Oregon DEQ Water Quality Permitting for Individual NPDES Permits

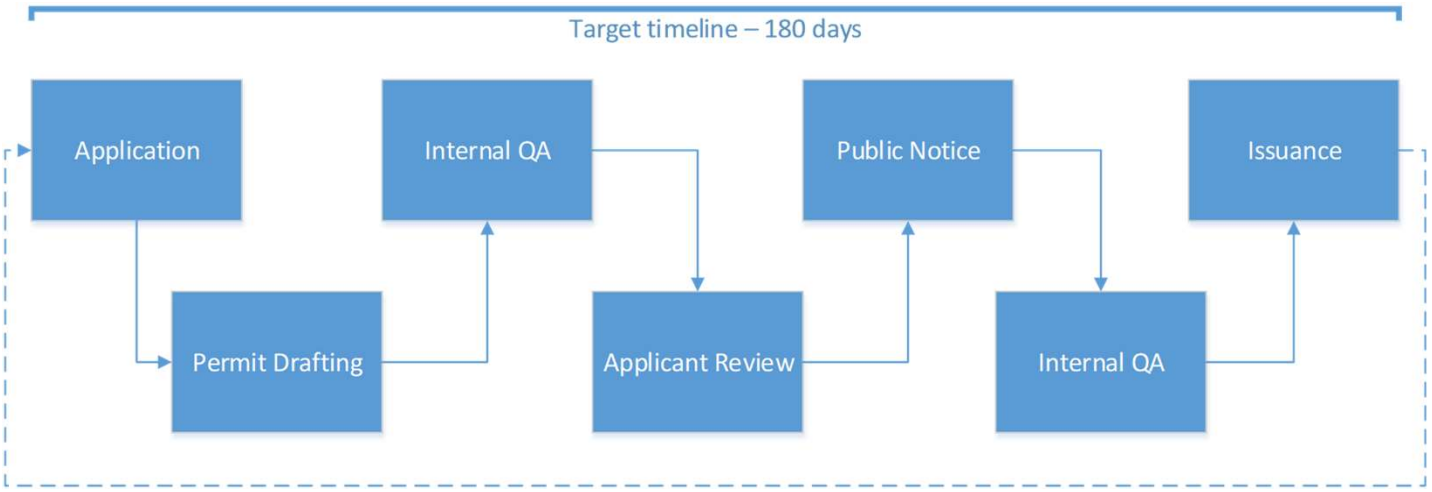
Water Quality Permitting and Program Development

December 7, 2022
NEBC

Topics for Discussion

- Permitting process overview
- Methods and implementation
- Importance of current permits
- Status updates
- Permit Development
  - Pollutants of Concern
  - Quality and Data
- Coming up

