

Candice, Krista, Jillian, Barbara, Mark Ackerman

EPA Call

11/1/17

Krista → enforcement section chief starting in November

Mark Ackerman - staff replacement for Krista

* Meeting next week.

1) CSW permit for construction at seep collection - EPA Agreed

2) ELG[±], Net zero discharge

1 yr carryover approach

- PCA - annual w/ 1-yr carryover

EPA wants annual average

- EPA disagrees.

xx Check notes - what facility / Alaska did we discuss

• Send name of Alaska facility to EPA

3) Antideg - agree future discharges should be determined in future

- How far downstream? PCA did not consider St. Louis R.

"streams" was used, implies St. Louis R. not considered

- PCA - looked at immediate waters. If no degradation

of immediate waters, then waters downstream not impacted

- EPA doesn't remember [↑] Wants impacts to St. Louis R. or logic of why St. Louis R not mentioned

4) ISW ~~vs~~ General vs Individual

- Recommend stormwater is clearly defined - PCA will rely on ISW Gen.

5) Permit Application (Updated) - Polymet included memo's/additional info based on PCA discussions & feedback from EPA.

- Is App. Full + complete

* EPA wants to make sure all things considered are available to the public

- How will PCA catalog documents & display to public? (Richard)

- Also ~~rely~~ rely on EIS record

* EPA wants us to Identify all documents used to develop permit

- Specifics - not just "rely on EIS" - cite specific references

Form 2D

6) WQBELS

- R.P. analysis included all parameters - No RP to exceed WQS, no WQBEL needed

- Sulfate - Form 2D is not predicting 10.0, they are predicting less than 10

- Operating Limit = 10

- Operating Target = 9

~~and~~ EPA thinks WQBELS are appropriate

Copper
sensitivity of
effluent of
compared to
background
levels

* Set up call for next week

Next call:

7) Discharges via GW pathway - want to know more about monitoring

EPA Call

11-9-17

* Updated monitoring plan - send summary to Krista when finished

Allowable Discharge - Alaska example - Krista

- Alaska has max valve flow limit in permit.
- 2017 permit had identical language as previously issued EPA permit.

Operating Limit - 50y

- EPA wants WRBEL
- RP - EPA could come up w/ RP w/ some of the metals
 - ^{Barbara} For purposes of enforcement + permit shield, new facility.

EPA wants to send letter prior to PN

Wants advance copy ~~to~~ prior to PN for review + comments

PCA will send PN version prior to notice to the public (Rebecca/Am)

EPA wants more than a few weeks prior to PN (2 months)

* Future calls - call both/email ^{Krista} Mark until Thanksgiving

Mark Ackerman
Krista McKim
Kevin Pierard
Scott Ireland

Jillian Roundtree
Candice Bawer
Barbara Wester
Mark Compton

EPA Call

1/31/18

- ** Set up every other week call w/ EPA during PN period.

EPA

(KM)

- RP Analysis - GLI procedures weren't references
- TSD wasn't referenced
- MPCA - procedures to conduct RP analysis

RC - PCA used a qualitative approach. Looked at Treatment being proposed
- Membrane/RO/NF - establish target goal for effluent then design system to meet effluent target.
- System is designed to never exceed 10 mg/l say.

☒

- ** Send EPA background data from pilot study/modeling
(Design + Operation Report)

(KM) Concerned about Hg - was it evaluated in pilot study?

(RC) Pilot testing + modeling showed Hg would be $< 1.3 \text{ ng/l}$ (GLI)

(KM) EPA not comfortable w/ lack of WABELS

(CB?) EPA thinks there should be WABEL even though there is no data/RP.

(KM) Wants to see data reviewed for each parameter listed in the application for parameters believed present.

- PW Manual refers to TSD for situations/procedures to follow when there is no data (GLI, 132)

(KP) Application states constituents that may be present

- Permit shield issue

- Limits provide degree of assurance WQS will be met

- EPA would establish limits - but would remove limits later based on real operating data ^{permits}

RP continued

- KP Application provided info (data) of expected effluent quality
- KM Michigan has issued permits for WRBELF where there is no data
- Concerned about actual discharge quality - will it actually be able to meet effluent limits?/was.
 - What is true ~~eff~~ influent quality
 - A lot of uncertainty in operation
- KP Permittee will be shielded - PCA should establish limits in 1st permit, then remove limits later permits
- Concerned about downstream users (Tribe) Hy.



Revisit RP on next call.

BW Does the RP analysis take into account changes in WR from TB as the facility operates?

