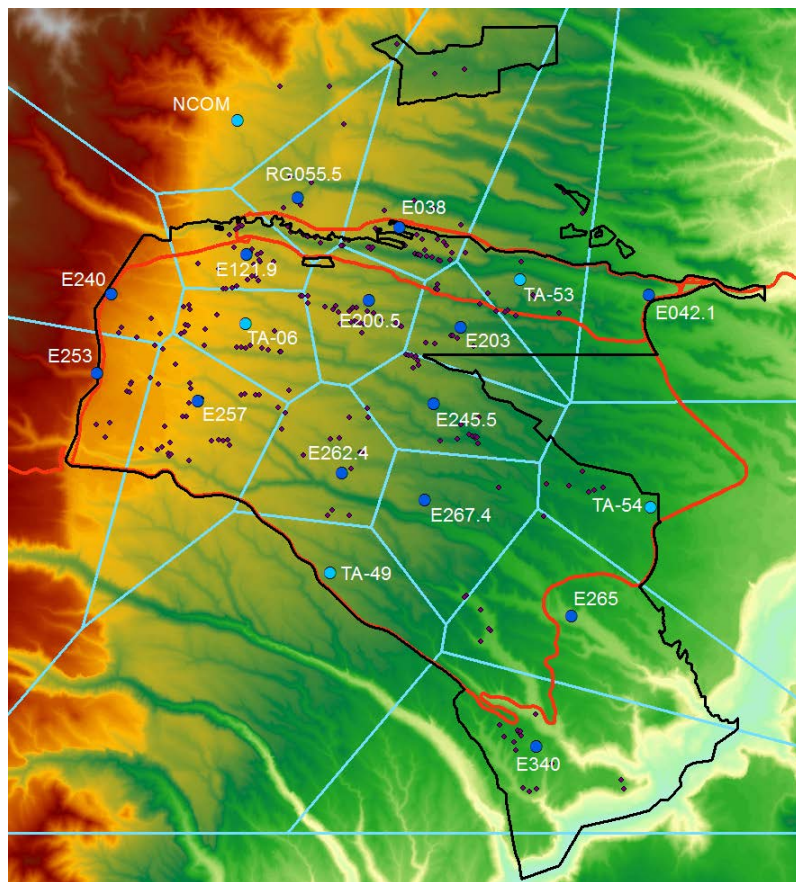




Summer Precipitation Network

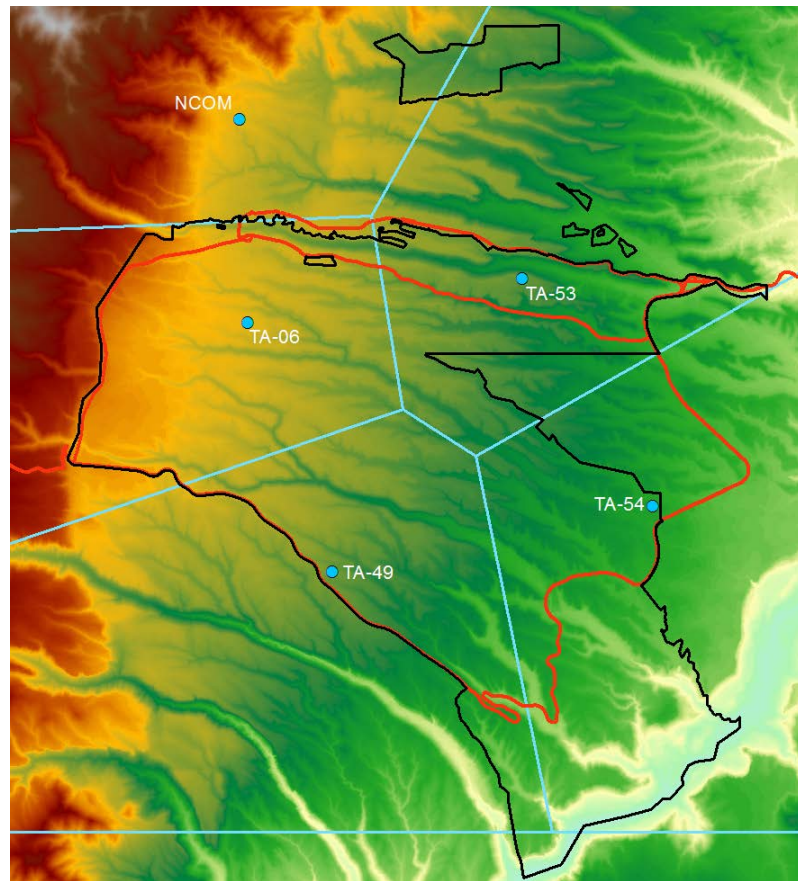
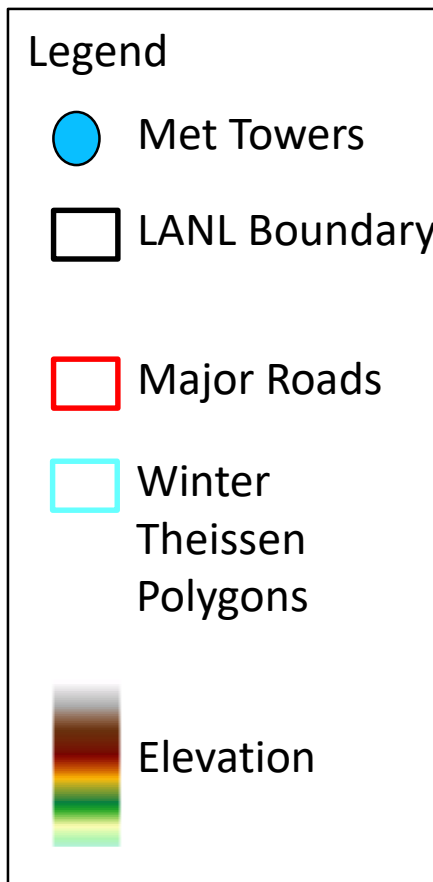
Legend

