

Reducing Effluent SNC

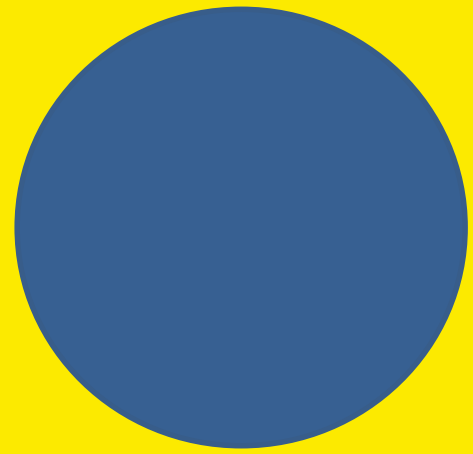
Workforce Development Project

Hello
my name is

Denny Dart

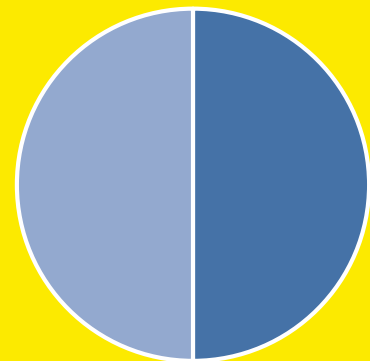
Chief, Water Compliance Section
USEPA Region 1





Question 1: What sector has the most effluent SNC violations?

Region 1: half of effluent SNC due to POTWs



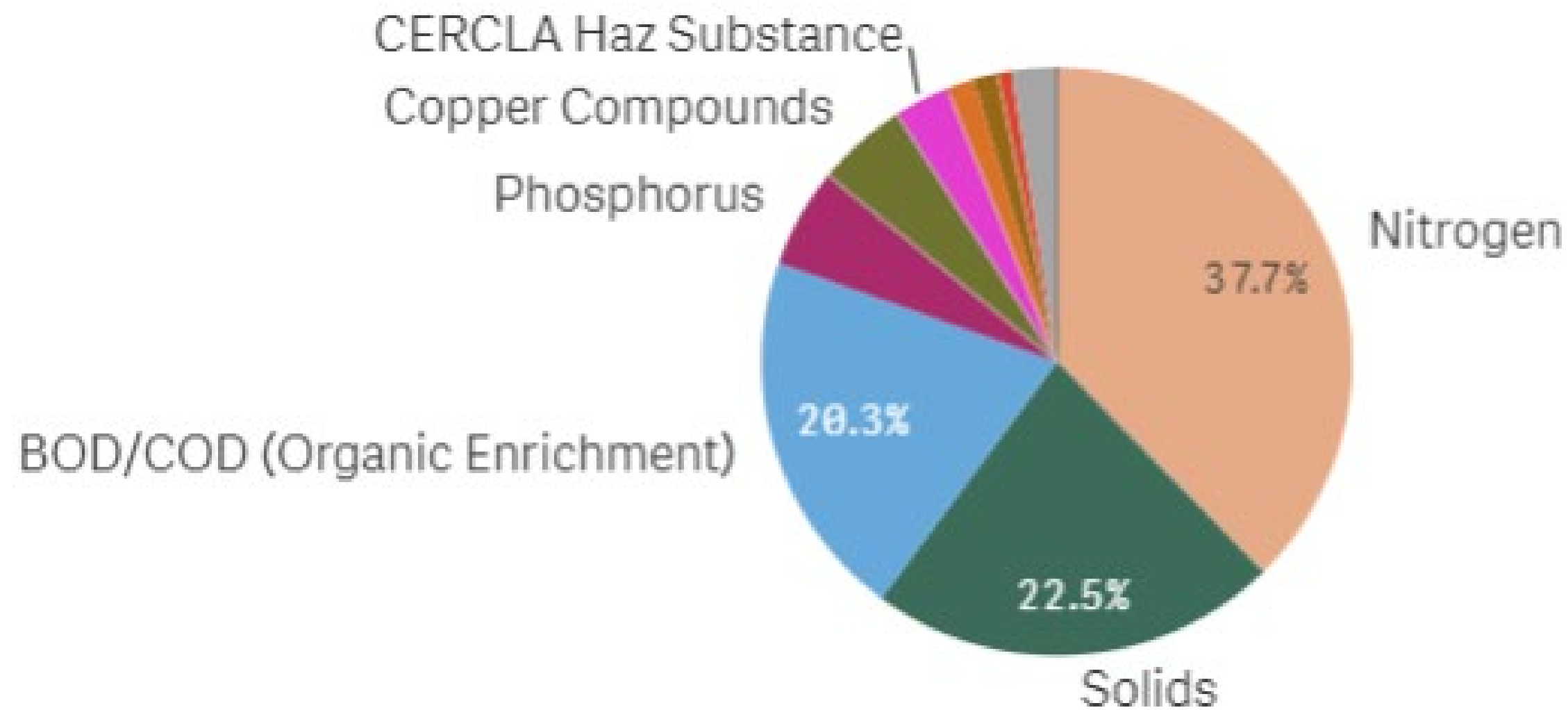
■ other ■ POTWs

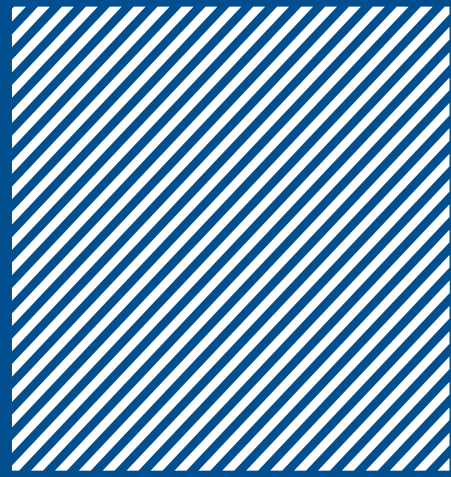
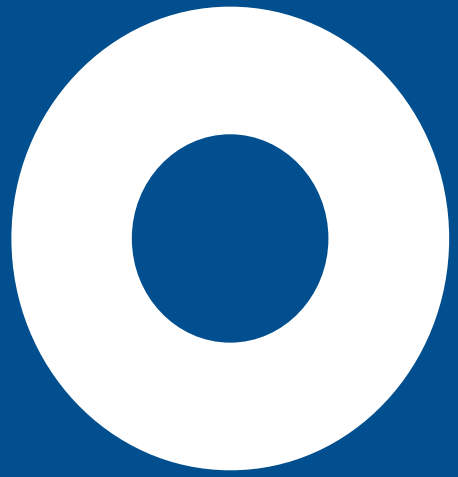
Nationally, 41% of effluent SNC is due to POTWs



Question 2: What Pollutants Drive POTW Effluent SNC?