PC Pilot looked at short term + long term influent quality

EPA Call

Mine site discharge prohibition

1/31/18

KM How will PCA evaluate compliance w/ discharge prohibition

RC - Engineering controls at mine site

- Monitoring - Comprehensive Monitoring Report

Annual Analyses of monitoring data

KP - Concerned about Mine site. Want to make sure there is no migration of groundwater off the mine site.

RC We have background data from EIS wells we can use to compare sample data

CB Is a measurable increase a violation? How would the narrative be implemented?

RC If data suggests a discharge is possible, adaptive management must be implemented.

KM Concerned if adaptive management is needed a permit mod would not be used for changes.

BW Same concern as KM - wants permits to be modified if adaptive mgmt is needed or if additional work as required by reports. How will this be tracked + enforced?

KP Concern about permit mod being built in w/o going through the modification process.

RC PCA could add language to address EPA concern to state the permit & may be subject to permit modification for requirements that could trigger additional work or adaptive mgmt.

BW Could we build in more language re: modifications of permits. What would trigger a mod.

☐ Concern re: modifications (if needed)

(KM)

ELG² (Allowable Discharge)

- EPA will review again



PCA - Future Call -

Want to talk about communication



Meeting 1.5 hrs / 2 weeks



For Next call - Get Pilot Data to EPA

Mark Ackerman
Candice Bauer
Kirsta McKim
Kevin Picard

Mark Compton
Jillian Roundtree
Barbara Wester

EPA Call

2/13/18

□ Mark Ackerman - send map links (difficult to read)

Mark Ackerman

- Permit has TBEs which are higher than WQS. This could authorize a discharge above WQ.
- RC - No RP. System designed to treat SO₄ to 10 which will treat metals down to WQS.
- MA - Not clear how meeting SO₄ target will meet metal criteria. How is achieving SO₄ meeting WQS for metals.
- RC - System engineered to have membrane pore size to capture the charge + size of various metals ions
- MA - Hg - Pilot study was not conclusive for Hg.
- RC - Influent to WWTs has low concentrations Hg due to terracite tailings removing Hg.
- CB - What about influent from Mine Site?
- RC - Water from mine site goes to WWTP - metals are removed. Effluent from that portion of the WWTs discharges to FTB. Its basically treated 2x
- KM - Have we thought about uncertainty - how well will the treatment system work.
- MA - What was the scale of the Pilot Study in relation to operation? How does this affect potential uncertainty?
- RC - The degree of treatment can manage uncertainty by operating nanofiltration/RO. Its a modular system - easy to add membranes + provide additional treatment if needed
- MA - How quickly can they modify ~~the~~ system
- RC - Company plans to route effluent to TB during start up.

CB What would trigger operational changes?

RC 9 mg/L as operating target. Pre-approved SO₄ Reduction Evaluation Plan

MC What happens if they violate operating limit?

KM There is not a lot of data re: variability in discharge? How does MPCA handle variability?

RC Membrane treatment should not have much variability - you would see trends (as membranes are used). They can adjust RO + NF. Data from Eagle Mine did not show much variability over several years.

□ MA Lime addition - What consideration was given for variability in lime addition - How was AI considered?

RC MPCA will check w/ Engineer + report back next call. Also there will not be a lot of variability in influent.

□ MA How can system be adjusted for large swings in influent concentrations

RC MPCA will check w/ Engineer

KP EPA would establish limits either internal or effluent. Limits are just for TBEL³. It doesn't seem the company would have to adjust operations to meet TBEL³. EPA doesn't trust RO reliability.

RC Operating limit for Cu (Wes).

□ Send Mark Ackerman potential mtg dates ~ 2 wks

Stormwater

- KM What/where is stormwater coverage?
- RC This permit does not cover stormwater / authorize discharge of CSW.
- RC CSW applies until WWTS is operational
- MC How does MPCA distinguish between CSW + mine dewatering.
- KM Concerned about Hg from wetland drainage. How has Hg in wetlands been considered

☐ RC MPCA will look into Hg issue

☐ Look for emails/EPA on wetlands re Hg during dewatering

Cliffs Eric Permits

- RC Will transfer CE-TB permit to PolyMet concurrent w/ PolyMet/Northmet permit along w/ Consent Decree ~ 18 months for attenuation of legacy pollution. Consent Decree will remain.
- KM Area 5?
- KP When will permit transfer occur?
- RC At same time or before permit decision on NM Permit is made
- KP When is trench constructed?
- RC Time to construct + 18 months ~ 36 months
- MC What is the trigger to change permits?
- RC Based on attenuation process ~ 18 months after operation.
- KM Based on PolyMet requesting termination? RC = Yes.