-  Met Towers
-  Extended Network
-  LANL Boundary
-  Major Roads
-  Summer Theissen Polygons
-  Elevation
-  SMA Samplers



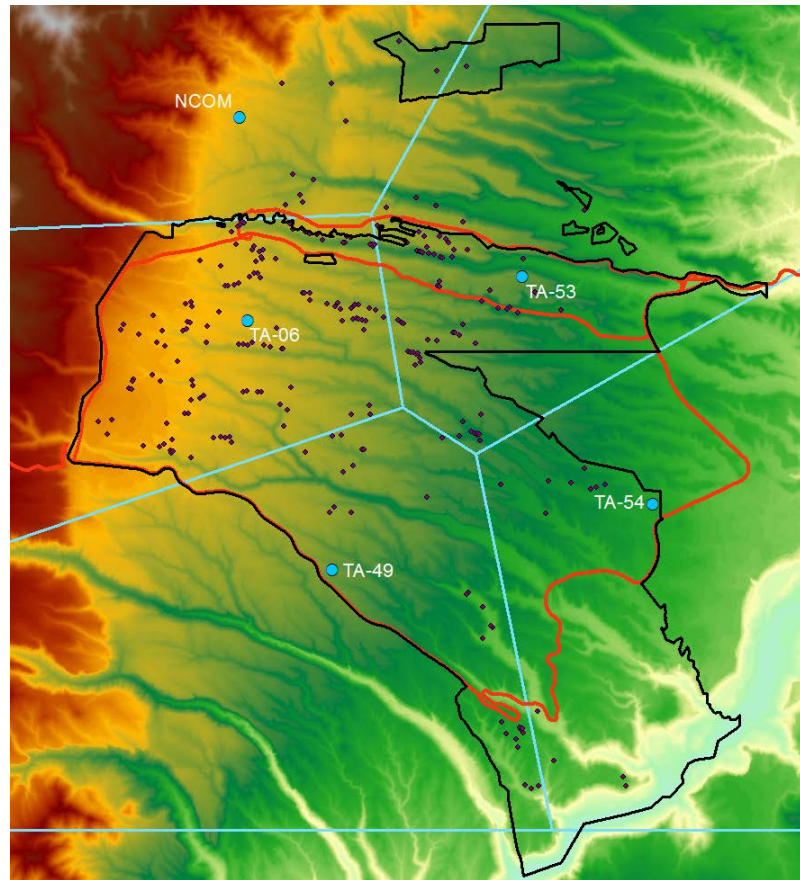


Winter Precipitation Network





Winter Precipitation Network





Remote Telemetry Units (RTUs)





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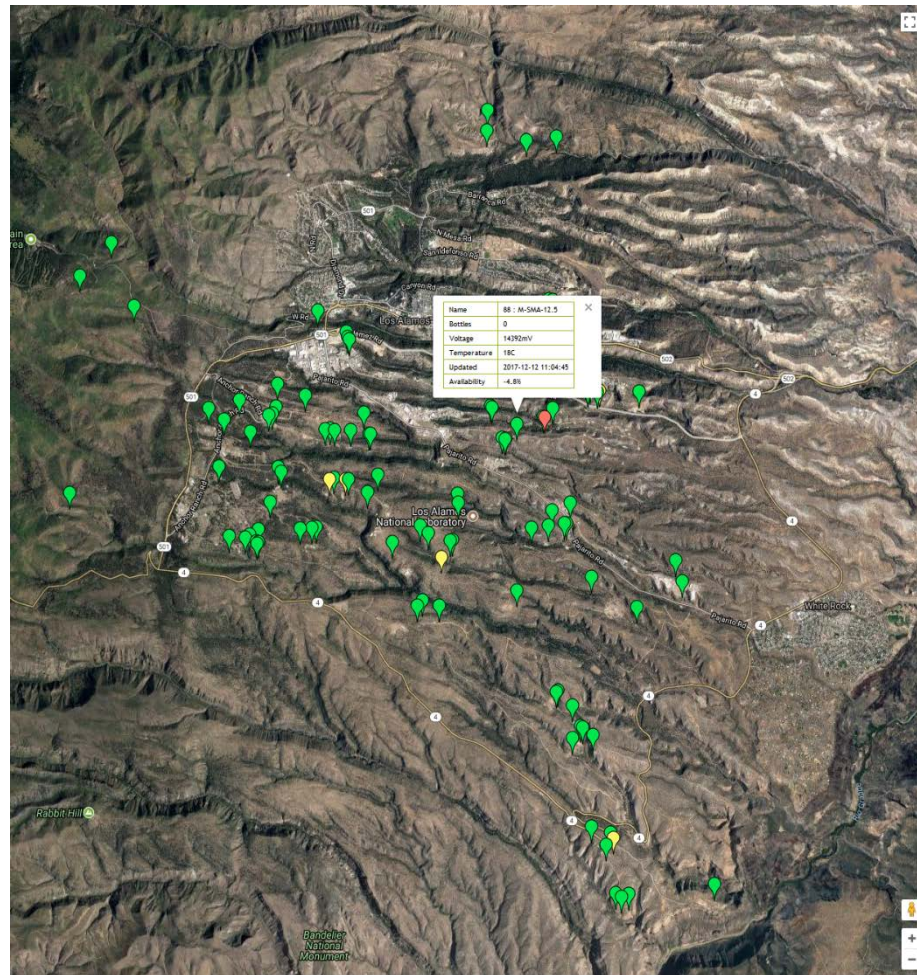