Permit Issuance



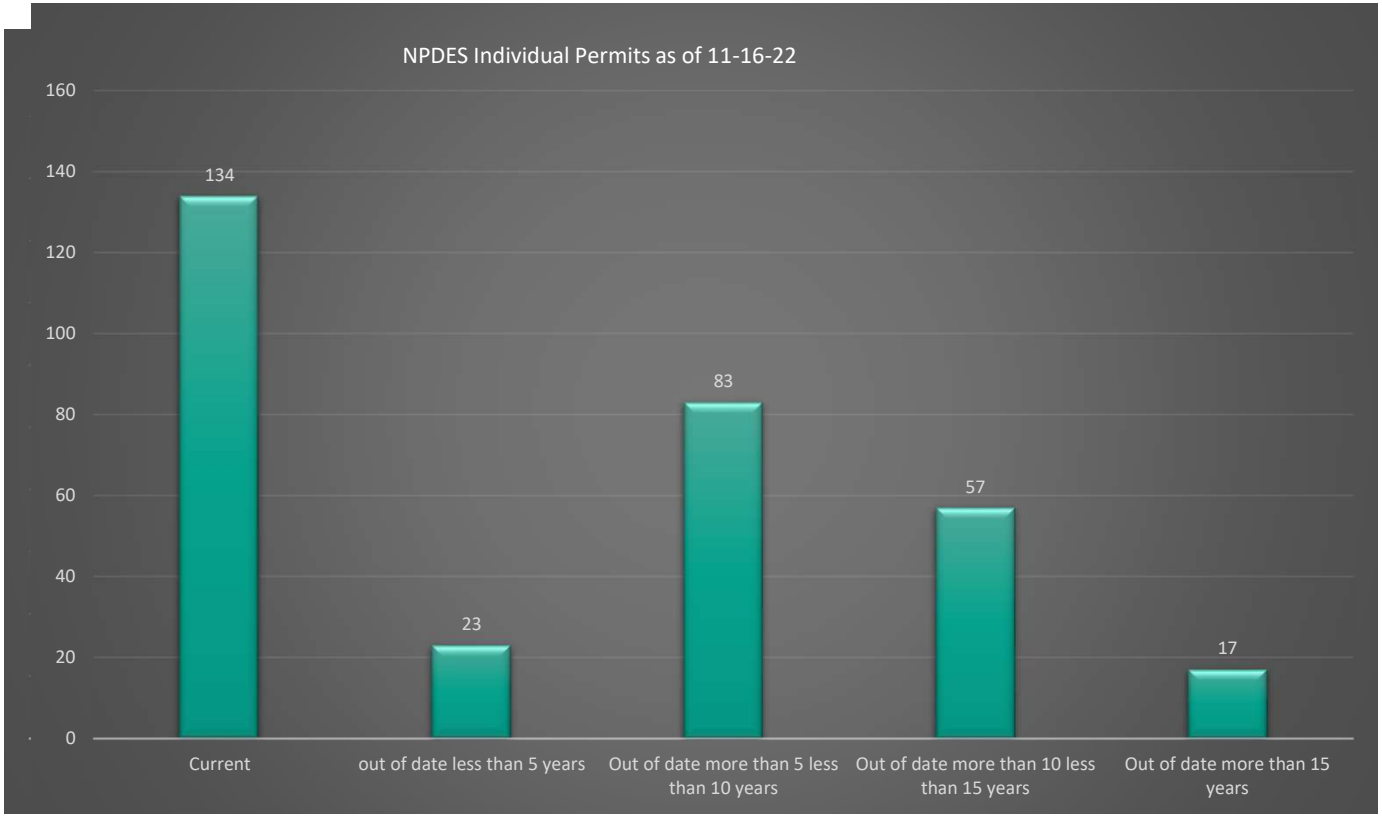
Methods and implementation

- The Team of 10 continues (previously 8) – Multiple vacant positions in east, west, and NW Oregon offices
- DEQ continues to use a statewide, centralized approach for permit writing. Recognize standardization
  - Permit writing team continues to focus on permit writing
    - Compliance, enforcement, and engineering is handled by local offices and local personnel
  - Stakeholder engagement continues to be a focus for permit development
    - Primarily during permit development. Expect communication during AR and PN, as well as gap analysis
- Implementation of front-loaded subject matter expert (SME) process
  - Permit writers are required to review complex topics with SME's
  - SME reviews are approved prior to QA and back-end processes (QA, AR, PN)
- Streamlined QA process for permits after development
- Permit issuance is a priority for the agency → "Issue Permits" Top-down communication
  - Your DEQ Online is a competing priority while the program works on testing

Importance of Current Permits

- Monitoring requirements and limits reflect current standards and guidelines
- Changes in effluent limits are incremental
- Prepare for complex compliance issues
- Fresh data represents current performance
- Permit reflects current operations
- Permits can be updated to support facility planning and upgrades
- 10-year targets for NPDES Individual permits – By 2027
  - Out of date permits total less than 10% - current is 60%
  - Continue to publish annual and five-year plans – Individual and General
  - Update permit template twice per year if necessary – new fact sheet template updated continuously (published annually)
  - Permits, data, and supporting documents are available electronically - YDO
  - Permits are issued within 180 days of application submission – growing target for program
  - Continuous improvement – planning, metrics, and reporting
  - Complete data gap analysis prior to permit development – target two years prior
- Needs…
- Resources, Data, and Resources

Overall Status of DEQ's NPDES Individual Permit Program



- 180 (57 percent) administratively continued.
- 23 (7 percent) are administratively continued for less than five years.
- 83 (26 percent) are administratively continued five years or more and less than 10 years.
- 57 (18 percent) are administratively continued 10 years or more and less than 15.
- 17 (5 percent) are administratively continued for 15 years or more.