SNC Violations by Pollutant Category and Parameter

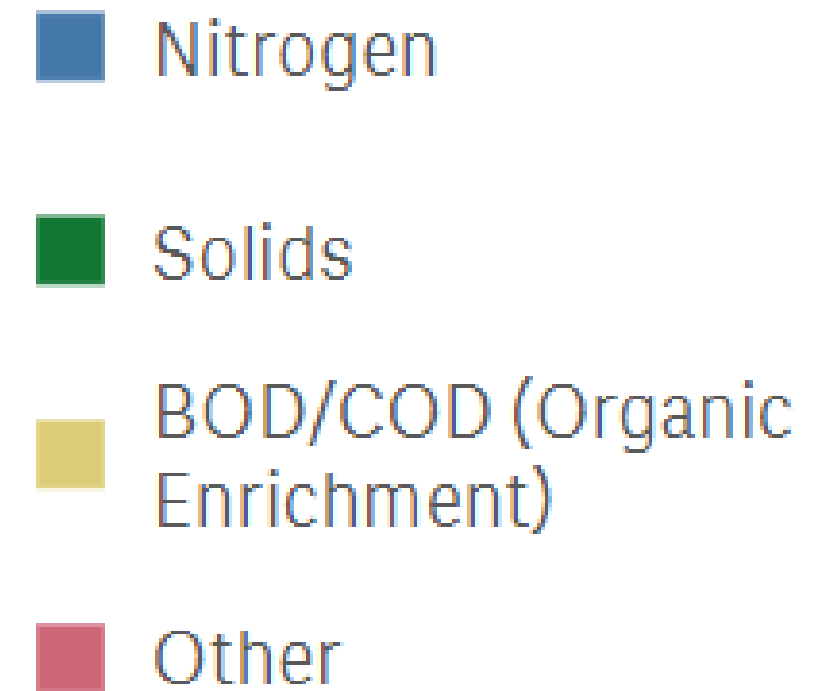
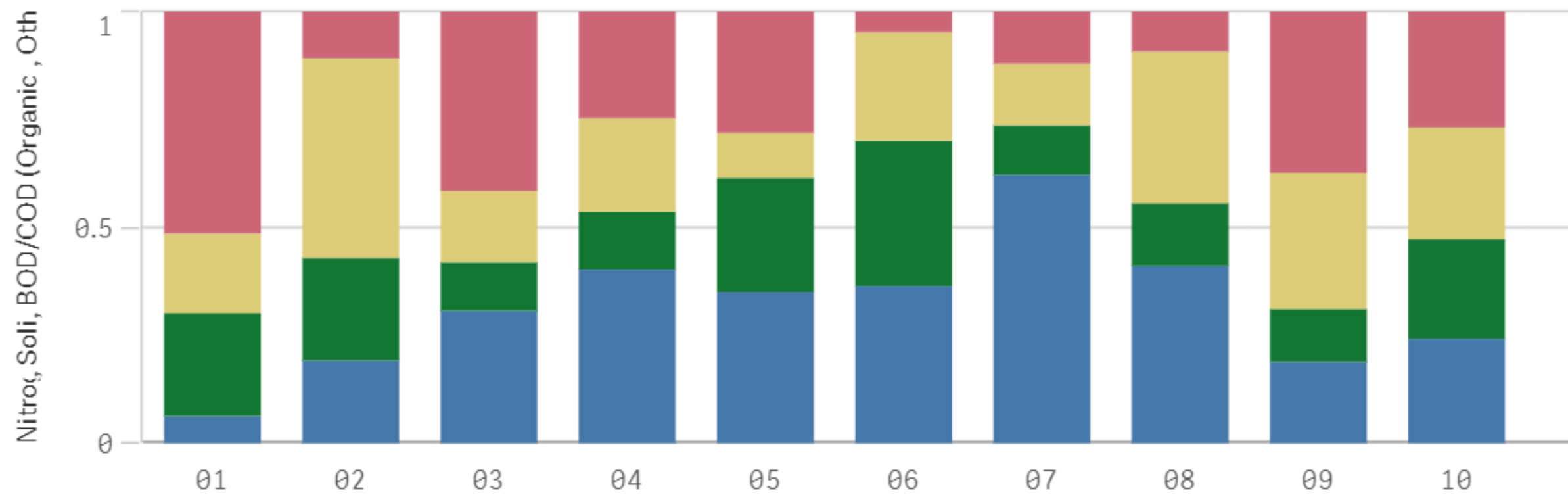


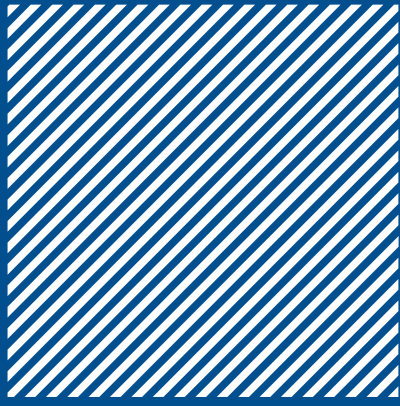


This varies by region

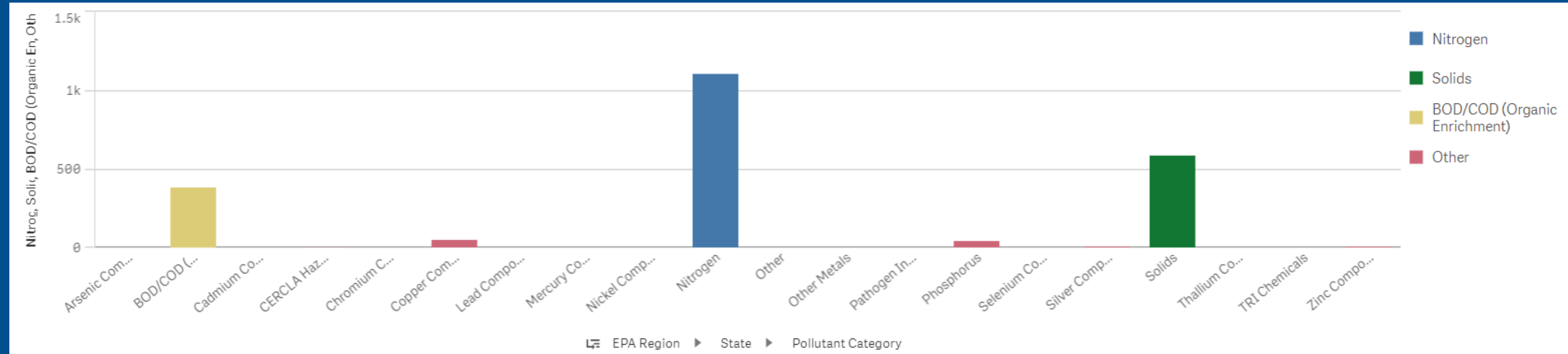
Percentage/Number of SNC Violations by Region, State, Pollutant Category and Parameter