Current

- 125 locations with monitoring alarms
- Mesh self-healing network

Future

- 150 locations in 2019
- Rely on monitoring alarms for sample collection

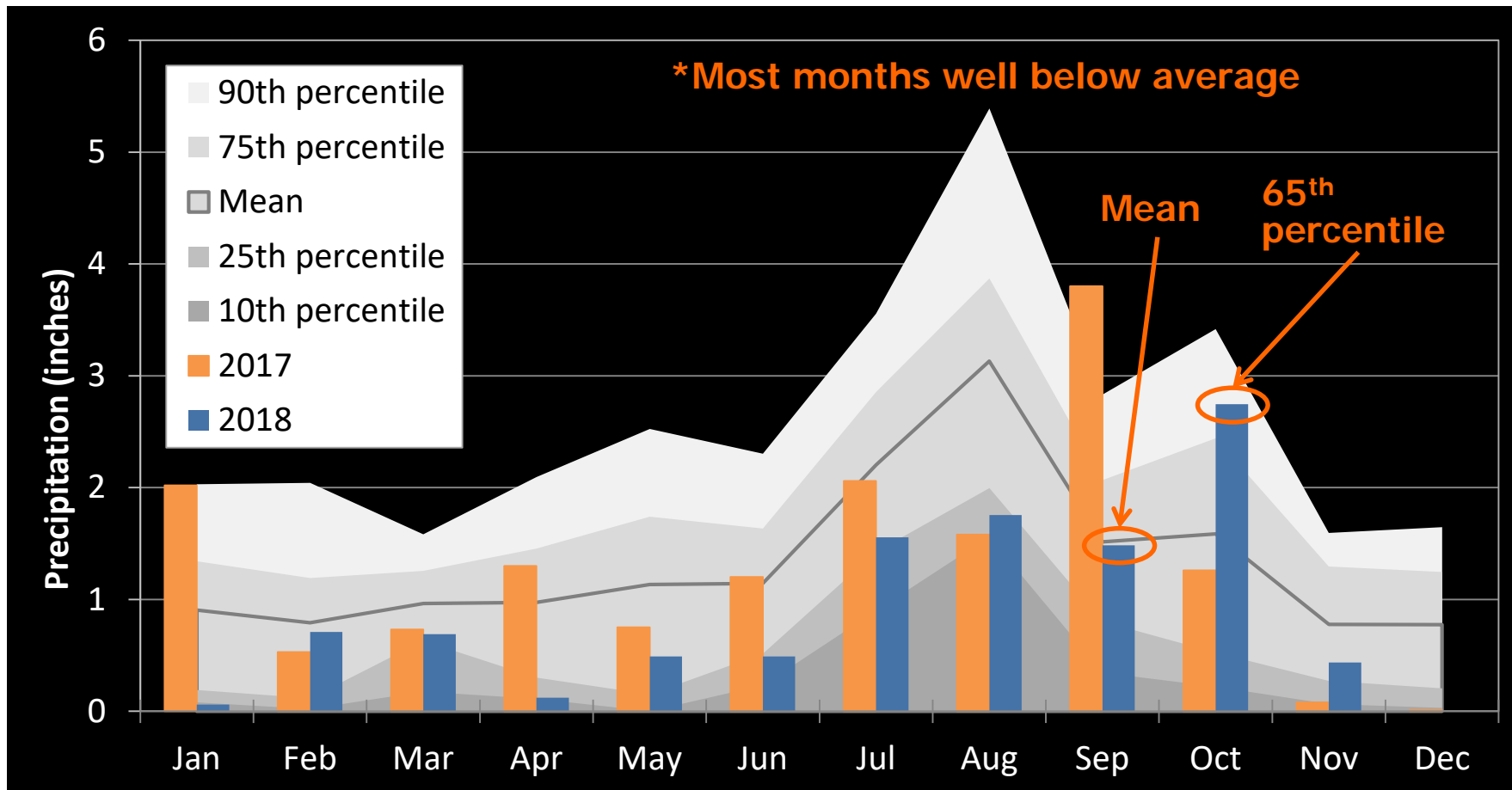


		State of Health	Cumulative Events
ID	Name	Bottles	Location
4		0	Latitude 0 Longitude 0
6		0	Latitude 0 Longitude 0
12		0	Latitude 0 Longitude 0
30		0	Latitude 0 Longitude 0
31		0	Latitude 0 Longitude 0
32	CDV-SMA-3	0	Latitude 35.847766 Longitude -106.320665
33	PJ-SMA-14.4	0	Latitude 35.83970826 Longitude -106.265013
34	CDV-SMA-4	0	Latitude 35.847971 Longitude -106.319726
35		0	Latitude 0 Longitude 0
36	LA-SMA-6.31	0	Latitude 35.847771 Longitude -106.277958
37		0	Latitude 0 Longitude 0
38		0	Latitude 0 Longitude 0
39		0	Latitude 0 Longitude 0
40		0	Latitude 0 Longitude 0
41		0	Latitude 0 Longitude 0
42	PJ-SMA-14	0	Latitude 35.843467 Longitude -106.264164
43		0	Latitude 0 Longitude 0
44		0	Latitude 0 Longitude 0