☐ KM Is there a requirement stating when seepage capture system is operational? When is PolyMet allowed to start using the TB? Is this a permit requirement?

- ☐ KP Company should be required to have spare parts on site (pumps, etc...) Also relevant to WWTS. Requirement to keep extra parts on hand.
- RC MPCA will consider

- If we have an operating limit for Cu, the rest of the metals will be treated to WQS. Consider explanation by Scott/Brian. Focus on parameters w/ TBELE - Will need for potential comments

WWTs

KM Hg - how was it analyzed during pilot study?

Treating SO₄ to 10 - how will it treat metals?

- Still wants to see a 'spreadsheet' / quantitative data/analysis

Brain If copper meets standards - the membrane treatment system functions similarly to other metals.

RC Company used P90 - higher flow/concentrations for its analysis.

Brain There is redundancy - if the largest unit is out of service, the remaining units can treat the P90 flow.

Candice If units are OFFline - is there extra monitoring? - No

KM If Hg is being exceeded, are there specific corrective actions?

RC - It is handled by adjusting treatment accordingly. Permit does not have specific actions required for any other parameter than SO₄

☐ Internal discussion on Hg limit for WQS vs TBEL.

☐ Check narrative statement for meeting WQS - exception for TBELS

☐ Copper - operating limit vs TBEL

KM What authority are we applying the operating limits for Cu/SO₄

☐ Barbara - put the state authority to enforce internal controls in the permit
↳ 6.16.2 or 6.16.4 (FC Chapter) - check on this - get back to EPA

KM Is there a requirement for the Permittee to use high quality line manufactured product

RC That was the product chosen in their design

BW Where in the permit would this be required?

☒ RC Consider requirement to use high quality line for stabilization

☐ BW Set limit for Al in the permit - PCA will consider

☐ RC Maybe PCA can consider effluent limits for metals - discuss w/ Jeff
- Not at this time - NO RP.
- Wait until after PN

Cliffs Permit Transfer

* ☐ Will PolyMet ~~not~~ request termination of TB permit?

☐ -- Mike will follow up

BW What portions of CE permits will be taking over by PolyMet?

RC Transfer 54089 to PolyMet

KM SDO26?

Udd

Comments

KP

EPA wants to submit comments - Make clear what EPA concerns are.

Clarify permit conditions

EPA will submit comments during PN period.

KP

EPA will discuss draft comments

* ☒ Set up call early next week - (9 or 11, or 10 Monday)

☐ BW

Does PCA retain authority to do unannounced inspections?

- Permit is standard language 6.16.13

115.04; 115B.17, sub 4
116.091

700i.0150 subp.3(i)

EPA/PCA/Poly Met Meeting

9/25/18

Poly Met - Treatment Technology Presentation

Adaptive Mgmt

- Modular system
- Multiple membrane types (RO + NF)
- Seepage capture can be adjusted - can put more to TB
- Effluent recycle to TB - for short term control of effluent

Mercury Removal

- Filtration through taconite tailings (adsorption)
 - Expected to remove Hg to 1.0 ng/l before treatment
- Greensand filtration - some removal
- Membrane separation - 22-99% membrane rejections have been reported by vendor
 - Eagle Mine uses RO - Influent varies 1-2.5 ng/l → effluent 0.5 ng/l
- EPA concerned about Hg removal from NF - ~~some~~ info for another mine shows
NF removes Hg

RP/Limits Development

- Expected effluent quality shows no RP,
- PCA ~~did~~ not assign limits before actual data is available when the pilot/FEIS data shows < WQS.
- System is designed to treat for 10 ng/l SO₄
 - Operating target 9 ng/l to consider operational issues of RO

Antibacksliding

- EPA ~~thinks~~ you can remove limits in later permits if there is no RP on actual data.
 - * Cannot provide a specific actual example though.

Permit Enforceability (EPA)

- Permit as a shield
- How are items reports, etc in the ~~report~~^{permit} acted upon
- If conditions change, reports are required.
 - Reports become part of the permit etc.
 - How is there accountability? How do you know what is enforceable?
 - What is the process to make sure permit captures when plans/report get folded into the permit?
- Adaptive mgmt is going to be evaluated for permit mod.
- Discuss corrective actions 9/26 mtg.
- EPA - how will PCA handle corrective actions?

Example 6.10.73 - not clear (last PP)

"Failure to implement ... is a violation of a permit"

- Maybe add something like this?

EPA

- Lack of general prohibition - no narrative prohibiting the permittee from violating WQS.