Universe: National SNC Effluent Violations from 01/01/2016-03/31/2019 at POTWs with SIC 4952





And by state (Texas)

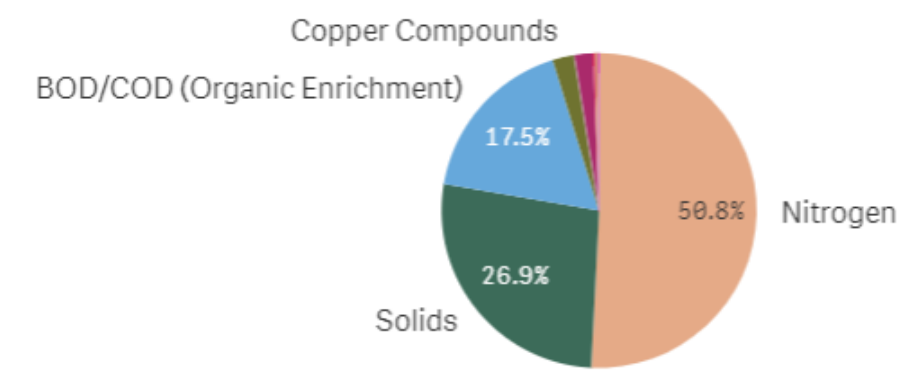


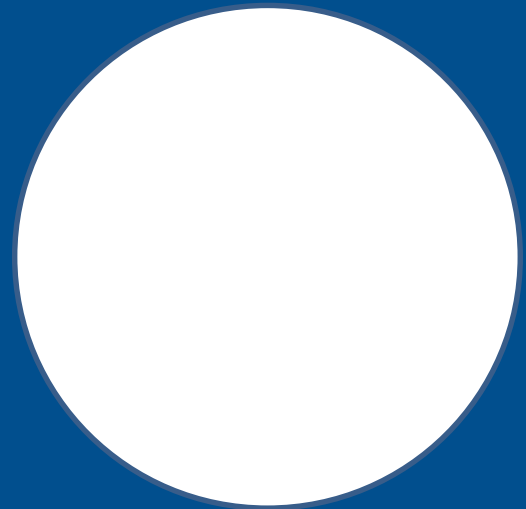
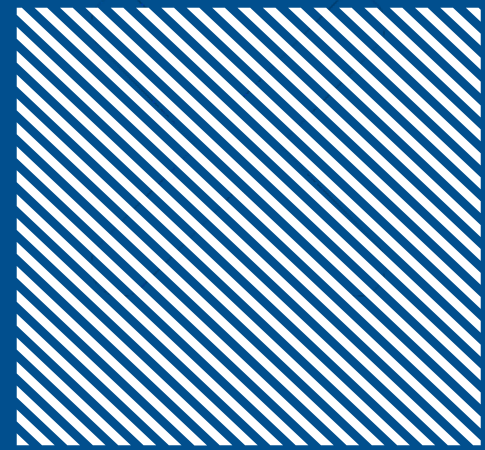
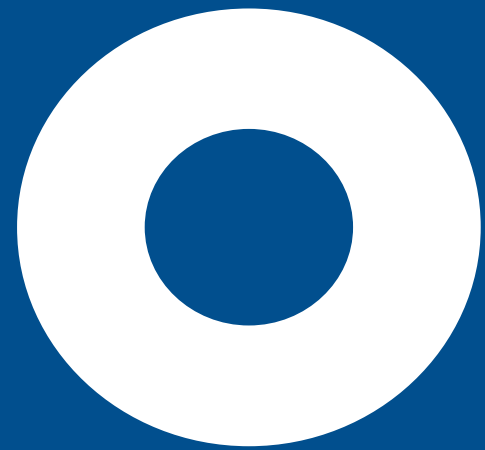
Data Source: EPA, Enforcement and Compliance History Online (ECHO)

Permit, and Monitoring Period Drilldown

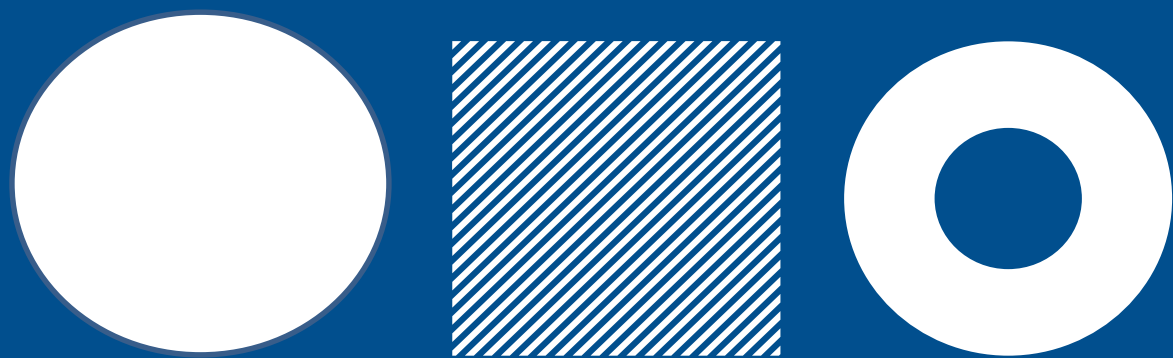
NPDES Permit Number	Parameter Code	Parameter Description	Monitoring Period End Date	Number of SNC Violations
				2171
TX0020109	00610	Nitrogen, ammonia total (as N)	09/30/2018	2
TX0020109	00610	Nitrogen, ammonia total (as N)	10/31/2018	2
TX0020109	00610	Nitrogen, ammonia total (as N)	09/30/2017	1
TX0020109	00610	Nitrogen, ammonia total (as N)	08/31/2018	1
TX0020109	00610	Nitrogen, ammonia total (as N)	01/31/2019	1