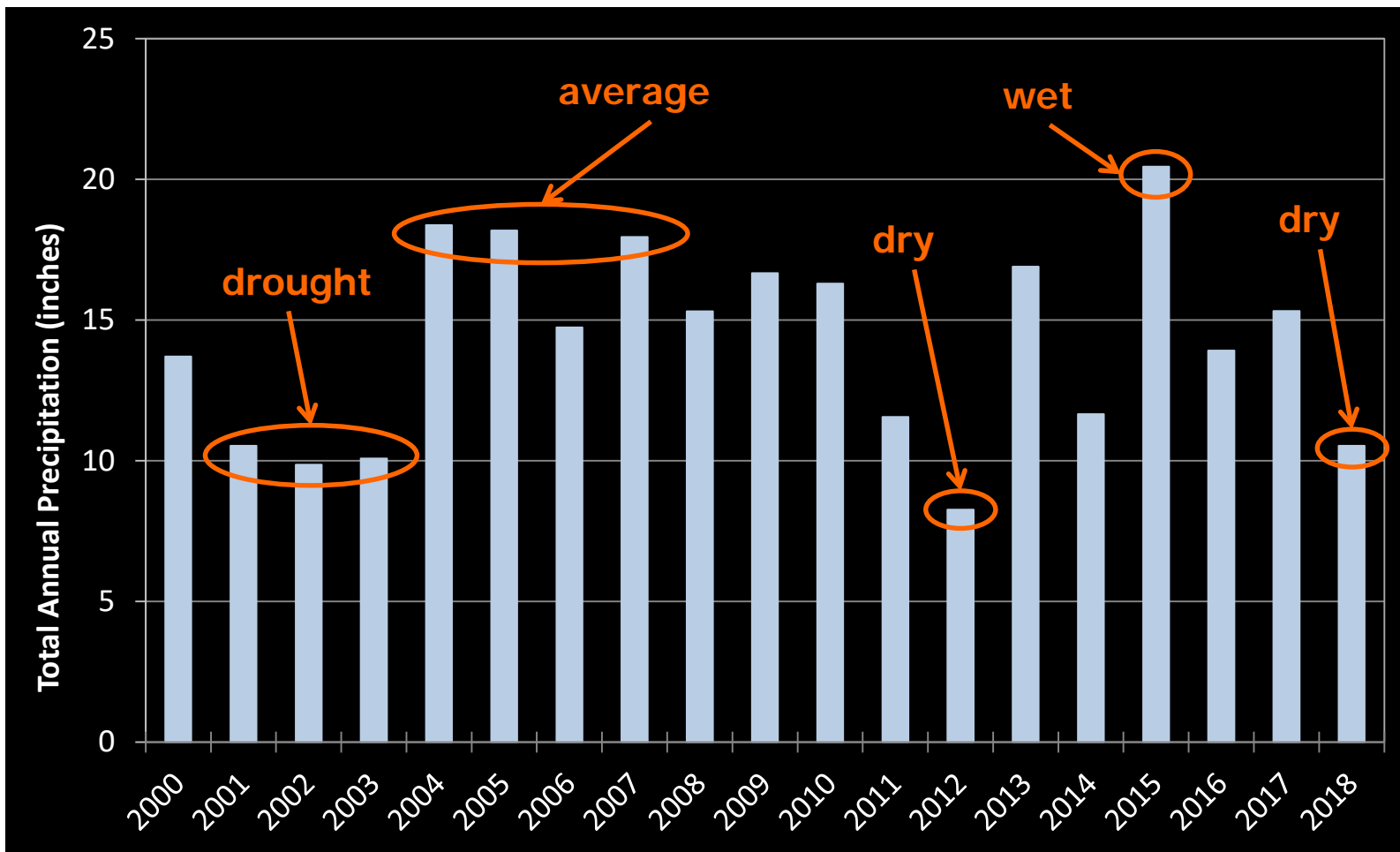


2018 Monitoring Year



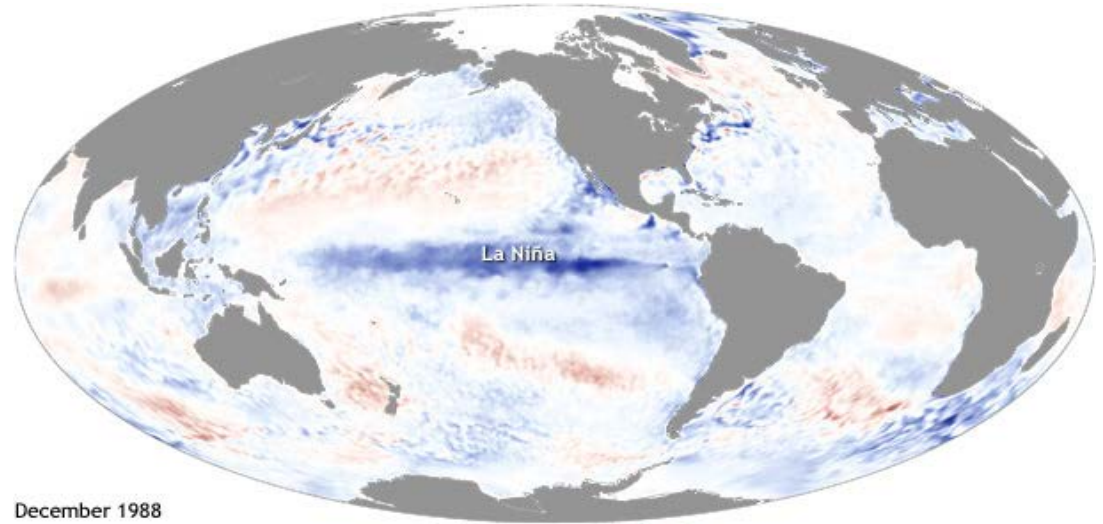


2018 Compared to Past Years

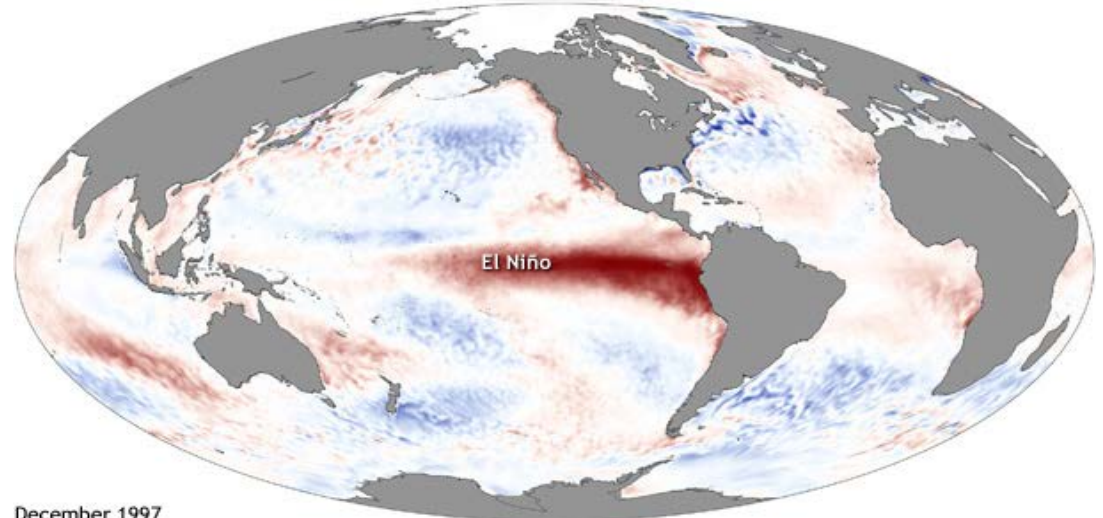




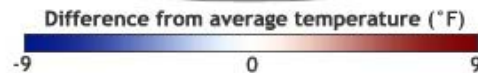
El Niño Southern Oscillation (ENSO)



