

MEMORANDUM TO FILE

TO: KMCC File

FROM: Brian Rakvica

DATE: December 10, 2003

CC: Jim Najima, Todd Croft, Jennifer Carr, Jeff Johnson
Jon Palm, Darrell Rasner, Nadir Sous, Tamara Pelham

RE: KMCC Quarterly Perchlorate Meeting

1. Agenda distributed.
2. Introduction of parties. Attendance list copied and provided to all.
3. Several figures were distributed by NDEP, USEPA and KMCC.
4. Update on Systems
 - a. Plant-site collection continues and is discharged to GW-11.
 - b. Capture continues at the Athens Road well field (ARW) and Seep.
 - c. Seep concentration is currently ~30 ppm (average influent to Wash IX).
 - d. Current total discharge is 1,060 gpm (not including flows to GW-11).
 - e. FBR construction continues.
 - i. Engineering is ~100% complete
 - ii. Procurement is ~100% complete
 - iii. Construction was ~75% as of 11/30/03
 - f. Noted that the new FBR will have a higher influent concentration than any such system on-line. This is why a two-stage system is designed.
 - g. FBR should destroy all nitrate, chlorate and perchlorate to ND (20 ppb).
 - h. Construction schedule
 - i. Fill reactors with sand
 - ii. Inoculate system with biological media next week. Add lake water, nitrate and ethanol to condition the sand. Condition from 12/19/03-1/5/04. No discharge from reactors.
 - iii. Early January – Accept remaining units. Begin batch treatment mode to grow biomass. This water is slated to be discharged if effluent quality is acceptable.
 - iv. Late January/Early February – Initiate continuous operation starting at 200 gpm and increasing.
 - v. End of February – expect to be at full flow rate and meeting current NPDES. Working effluent concentration down towards ND.
 - vi. March – April 23, 2004 – demonstration mode.
5. Discussion of NPDES permit.
 - a. The original NPDES permit was put in place at 847 gpm.
 - b. New temporary permit was issued that in conjunction with the NPDES permit allows for discharge to the Las Vegas Wash at 1,100 gpm.

- c. Application has been submitted for a new permanent NPDES permit. The NPDES should accommodate up to 1,000 gpm discharge and should be effective by early March 2004 when the current temporary discharge permit expires.
 - i. Will be handled as a major modification.
 - ii. Modification to be for an increase in flow rate only.
 - iii. 30- day public comment period.
 - iv. Depending on public comment, hope to have in place by early February.
 - v. Noted that flow rate is still in discussion with KMCC, NDEP and USEPA.
 - vi. Limits on flow rate include: phosphorous load, 1,000 gpm equipment and 1,000 gpm pipeline.
 - d. Noted that the new discharge concentration for perchlorate will be decided once the system is up and fully operational.
6. Discussion of detection limits and discharge limits.
- a. NDEP goal is 4-18 ppb.
 - b. Discussed Texas Tech method for low detection limits in a high saline environment.
 - c. Discussed possibility of using alternate methods during the 2004 year to verify their applicability.
 - d. SNWA noted that they can provide some method information to KMCC.
 - e. KMCC will discuss alternate methods with their laboratory.
 - f. KMCC noted that they might have to perform two analyses. One would be the approved method and the other would be the lower detection limit method.
 - g. USEPA discussed the procedure for approval of alternate methods.
 - h. Discussed interferences with p-CBS. KMCC noted that they had found no such interferences to date.
 - i. Noted that if the effluent concentration was to be reduced in the future it would be a minor modification.
7. Discussion of capture.
- a. This discussion is in response to the 11/19/03 NDEP letter.
 - b. KMCC's response will be documented in their January 2004 quarterly report.
 - c. A new cross section at the Athens Road well field area was presented. This cross section showed that the area between ART-4 and ART-5 is dry and there is now a "Muddy Creek Island". Noted that ART-5 is on the verge of going dry as well.
 - d. Presented a new Net Drawdown map with 2' contours. Noted that a 1-2" drawdown is affected over a 2000' wide section of Athens Road.
 - e. Reviewed the Hackenberry model. KMCC stated that the Hackenberry model was based on limited data (what was currently available). KMCC has refined this model to represent a larger data set. KMCC states that this indicates that nearly 100% capture is being achieved at the ARW. The

comparison for mass flow and groundwater flow will be presented in the January 2004 report.

- f. KMCC noted that there may be the possibility to install a well east of ART-7. KMCC will investigate concentrations in that area.
 - g. Schedule to be submitted to NDEP to comply with requested schedule.
 - h. NDEP noted the importance of getting and documenting at least 90% capture at the ARW.
 - i. Discussed well loss. KMCC has been trying to clean these wells and has been using the backup buddy wells.
8. Discussed Seep Area shut off criteria.
- a. Noted that outer wells that are not good producers could be shut off if capture could be increased elsewhere.
 - b. NDEP and USEPA stressed that no increase should be seen in mass load to the LV Wash.
 - c. KMCC noted that Seep Area water will always be used at least to dilute the high TDS water that is coming from the plant site.
 - d. KMCC will draft a formal proposal and respond to NDEP.
9. Discussed apparent leveling off at Northshore Road.
- a. KMCC presented a graph of the data versus the 90% removal curve from Hackenberry. KMCC had removed the log-log scale from the graph. The data appeared to be tracking reasonably well.
10. Discussion of MWD model and other California issues.
- a. Noted that the MWD model assumes the 90% removal efficiency at the ARW.
 - b. Noted that the California public health goal and MCL schedule appears to be delayed.
11. Other
- a. Personnel from the Central Arizona Project and DWR will be visiting this week for site tours related to the perchlorate project.
 - b. Nevada DWR personnel may want to visit in March 2004.
 - c. USEPA distributed a mass loading graph and noted that the next EPA report will be issued in mid-January.
 - d. Noted that Ed Krisch will retire in April.