SNC Violations by Pollutant Category and Parameter





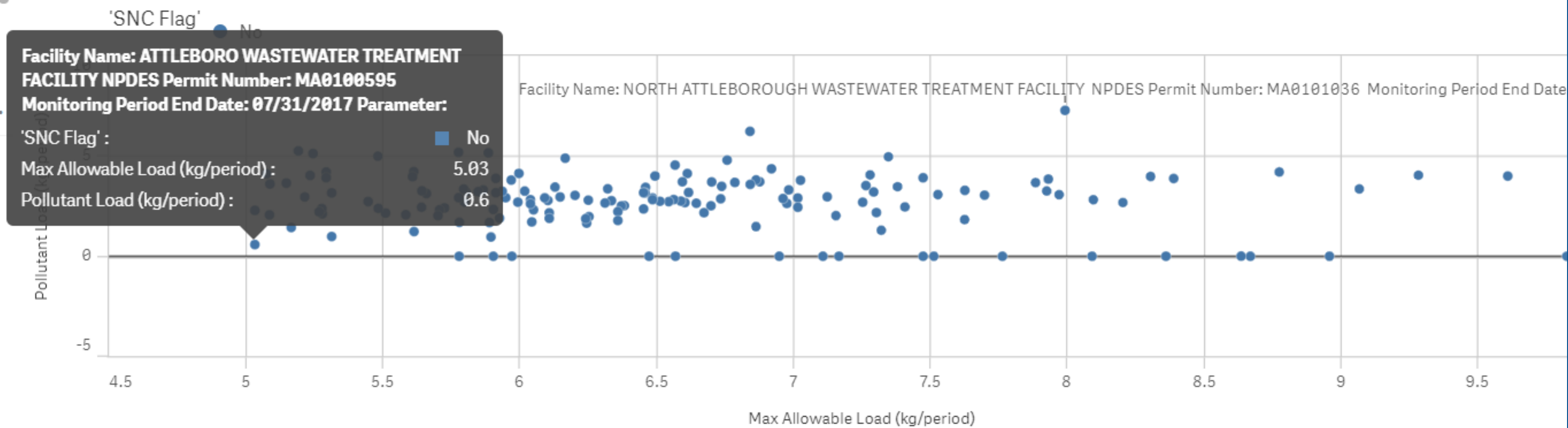
Question 3: What can we learn from POTWs that are achieving compliance and very low loadings?

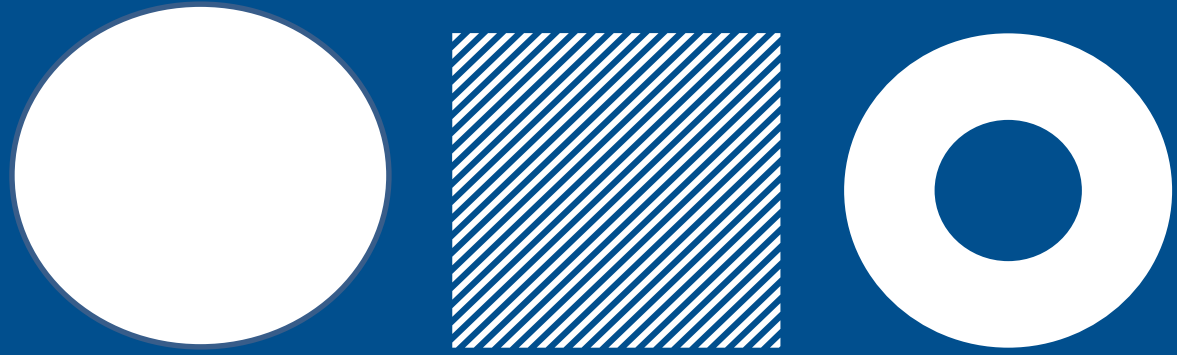


ERG tool plots pollutant loadings

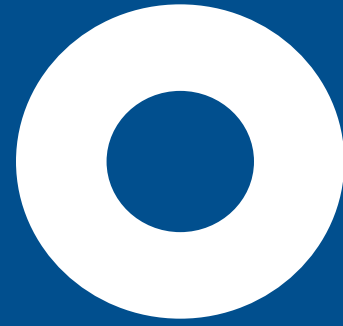
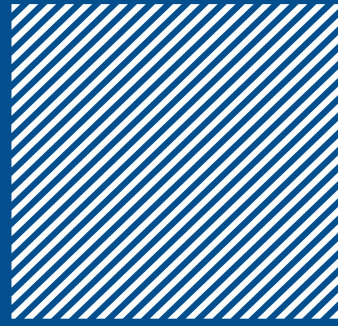
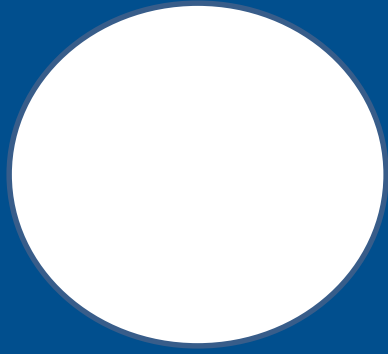
Max Allowable Load (kg/period) v. Pollutant Load (kg/period)

Universe: Monitoring Period Loads from 01/01/2016-03/31/2019 at POTWs with SIC 4952