December 1988

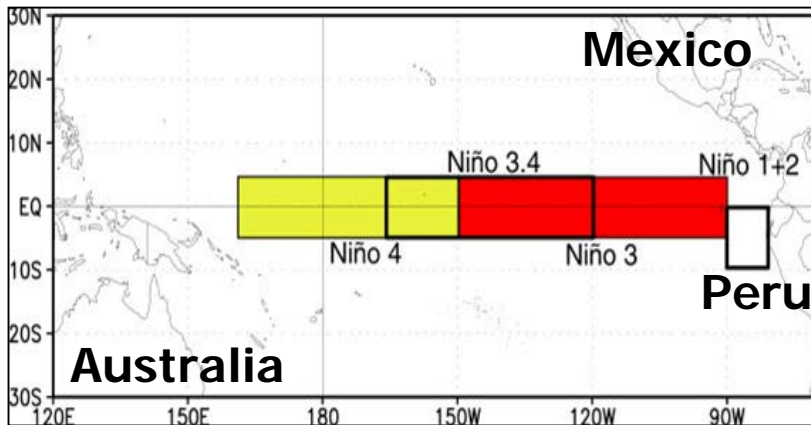


December 1997



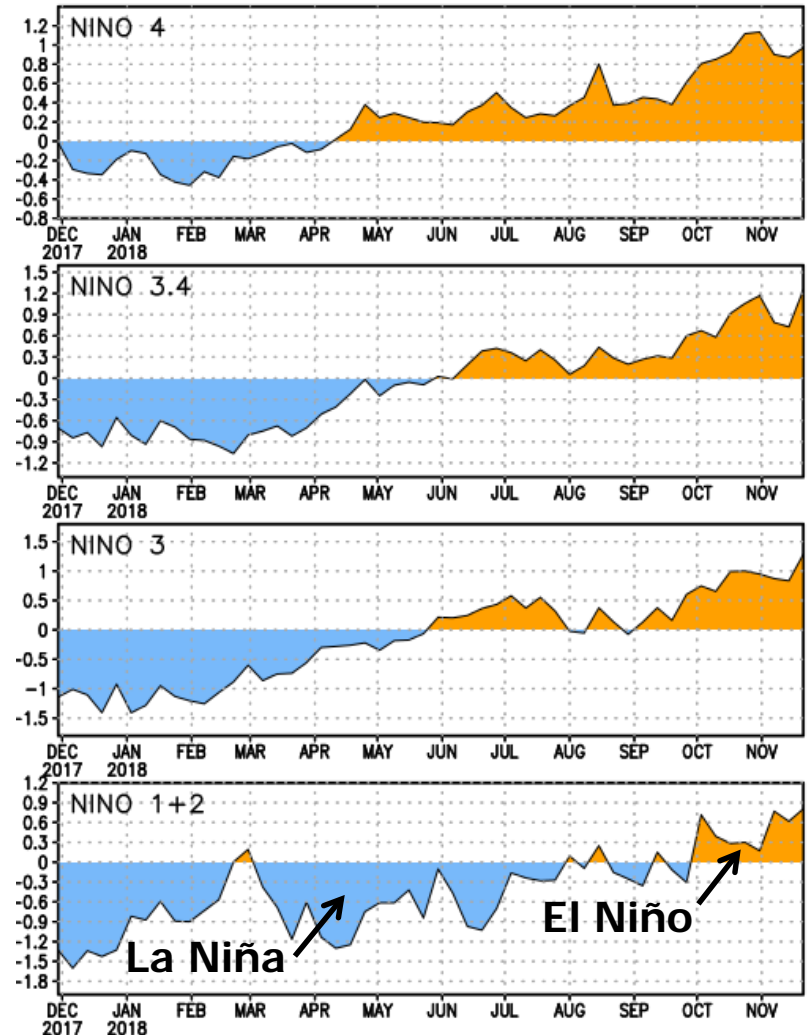


2018 ENSO Conditions



* Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center

SST Anomalies

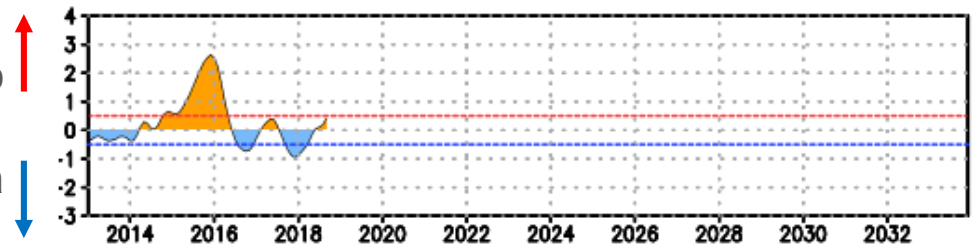
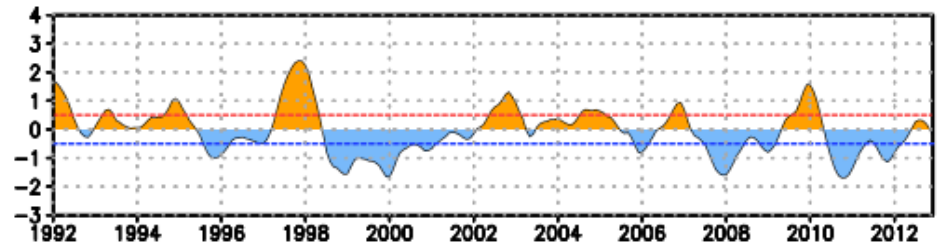
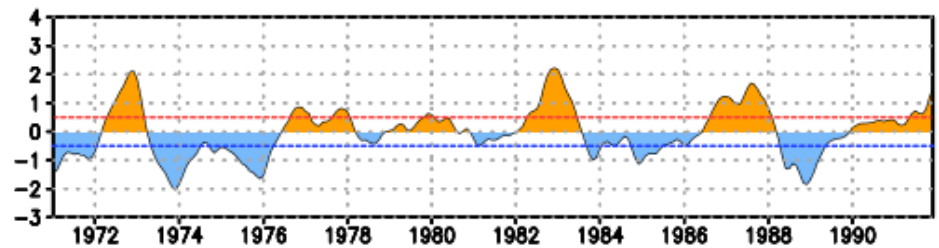
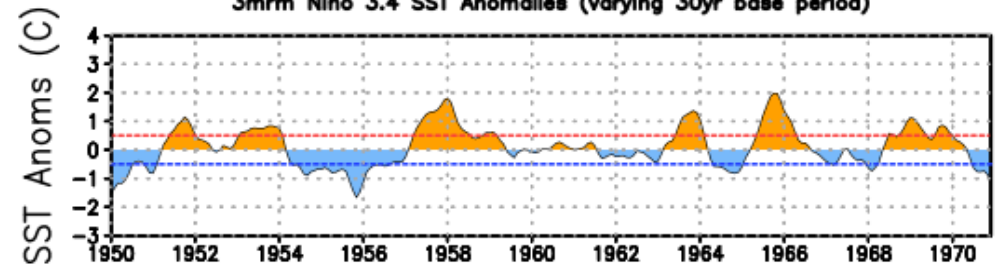




Historic ENSO Conditions