6.16.4 - Cites TBELS

- Remove "except according to code"

Tables - TBEL^s are higher than WQS

Add - How do TBEL^s work for Fact Sheet

- Clarify intent of TBEL^s - make sure it doesn't contradict WQS.

EPA/MPCA

9/25/18

~~permitted under (discretionary)~~

Enforceability of Internal Operating Limit.

- EPA can only enforce EOL.
- MPCA disagrees
- Case law has not shown EPA can enforce internal operating limit. (Wester)

EPA - Potential Permits where limits were removed? (Antibacksliding issue)

Ohio

Powerplants

Permit mod rationale?

MMP - There are things w/in the internal process
they could do to reduce Hg

Backsliding - what does Mn Rules say?
Federal rules?

Domestic limits at SD001 - add lang. to Fact Sheet

Get better maps.

See General ISW CSW for violation of WQS language

EPA - ~~has~~ Reopener language. Is it specific to WQTS?

PCA - has standard boilerplate

✓ ☐ Reopener language - update language for reopener?

Is there a mechanism for citizen to open permit?

They can sue for violation of WQS.

Is the permit a shield if there is no prohibition to exceed WQS?

✓ ☐ Consider - prohibition on violation of WQS.

General Permits have this general prohibition of WQS

Does Federal Law allow for enforcement of Operating limit?

EPA does not think they can enforce operating limit.

Adding prohibition on violating WQS helps this issue.

✓ ☐ "Build what you say" - Any requests for changes made after permit is issued is subject to permit mod. Add more or clarifying language. (for changes made during construction)

(EPA)

Wisconsin - has limits w/ "language to drop" if the limits are being met the permittee can petition to drop limits.

- EPA is also concerned about timely reissuance.

- Wisconsin or other state can ~~also~~ drop limits based on data

- ✓ ☐ EPA - Would PCA consider operating limits for Metals?

Look at where influent is higher than WAS.

(As, Co, Cu, Pb, Ni, Hardness, SO₄) - Also Hg (EPA concern)

Surface water monitoring - is there conductivity in streams/tributaries?

Yes - either through permit or Consent Decree

- At the site there are not a lot of tributaries - use Partridge R.

- ~~Partridge~~ Englewood corridor - has tributary monitoring.

For PolyMet: Operational limits - metals + Hg

WQS language

p. 32

- ✓ ☐ Look at permit re-opener language

For EPA:

- Permit + Fact Sheet - mid Oct (pre-proposed) - 45 day review
- Response to Comments - later w/ Proposed Permit - 15 day review
- Send comments as they are finished

Allowable Discharge

- Actual difference (precip - evaporation) + carryover year

- EIS projected 1.9 billion Alaska approach 4 billion

Consider adding flow limit/volume limit calculated on Alaska approach in addition to carry-over language in draft permit.

- Add narrative for volume, don't include in L & M tables

^ ☐
p. 40

Added volume limit
language to
Fact Sheet

Adaptive Management

- ✓ □ - Clarify - "adjust as you go to prevent violations."
- Make more clear this is not in response to violation, but to prevent

Stormwater

- Concern about pent release
- What kind of monitoring will be done to make sure they are complying w/ "don't violate wqs." provision?
- Pent rule - has several basins to control Hg
 - CSU - how do SWPPS include monitoring
 - Should SWPPP include requirement of temporary basins
- Hg controlled w/ solids
- EPA wants to consider monitoring - through 401 cert?
- Map showing acreages + where things are covered
- SWPPS are very detailed - Can the Hg concern be addressed by the SWPPS + make it part of 401 cert?
- Concerned about 401A2 - need something in 401 cert for potential downstream impacts
- Need to show how to monitor or control downstream Hg impacts (401A2 concern)

Allowable Discharge

- - PCA will consider volume statement in permit text
p. 40

Operating Limits

- p. 46 - Jeff will call EPA re: additional operating limits

- Monthly avg of weekly samples
 - Operating Limit
 - ← Get this limit type into Tempo.
 - Moving avg

No sulfate can be added - did we make other prohibitions?

- ~~Stormwater~~ Stormwater - will be covered under General Permits
- SWPPP have been submitted for ISW
 - Saturated soils - water will be pumped to WWTs area (TB)
 - ↓
 - OSLA - includes ponds

WQBELS - EPA will focus review on proposed language re: WQBELS

~~45-day~~ 45-day review followed by 15-day review.

- Set up check in 2-weeks after they receive pre-proposed ~~to~~ permit
- Mark Ackerman - lead reviewer