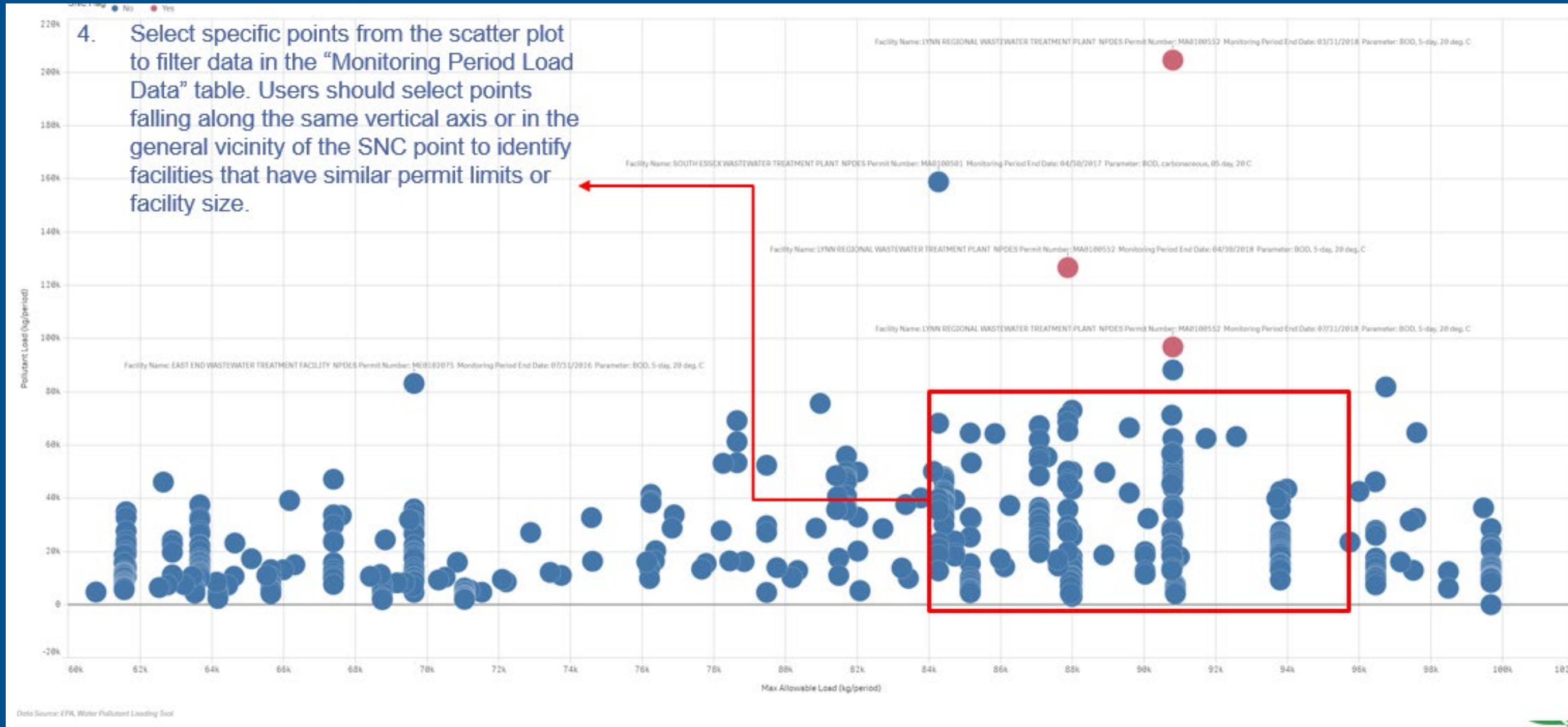


The tool can identify good actors for case studies, and point to mentoring pairs.



Mentoring pairs

<-Load ->



<-Limit ->

QlikSense: Region 1 Monitoring Period Load Analysis: Nitrogen – Pairing Example

Region 1 Monitoring Period Load Analysis

Read Me

This sheet may be used to identify POTWs of similar allowed permit limit. This sheet assumes that facilities with similar Max Allowable Load(s) or load(s) as calculated by the Water Pollutant Loading Tool will have similar permit limits and facility flows. The scatter plot shows calculated monitoring period loads for facilities plotted against the allowable loads and identifies the facilities and monitoring period with SNC.

Load over Limit (LOL) may be represented by how far the point is away from x-y. Assume that records further above the line have exceeded their permit limit to a greater degree.

Instructions for using this sheet:

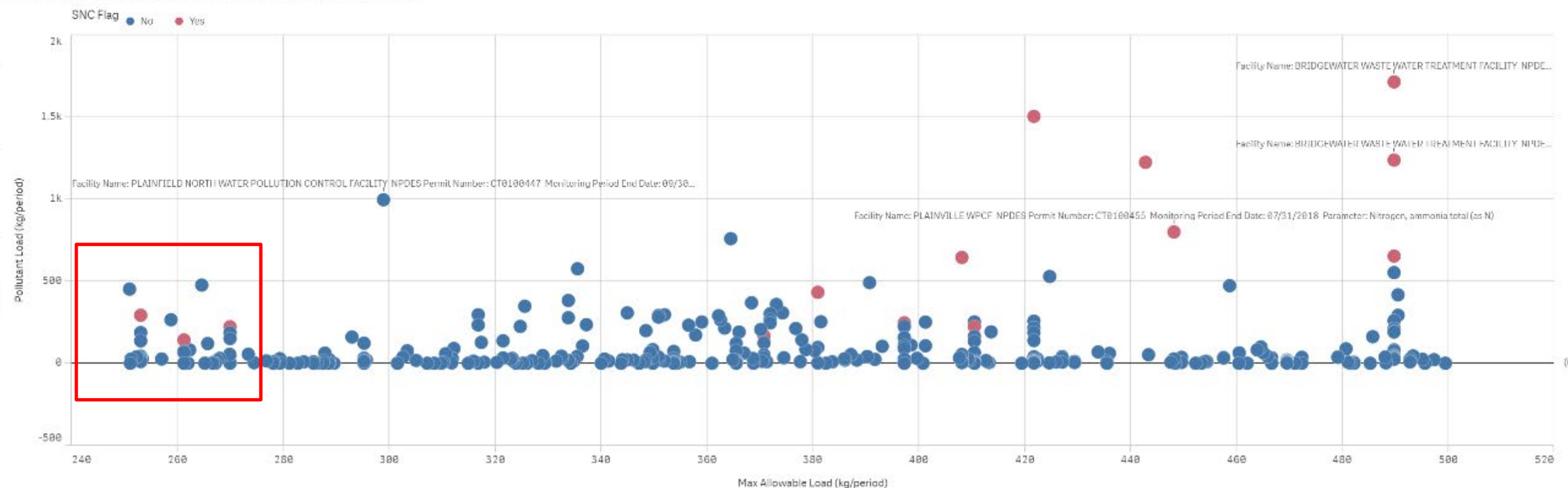
1. Select a Pollutant Category from the "SNC Count by Pollutant Category, Max Allowable Load (kg/period) Budget" and Parameter.

SNC Count by Pollutant Category, Max Allowable Load (kg/period) Budget

Pollutant Category	Max Allowable Load (kg/period)	Parameter Description	Count of SNC Violations	Count of NPDES Permits in SNC
Nitrogen	250, 500		18	5

Max Allowable Load (kg/period) v. Pollutant Load (kg/period)

Universe: Region 1 Monitoring Period Loads from 8/1/2018 to 8/31/2018 at POTWs with SIC 4952



POTW SNC Count by Pollutant Category

EXTERNAL_PERMIT...	Current Selection	Nitrogen	Organic: Enrichm...	Solids	Other
CT0100455	2	2	0	0	0
MA0100641	5	5	0	0	0
MA0101591	1	1	0	0	0
NI0100692	5	5	0	0	0
NI0101052	5	5	0	0	0