*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center

Oceanic Nino Index (ERSST.v5 ONI)
3mrm Nino 3.4 SST Anomalies (varying 30yr base period)



El Niño ↑
Neutral
La Niña ↓



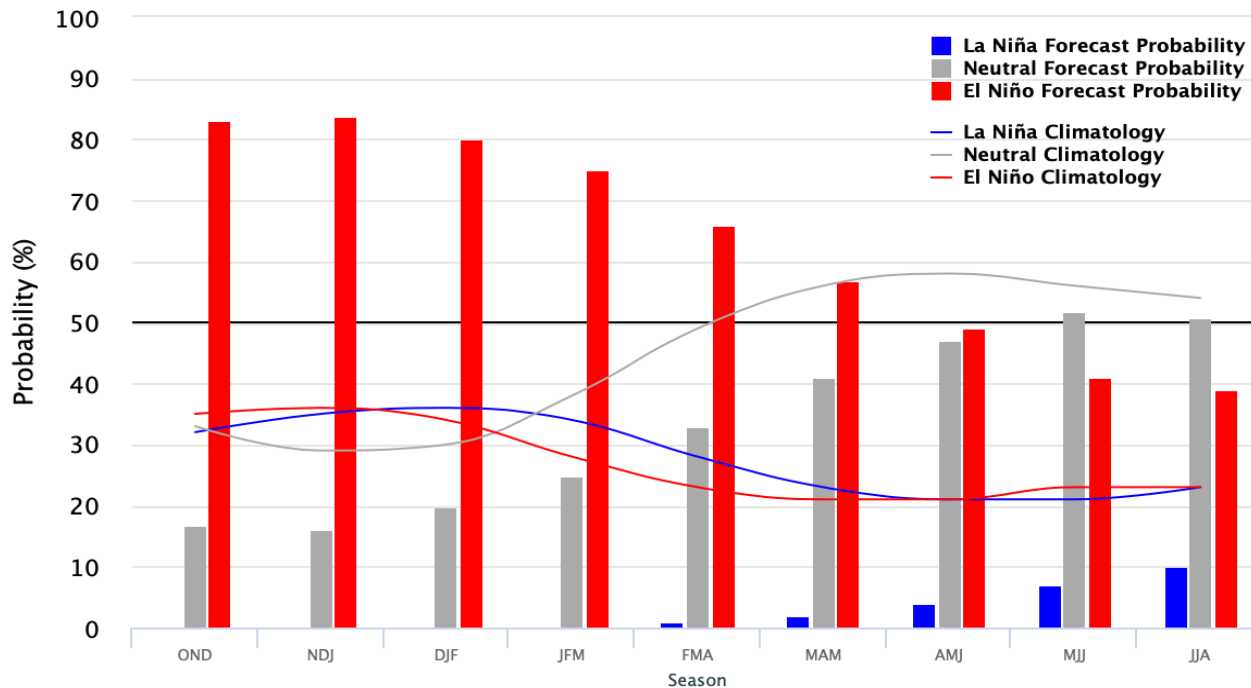


Current ENSO Conditions

El Niño is expected to form and continue through the Northern Hemisphere winter 2018-19 (~80% chance) and into spring (55-60% chance).

