COLORADO
Department of Public Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

Brainstorming: Data Summary and Analysis

Regulation 85 Nutrients Management Control

Text in black indicates brainstorming list presented by the division.
Red text indicates brainstorming by stakeholders during September 29, 2014 meeting.

Please send your feedback and/or additional brainstorming ideas to CDPHE_nutrients@state.co.us by October 15, 2014.

General

- Add data tracking sheet to website so facilities are aware of report status.

Monitoring Summary

Mapping Information

- Monitoring data locations
    - u/s locations
    - d/s locations
    - effluent locations
    - additional data collection efforts (NPS)
- Critical Watersheds
- Regulation 31 application in Basin Standards (Rio Grande, Arkansas, Up/Lo Colorado)

Tabular Summary

- Compliance rates
- Summary statistics
- Can WQCD share data in map with DSN interactive mapping capabilities?
- How do we portray the timing of sample collection? – suggested use of DSN
- How will trend data be incorporated? This is publicly available data via STORET
- Our data getting pushed into EQUIS will then be in STORET and ERAMS
- CDSN and ERAMS will allow users to make their own maps and use various interactive features
- Will Chl-A data be included in Reg. 85 maps? This is a Reg. 31 data issue, not a Reg. 85 data issue. Once we have a better idea of nutrients, there will be an opportunity to merge Chl-A data into it.

Facilities Summary

Mapping information and tabular summary

- Facilities just required to submit effluent data
- Facilities required to submit effluent data plus u/s and d/s info
- Capacity
- Current flow
- Characterization
    - secondary treatment
    - ammonia removal
    - nitrogen removal
    - phosphorus removal

Facilities Summary (cont.)

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Analysis Questions (qualitative and quantitative)

Facilities

- Could facilities that are under capacity meet Regulation 85 effluent limitations in the long term? Information could include:
  - facility summary (facility capacity and current flow)
  - how will all this information be managed? Starting in excel, will be transferred into our database, and GIS
- If facilities are under capacity now are those areas expected to see significant population growth between now and 2040? Information to utilize could include:
  - utilize State of Colorado demographer's information
  - Colorado State University Rapid Watershed Assessment Tool (eRAMS)
- Do any of the facilities have an opportunity to optimize to achieve some level of nitrogen or phosphorus removal? Information to utilize could include:
  - facility summary (capacity, current flow, facility characterization information, case studies of other optimization efforts).
  - For facilities with Reg. 85 treatment grants, is WQCD looking at Chl-A and MMI up and down-stream to detect nutrient changes.WQCD: We don't have stressor ID for nutrients, and we don't have specific monitoring plan for those facilities which have received grant. For future monitoring plans, we may be able to incorporate some monitoring into measurable results efforts
  - Facilities should be doing this sort of monitoring. IS WQCD incorporating these sort of monitoring efforts into permits, etc. This is more individual concern. There is variability in what facilities can do in terms of operations/optimization of technology, etc.
  - How can WQCD assist in this?
  - In terms of capacity, then looking at compliance with Reg. 85, must meet at design capacity, not functional capacity.
  - Add funding/resources to compliance assistance. This is a theme during the fee bill stakeholder process.
  - This process will allow us to target compliance assistance to those who need it.
  - What about information provided via DMR? We need to compile it so that we can use it.
  - Do we have an end goal? What are we trying to answer? WQCD is exploring data summary and analysis opportunities related to the required Reg. 85 monitoring data. Ultimately, we will want to understand if the regulation has been effective in reducing nutrients in surface water. We need to explain the monitoring results to the WQCC so they can decide what changes, if any, need to be made to the regulation.
  - Have we looked at EPA and other mapping tools like enviro-mapping?
  - Could we consider integrated permits?
- Are there any new technologies or developments available to control point sources of nutrients? What is the cost/affordability of the new technology? Information to utilize could include:
  - qualitative review and report out regarding new technologies/development and their applicability for Colorado systems
- For non-DWWTF, is using only SIC 20 (food production) appropriate?
  - qualitative review of permit reporting information and monitoring information
  - look at Chesapeake Bay as they have regs for many different types of facilities
  - Are we capturing far field effects? Rapid denitrification occurs naturally. We can use our trend sites for this sort of information

Monitoring

- Data gaps? Information to utilize could include:
    - geospatial/mapping data
    - monitoring summary
    - Why can't data be reported monthly, etc. with DMRs? First go, we wanted it separately, moving forward there is a possibility to consider combining
- Are we requiring the right type of data to be collected? (TN vs. TKN + other nitrogen components) Information to utilize could include:
    - Regulation 85 required monitoring results
    - Balancing methods people are already using versus required components.
- How long will we need to require data be collected? Information to utilize could include:
    - facility summary information
    - monitoring results
    - statistical considerations – how much is needed to tell the story?
    - This could be its own meeting. This story will change depending on which questions we're answering. It is a strain on WQCD and others' resources. Perhaps we have an off-ramp for small facilities.
- What is the division's feedback on the MS4 Report? Information to utilize could include:
    - MS4 report
    - Regulation 85 required monitoring results
- What improvements does the division recommend for the data submission efforts moving forward? Information to utilize could include:
    - Stakeholder feedback
- Assess if possible the magnitude, duration, and frequency of effluent limits are appropriate? Information to utilize could include:
    - seasonal analysis of data
- What can we infer about nonpoint sources? Information to utilize could include:
    - geospatial summary and monitoring data
    - division's trend site data
    - Mass-balance to look for unaccountable sources of nutrients
    - Compare outfall, downstream with flow -> gap analysis to figure out if we have enough flow information
- Will we have enough information to remove cooling towers? Information to utilize could include:
    - Regulation 85 required monitoring data for cooling towers
- Nitrogen deposition or any new information with respect to background concentrations of nutrients?
    - upstream location information
    - landuse
    - Rocky Mountain National Park efforts
    - We should capture this information. There is a website that lists nitrogen deposition studies, etc. This could potentially be and important factor in understanding nitrogen in water.
    - Should we consider natural background N from soils? Brian Bledsoe – P - stream stabilization
    - What about fertilizer application rates?
    - What about groundwater data? This could also provide information about nutrients

Preliminary Predictive Analysis

- Based on data received to date provide magnitude of expected nutrient reductions that will occur and potential changes to instream concentrations when Reg 85 is fully implemented (2025). Information to utilize could include:
    - Colorado State University's Comprehensive, OptimaL and Effective Abatement of Nutrients (CLEAN) center tools NPS loads?
    - CLEAN center mass balance tools?
    - Water Environment Research Foundation (WERF) site-specific nutrient study?

    - Regulation 85 required monitoring results
    - Facility summary information
- Use data to assess interim values? Do we have enough information? Reg. 85 won't determine if Reg. 31 interim standards should be changed (reg 31 based on protecting use – this is not included in Reg. 85).

Nitrate std for 10 mg/L versus 15 mg/L TIN – we are applying TIN numbers that would protect for nitrate levels. Reg. 85 numbers don't include dilution factor. Can only compare in site specific situations.