Data Source: EPA, Water Pollutant Loading Tool

Region 1 Monitoring Period Load Data

NPDES Permit Number	Facility Name	Monit... Period End	Parameter Description	SNC Flag	Max Allow... Load	Pollutant Load (kg/period)	Load Over Limit (Option 2) (kg/period)	Concentra... (Avg, mg/L)	Limit... (Avg, mg/L)	Meas... Conce... (Avg, mg/L)	Measurement Concentration (Avg, mg/L)	Limit Concentration (Max, mg/L)	Meas... Conce... (Max, mg/L)	Meas... Conce... (Max, mg/L)	Limit Quantity (Avg, kg/day)
MA0100641	BRIDGEWATER WASTE WATER TREATMENT FACILITY	04/30/2017	Nitrogen, ammonia total (as N)	Yes	489.795918...	1714.28571428...	1224.4897959184	3	-	10.8	10.8	-	-	-	16.32653061224
NI0100692	EPPING WASTEWATER TREATMENT FACILITY	03/31/2017	Nitrogen, ammonia total (as N)	Yes	421.768707...	1504.30839002...	1082.5396825307	-	-	-	-	10.8	-	-	35
CT0100455	PLAINVILLE WPCF	09/30/2018	Nitrogen, ammonia total (as N)	Yes	442.845	1224.466425	781.621425	2	-	5.53	5.53	6	-	-	13.92
MA0100641	BRIDGEWATER WASTE WATER TREATMENT FACILITY	04/30/2016	Nitrogen, ammonia total (as N)	Yes	489.795918...	1238.09623809...	748.29931972789	3	-	9.5	9.5	-	-	-	16.32653061224
CT0100455	PLAINVILLE WPCF	07/31/2018	Nitrogen, ammonia total (as N)	Yes	448.2197	800.0721645	351.8524645	2	-	3.57	3.57	6	-	-	6.42
NI0100692	EPPING WASTEWATER TREATMENT FACILITY	04/30/2017	Nitrogen, ammonia total (as N)	Yes	408.163265...	644.7619047619	236.59863945578	-	-	10.8	10.8	-	-	-	25
MA0100641	BRIDGEWATER WASTE WATER TREATMENT FACILITY	09/30/2016	Nitrogen, ammonia total (as N)	Yes	489.795918...	653.061274489...	163.26530612745	3	-	7.03	7.03	-	-	-	16.32653061224
NI0100692	EPPING WASTEWATER TREATMENT FACILITY	02/28/2017	Nitrogen, ammonia total (as N)	Yes	300.05238...	432.380952380...	51.428571428571	-	-	-	-	10.8	-	-	29
MA0101591	MIDDLEBOROUGH WASTEWATER TREATMENT FACILITY	08/31/2018	Nitrogen, ammonia total (as N)	Yes	253.06122...	292.426303854...	39.30507936079	1	-	8	8	2	-	-	11
NI0101052	TROY WASTEWATER TREATMENT FACILITY	05/31/2018	Nitrogen, ammonia total (as N)	Yes	269.93197...	222.131519274...	-47.800453514739	-	-	-	-	-	-	-	24
NI0101052	TROY WASTEWATER TREATMENT FACILITY	06/30/2018	Nitrogen, ammonia total (as N)	Yes	261.224489...	141.768707482...	-119.45578731202	-	-	-	-	-	-	-	21

SNC Violation Count

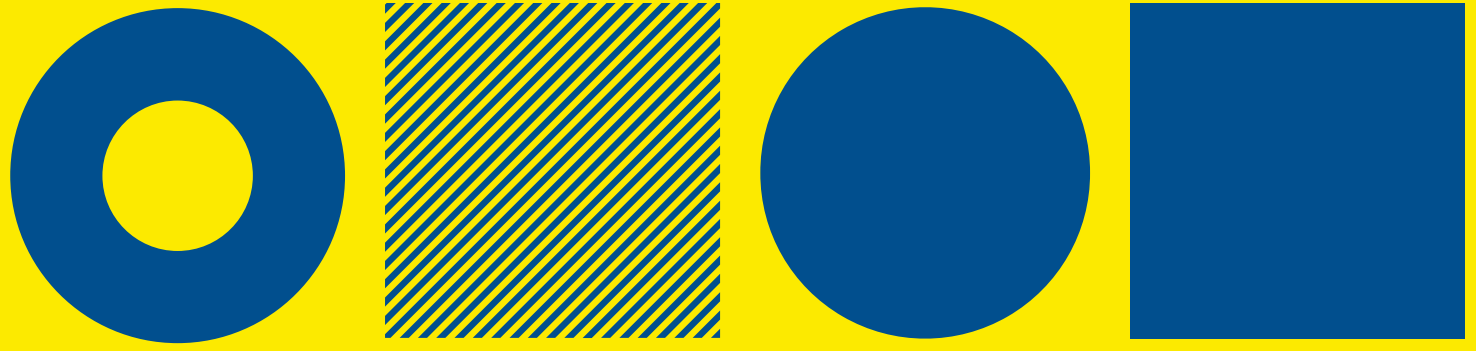
18⁵

(Distinct NPDES Permits)

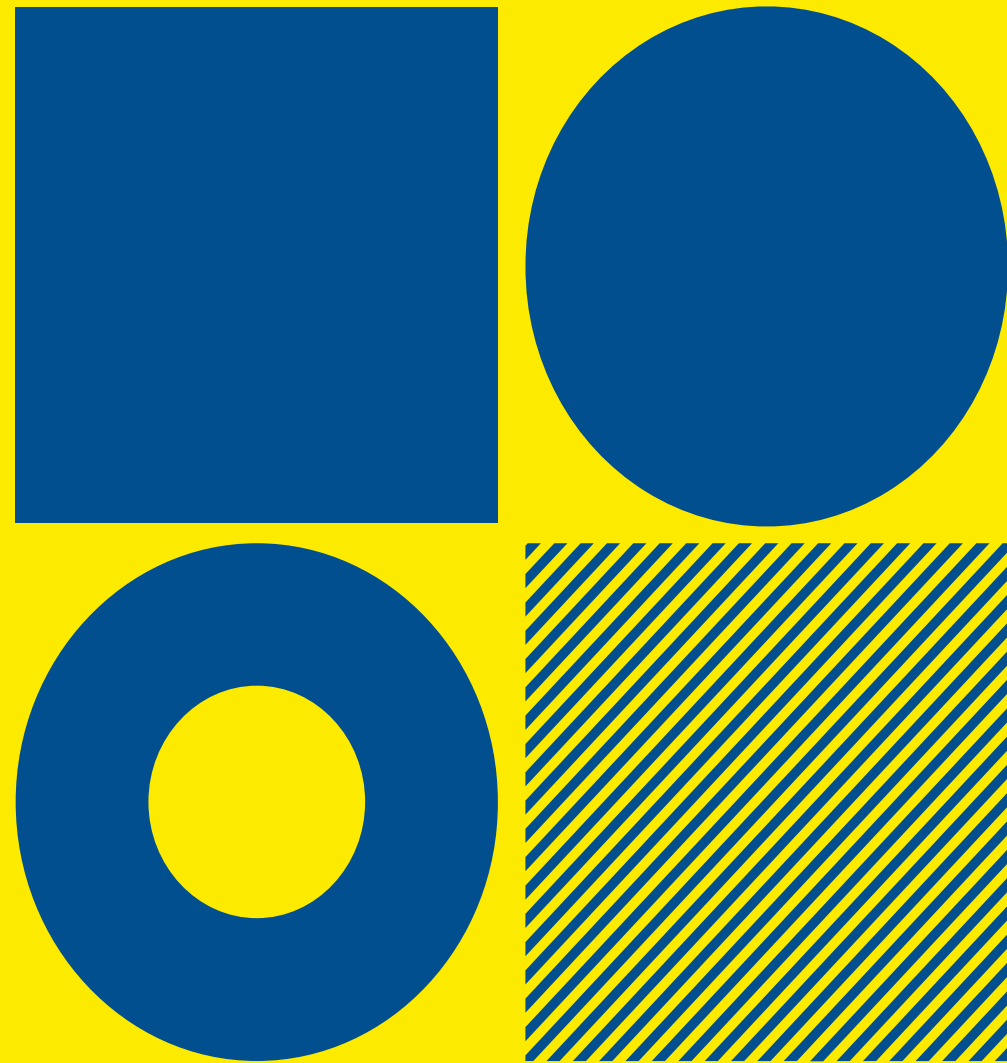
Monitoring Periods with SNC

14⁵

(Distinct NPDES Permits)



Question 4: Can POTW
mentoring programs be
effective?