Early–November 2018 CPC/IRI Official Probabilistic ENSO Forecasts

ENSO state based on NINO3.4 SST Anomaly
Neutral ENSO: -0.5 °C to 0.5 °C

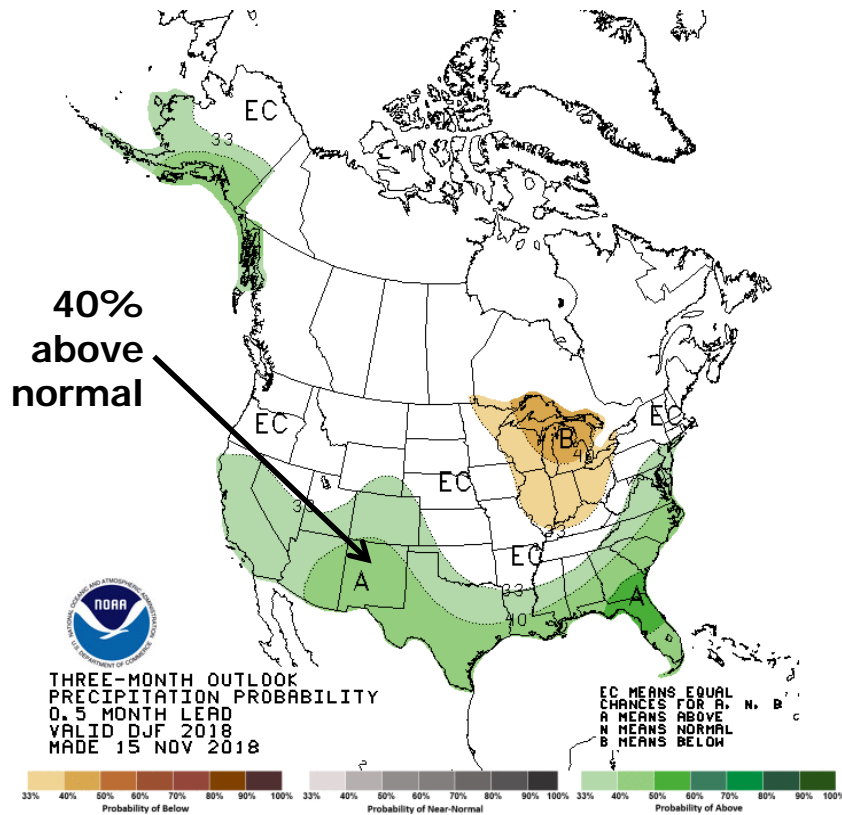


*Anomalies are computed with respect to the 1981-2010 averages by NOAA Climate Prediction Center