2023 Issuance Status

20 **General Permits**

Administratively Continued General Permits

12

Active General Permits

8

General Permits Renewed this FFY

1

NPI

Tota

% of Exte

Projected General Permits to be Renewed this FFY

100J Non-contact Cooling Water, 600PM Off Stream Placer Mining, 1700A Vehicle & Equipment Wash Water, 800-J CAFO (WPCF)

Overall Issuance Progress (All Individual NPDES)

2023 NPDES Individual Permit Issuance Plans

- On October 1 of each year, DEQ publishes a permit issuance plan that identifies the permits targeted for development during the next year and for the next 5 years

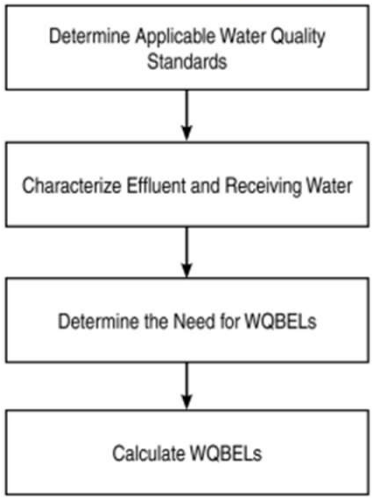
- 2023 work plan developed internally
  - 2022 rollover permits
  - Permits soon to expire
  - Regionally priorities
  - Geography
  - Resource availability
  - Readiness reviews

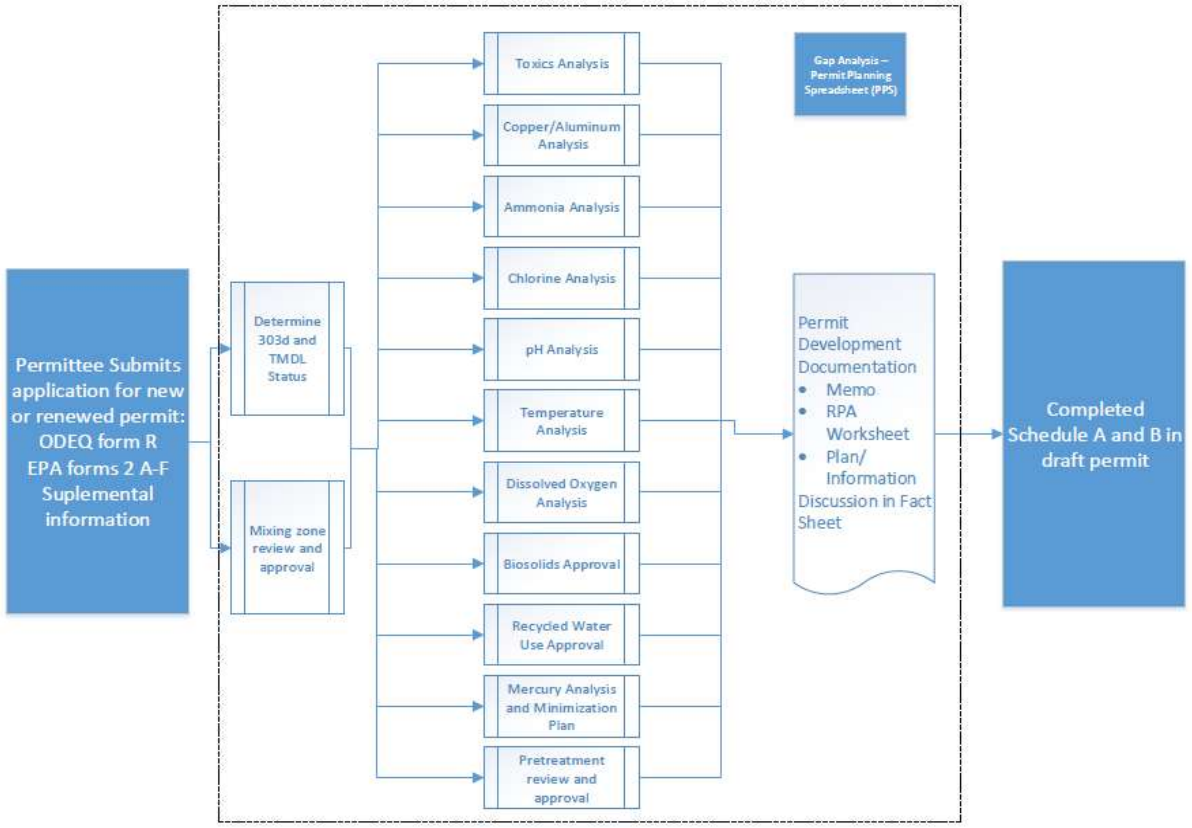
- Final Plans posted on October 1, 2022 at https://www.oregon.gov/deq/wq/Documents/wqpPIP2023.pdf (Water Quality Permits)