The 'Silver Tide'

Number of Water and
Wastewater Treatment Plant
Operators:

127,100

Retirements, 2018-2028:

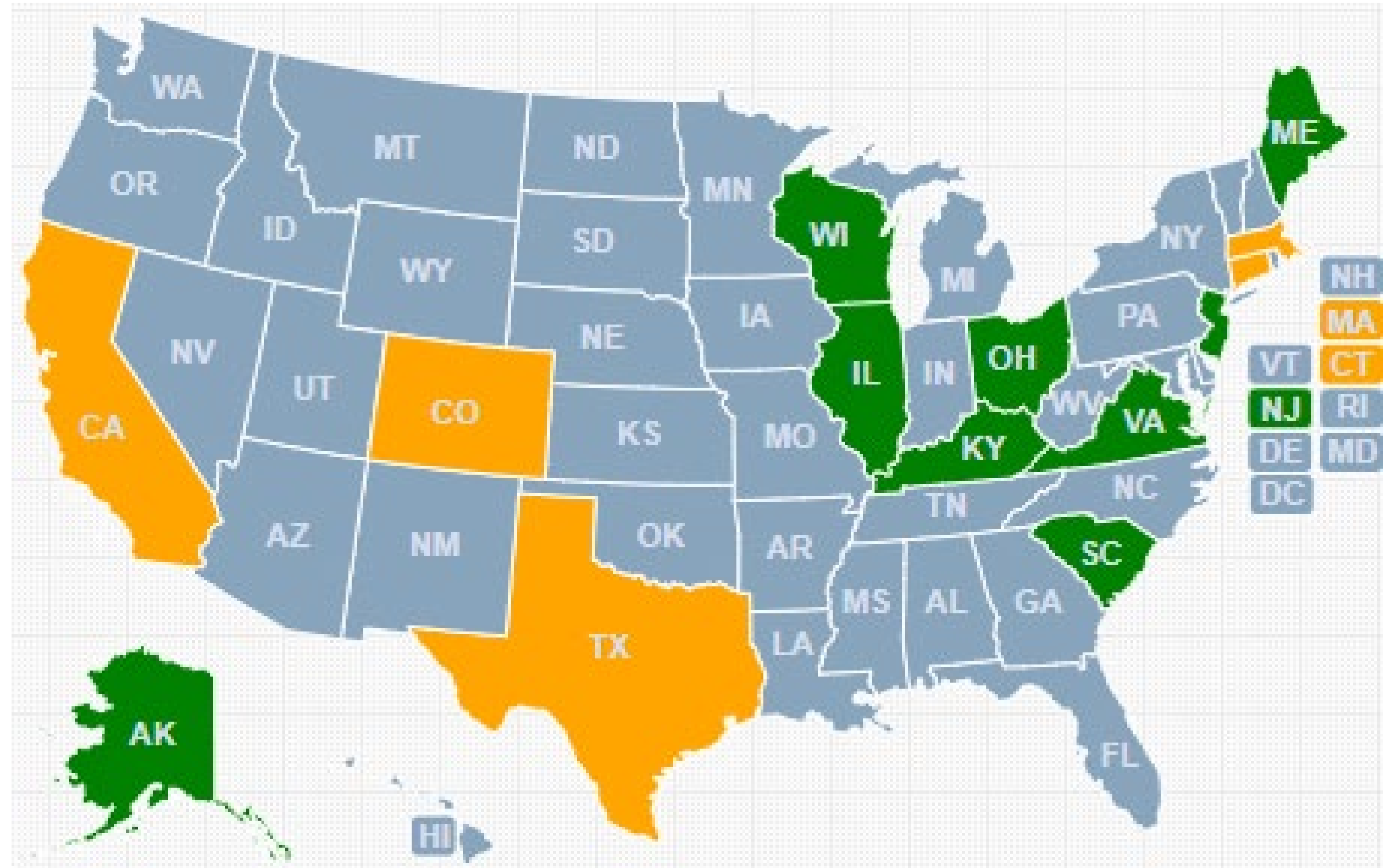
-5%

Employment change, 2018-
2028:

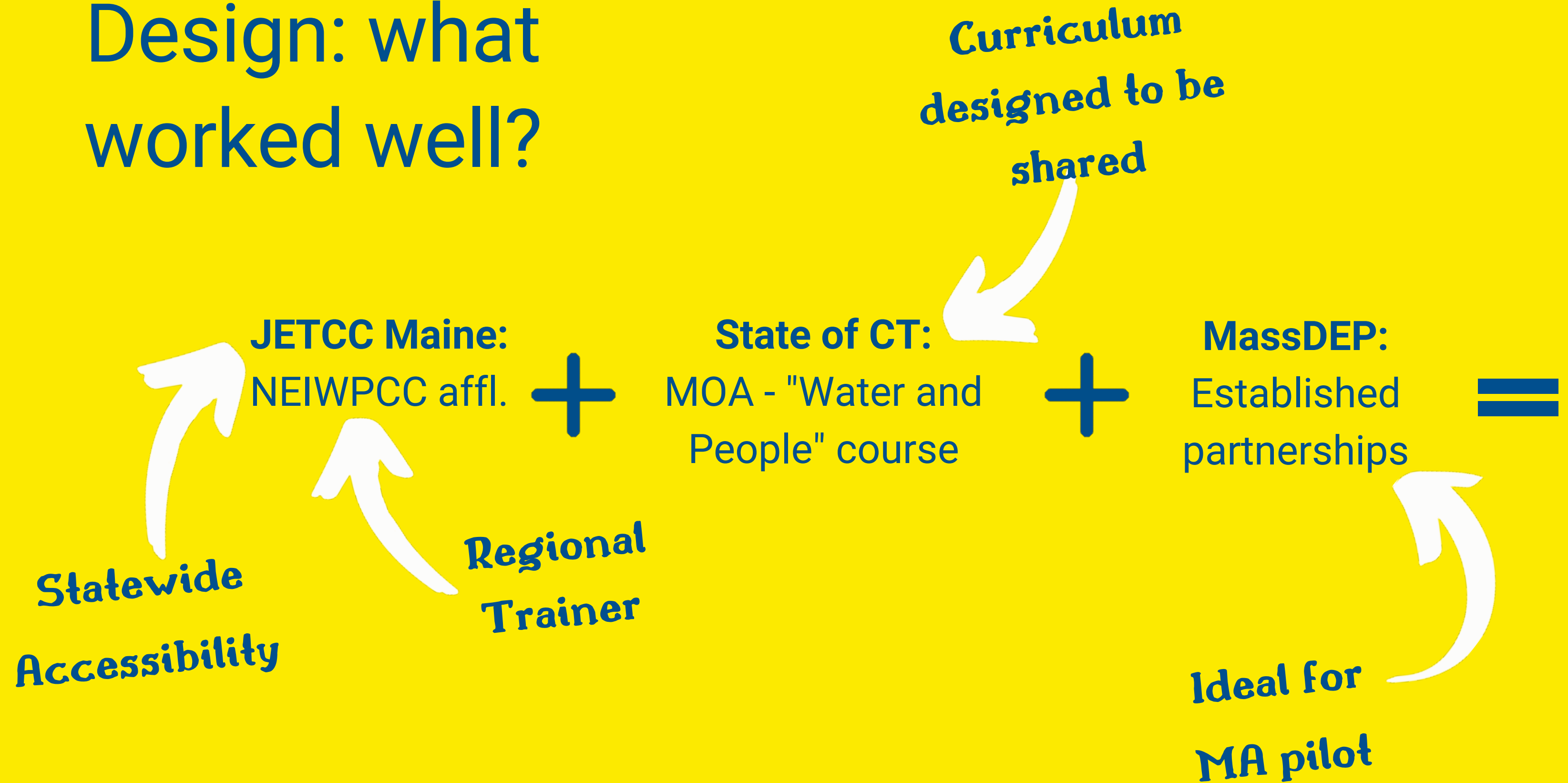
-6,100

-U.S. Bureau of Labor and Statistics

EPA Report (2012):



Design: what worked well?



Vision:

NEIWPC

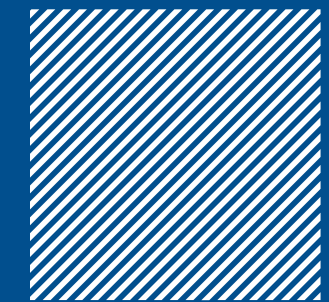
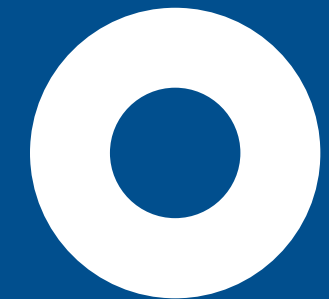
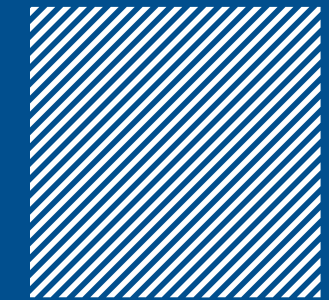
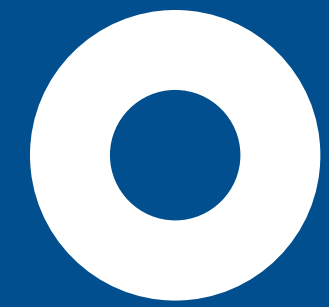
Training



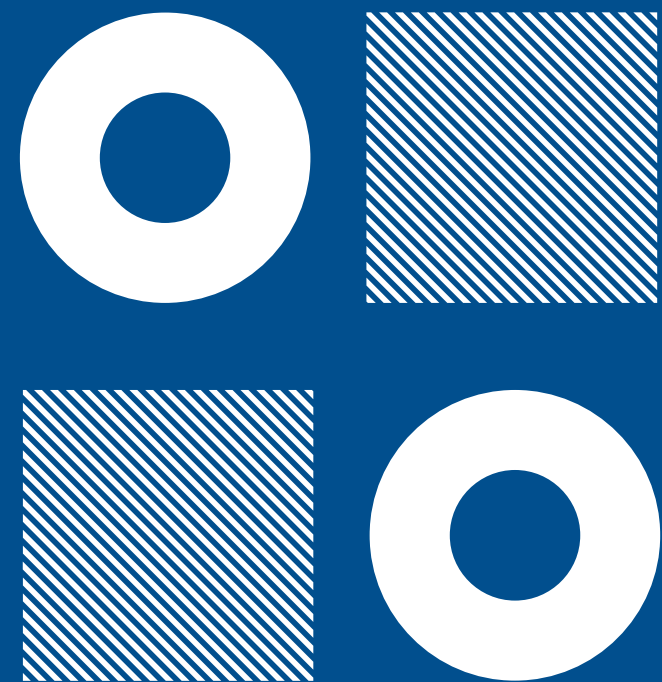
"Water and People"

POTWs

Article on the New England Operator Exchange Program



Summary



Priority Sector

POTWs

Priority Pollutants

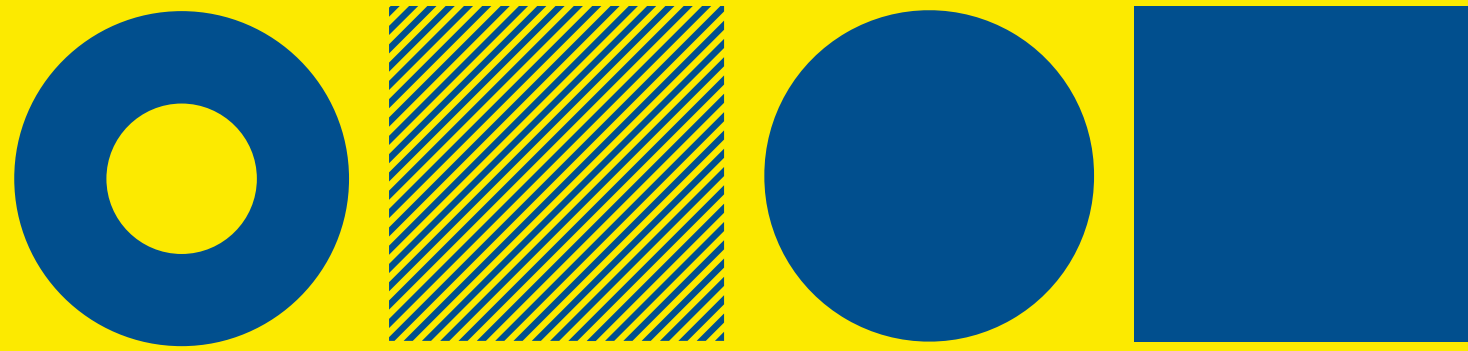
For focusing assistance and training

Identify Best Operators

Using effluent data

Training and Mentoring

Support and build on existing programs



Thank you.

Denny Dart
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USEPA Region 1
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