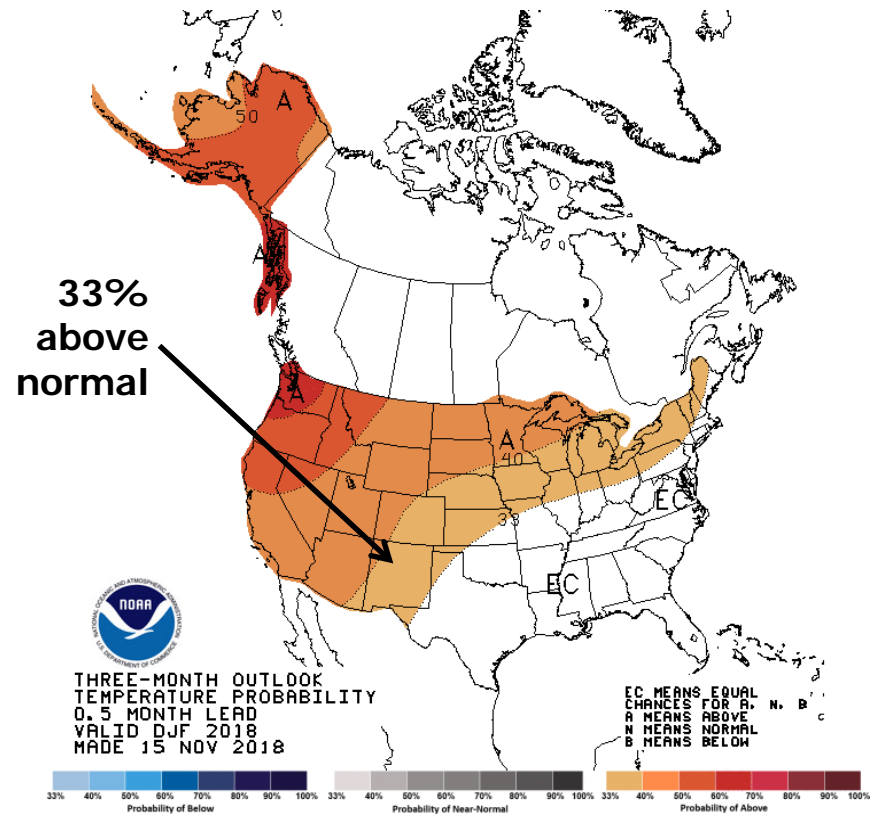


U.S. Seasonal Outlooks

Precipitation

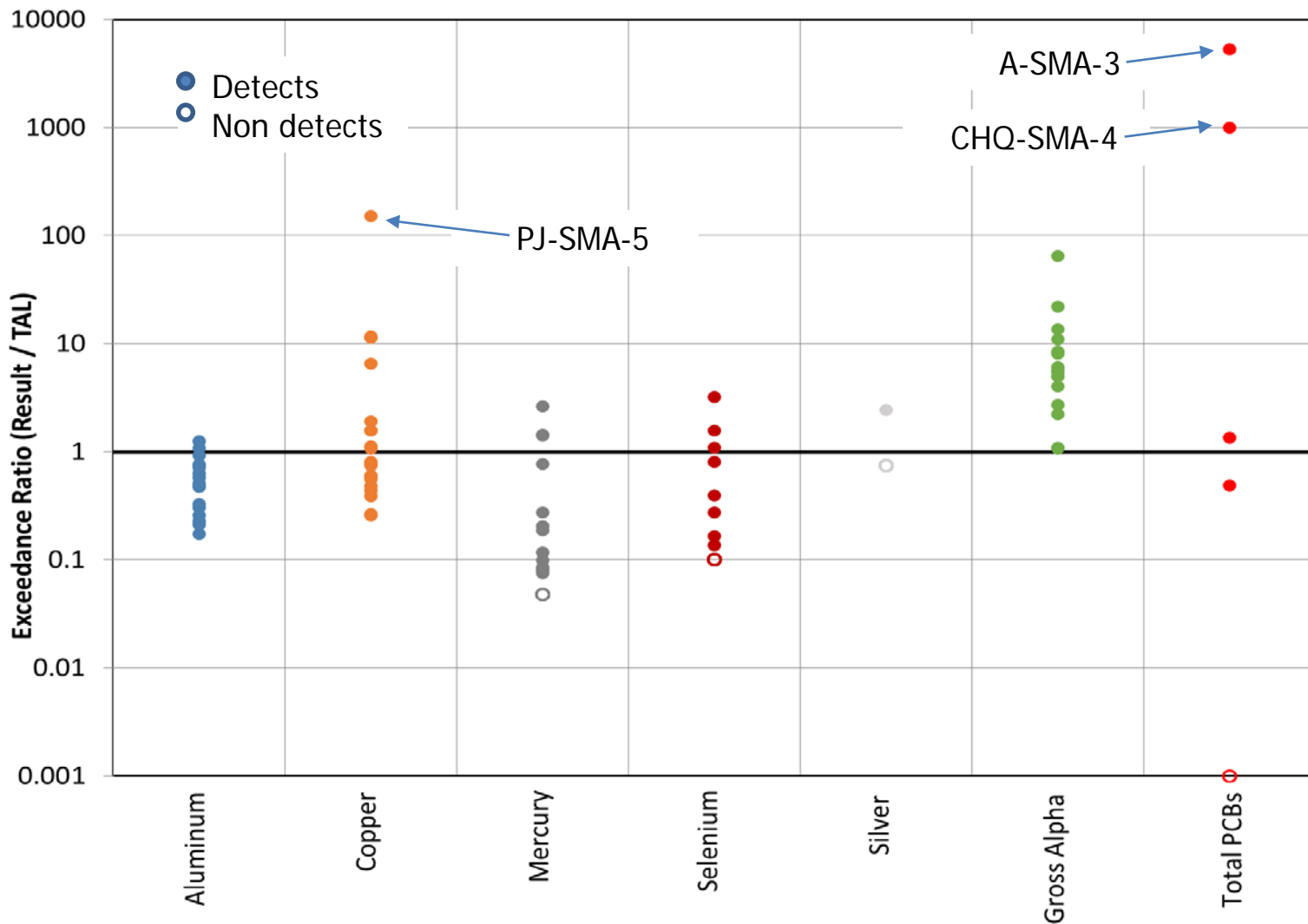


Temperature





Individual Permit Results from 2018





IP Results from 2018

2018 IP Sampling Locations	TAL Exceedances							
	Aluminum	Copper	Mercury	Selenium	Silver	Gross alpha	Total PCB	None
2M-SMA-3								X
3M-SMA-4		X						
ACID-SMA-2	X					X	X	
ACID-SMA-2.1	X	X				X	X	
CDV-SMA-2.42	X	X				X		
LA-SMA-1						X	X	
LA-SMA-2.1						X	X	
M-SMA-1.2		X						
PT-SMA-1		X				X		
S-SMA-6	X	X	X			X	X	
STRM-SMA-4.2	X	X			X			
T-SMA-7						X		
W-SMA-1.5								X
W-SMA-9.5				X		X		





Individual Permit Results from 2018

Blue = not site-related
Pink = Site-related

2018 IP Sampling Locations	TAL Exceedances							
	Aluminum	Copper	Mercury	Selenium	Silver	Gross alpha	Total PCB	None
2M-SMA-3								X
3M-SMA-4		X						
ACID-SMA-2	X					X	X	
ACID-SMA-2.1	X	X				X	X	
CDV-SMA-2.42	X	X				X		
LA-SMA-1						X	X	
LA-SMA-2.1						X	X	
M-SMA-1.2		X						
PT-SMA-1		X				X		
S-SMA-6	X	X	X			X	X	
STRM-SMA-4.2	X	X			X			
T-SMA-7						X		
W-SMA-1.5								X
W-SMA-9.5				X		X		





Summary of Individual Permit Results from 2018

- Aluminum – geology
- Gross alpha – geology and site-related
- Copper – urban areas and site-related
- Mercury, selenium, silver – site-related
- Total PCBs – associated with humans (in atmosphere, precipitation, and storm water runoff) and site-related





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Questions?



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Produced by Los Alamos Legacy Cleanup Contractor, N3B Los Alamos
on behalf of DOE's Environmental Management Los Alamos Field Office