- General permits - https://www.oregon.gov/deq/FilterDocs/wqpNPDESpip2020.pdf

Permit Development

Exhibit 6-2 Standards-to-permits process





Pollutants of Concern (POC)

- POC – pollutant present in effluent that may impact water quality
- Example of tool for identifying industrial POC's
- WQ standards
  - Beneficial uses
  - WQ criteria
  - Human health criteria
- Stream impairments
- TMDL WLA's
- Pretreatment industrial users
- Technology Based Effluent Limits (TBEL's)

Gap Analysis Industrial Permittee POC Documentation Sheet

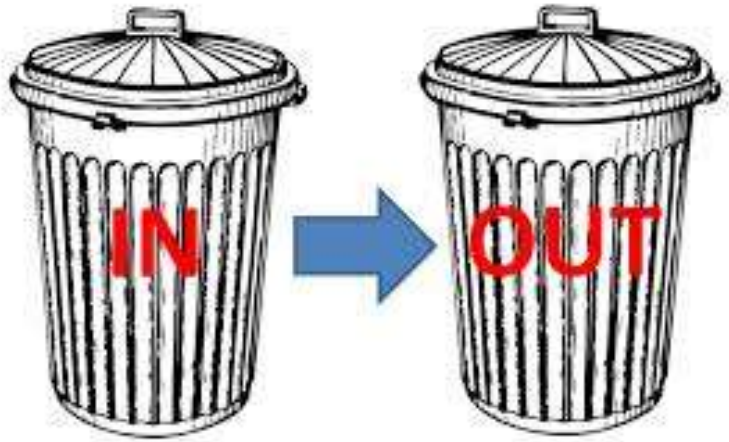
Prepared By:

Preparation Date:

Permittee:					
Permit #/EPA #:					
SIC codes:					
Industrial Category:					
Toxics Needed Based on Industrial Category (check applicable boxes)	Metals	Volatiles	Acid Extractable	Base/Neutral	Pesticide
Other POCs identified from application:					
Other POCs identified from monitoring submitted by permittee (may or may not be part of application):					
303d list parameters (may or may not be included in final permit depending on whether they are expected in effluent – PW discretion):					

Quality Matters

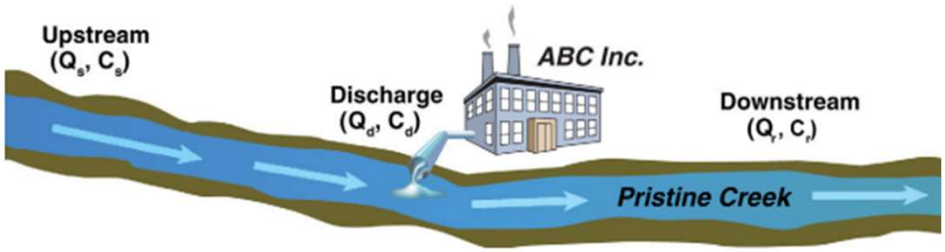
- High quality data is very important
- Samples can be contaminated resulting in elevated concentrations that don't reflect the quality of the effluent
- If samples don't meet QA/QC, they can't be used, resulting in less data for the analysis – and what does this lead to? (Yes, more conservative analyses)



Data Evaluation

- Reasonable potential analysis
  - Does the effluent have the potential to exceed water quality criteria?
- Waste load allocations calculated
  - Convert or add numeric waste load allocations from TMDL
- Mixing zone allowance?
- Run models
  - End of pipe
  - WQ model: Steady state with critical conditions (effluent + stream)
  - Importance of the CV on critical effluent projection

Exhibit 6-11 Simple mass-balance equation



Mass = **Flow** (Q) in million gallons per day (mgd) or cubic feet per second (cfs) X **Pollutant concentration** (C) in milligrams per liter (mg/L)

$$Q_sC_s + Q_dC_d = Q_rC_r$$

where

Q_s	=	stream flow in mgd or cfs above point of discharge
C_s	=	background in-stream pollutant concentration in mg/L
Q_d	=	effluent flow in mgd or cfs
C_d	=	effluent pollutant concentration in mg/L
Q_r	=	resultant in-stream flow, after discharge in mgd or cfs
C_r	=	resultant in-stream pollutant concentration in mg/L (after complete mixing occurs)

Example

- DEQ uses effluent data to determine if there is a potential for the discharge to exceed water quality standards.
- If the discharge exceeds a water quality standard, an effluent limit is needed.
- DEQ uses an EPA statistical analysis that is more conservative with fewer data points
  - The model uses the CV and multipliers to calculate an estimated statistical maximum

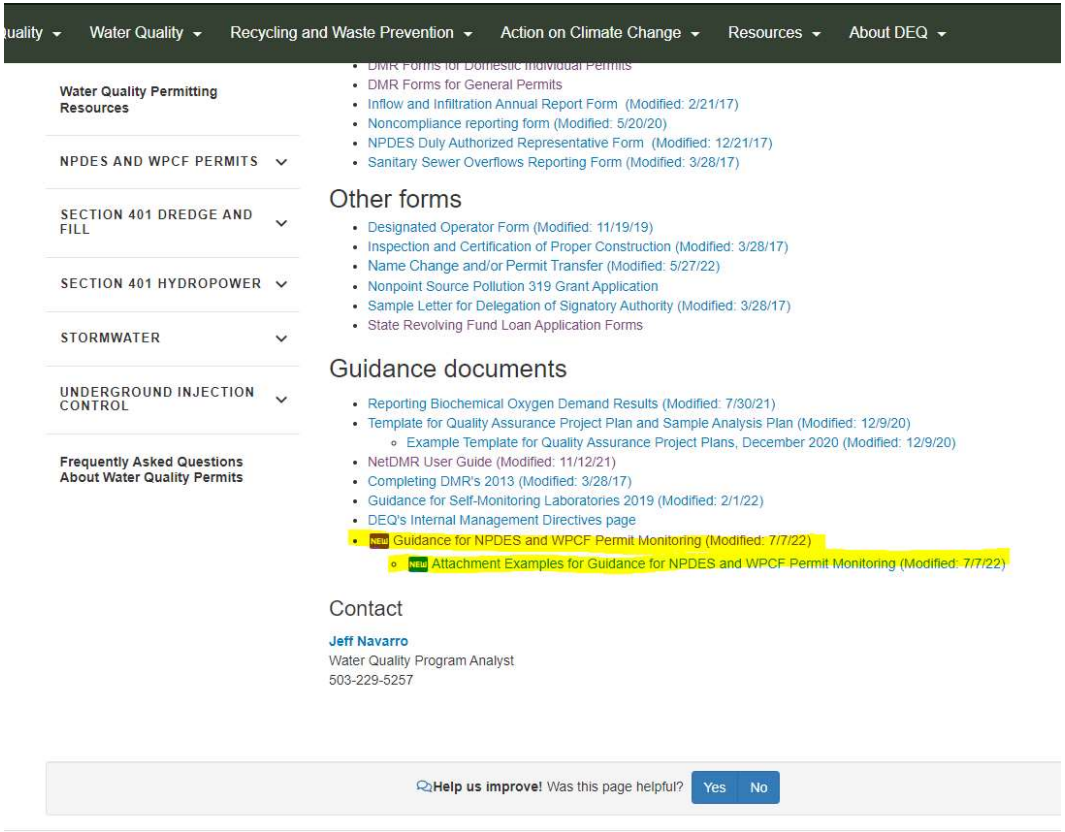
	Measured	Statistical	Mixing zone	Silver
n	Maximum	Maximum	Concentration	Criterion
3	0.2	0.8	0.19	0.1
12	0.2	0.4	0.07	0.1
	All units in ug/L			

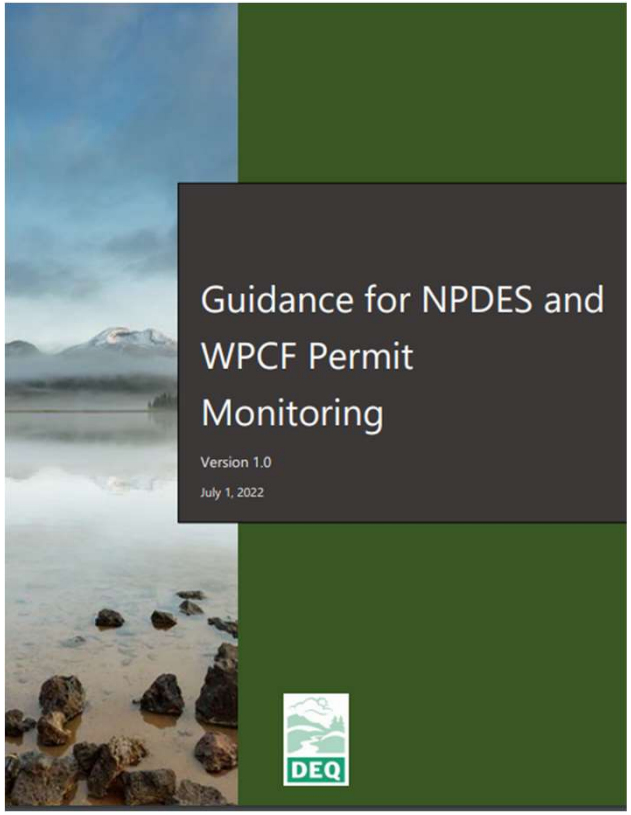
Example:

A silver data set with 3 data points and a maximum of 0.2 ug/L results in an effluent limit in the permit

A silver data set with 12 data points and the same maximum value results in no effluent limit needed.

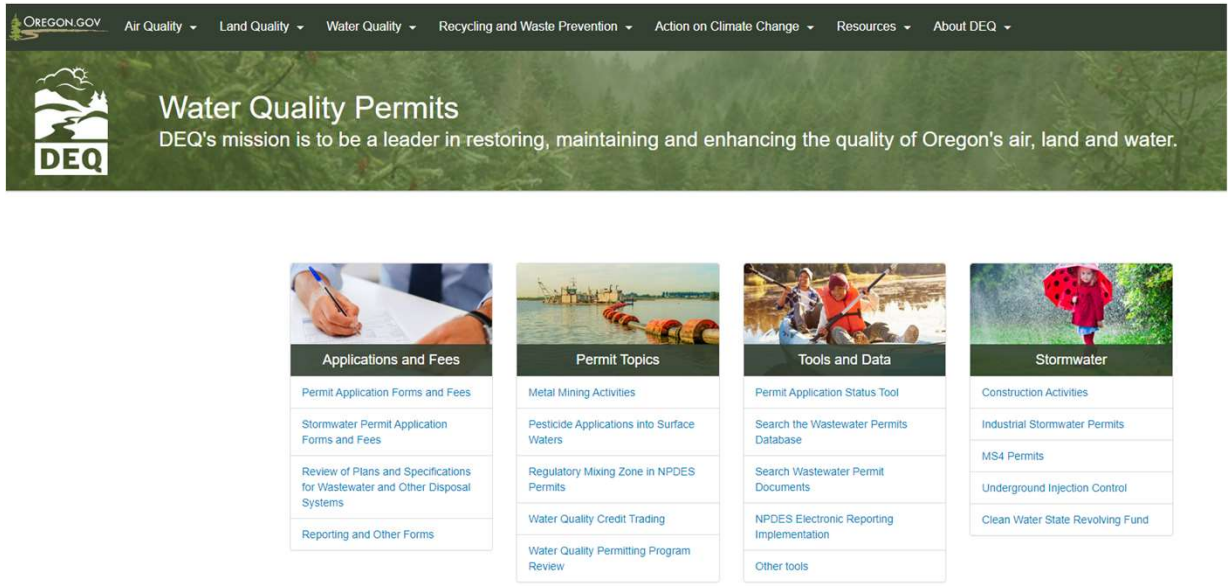
Monitoring Guidance





More Info on NPDES Permitting

https://www.oregon.gov/deq/wq/wqpermits/Pages/default.aspx



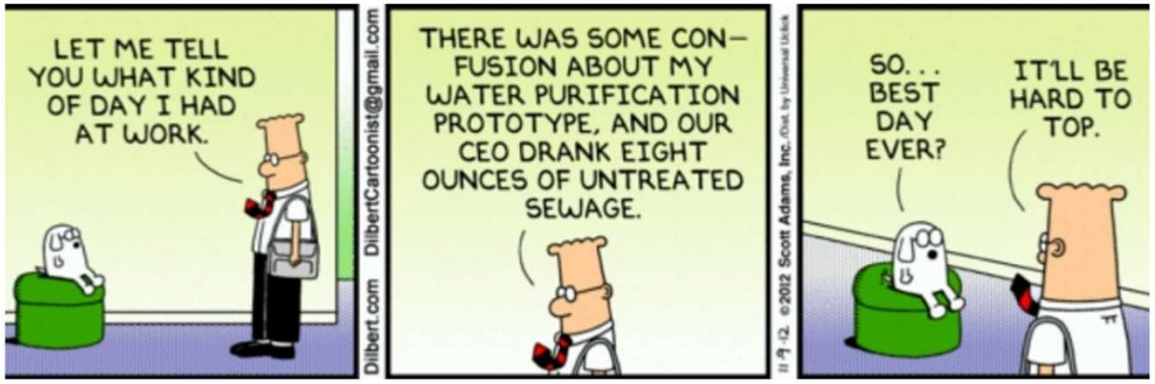
https://www.oregon.gov/deq/wq/wqpermits/Pages/Forms.aspx

DEQ
State of Oregon
Department of
Environmental
Quality

DEQ

Questions?

I INVENTED A FILTER THAT CAN TURN RAW SEWAGE INTO PURE DRINKING WATER IN SECONDS.
GLUG GLUG GLUG
THE CLEAN WATER ENDS UP HERE IN THE UPPER CONTAINER.


LET ME TELL YOU WHAT KIND OF DAY I HAD AT WORK.
THERE WAS SOME CONFUSION ABOUT MY WATER PURIFICATION PROTOTYPE, AND OUR CEO DRANK EIGHT OUNCES OF UNTREATED SEWAGE.
SO... BEST DAY EVER?
IT'LL BE HARD TO TOP.