

**Monzeglio, Hope, NMENV**

**From:** Chavez, Carl J, EMNRD  
**Sent:** Wednesday, May 17, 2006 10:06 AM  
**To:** Jim Lieb  
**Cc:** Ed Riege; Cote Edward L.; Steve Morris; Price, Wayne, EMNRD; Foust, Denny, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV  
**Subject:** RE: DOUR vs. BOD5 Sampling & Analyses

Jim:

I can see its use for BOD loading, but phenol deals with the treatment system capacity to knock out organic chemicals, which is a different treatment system efficiency monitoring issue. Please setup a conference call (probably T - TH in the am) and HWB/OCD + District Office can discuss. Thnx.

Carl J. Chavez, CHMM  
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 (Pollution Prevention Guidance is under "Publications")

**From:** Jim Lieb [mailto:jl Lieb@giant.com]  
**Sent:** Wednesday, May 17, 2006 9:59 AM  
**To:** Chavez, Carl J, EMNRD  
**Cc:** Ed Riege; Cote Edward L.; Steve Morris; Price, Wayne, EMNRD; Foust, Denny, EMNRD; Cobrain, Dave, NMENV; Monzeglio, Hope, NMENV  
**Subject:** RE: DOUR vs. BOD5 Sampling & Analyses  
**Importance:** High

Carl:

You are correct. It was only our intention to use the YSI DOUR instrument for the measurements for the study, not to replace the current BOD5 monitoring requirement. The instrument is a good method to establish the operating parameters for the treatment system. Once we have established the current systems treatment capacity, we can respond quickly as might be necessary to improve treatment capacity. HR&C is knowledgeable regarding methods to enhance aeration lagoons treatment capacity so they will be valuable in the event the study shows our system needs improvement in treatment of BOD5 and in the phenol that OCD and NMED HWB would like to see.

I am confirming with HR&C regarding the BOD Analyst TM software. In the meantime, I have initiated purchase requisitions for the YSI instrument and for HR&C's engineering assistance with the study.

I will check with HR&C (Ed Cote) regarding scheduling a conference call with OCD to discuss this further.

Regards,

Jim Lieb

**From:** Chavez, Carl J, EMNRD [mailto:CarlJ.Chavez@state.nm.us]  
**Sent:** Wednesday, May 17, 2006 7:40 AM  
**To:** jl Lieb@giant.com; Ed Riege; Steve Morris; Johnny Sanchez  
**Cc:** Price, Wayne, EMNRD; Cobrain, Dave, NMENV; Foust, Denny, EMNRD; Monzeglio, Hope, NMENV

5/17/2006

**Subject:** DOUR vs. BOD5 Sampling & Analyses

Jim:

Good morning. I have completed my preliminary review of your request to basically replace BOD5 analytical with the DOUR (dissolved oxygen uptake rate) meter in lagoons and ponds. I am copying the HWB and District Staff in this message to see if they have any input or agree with my conclusions. I do not think that Giant is requesting to eliminate BOD5 analytical monitoring in this request, but would like to use the DOUR in the regular monitoring of its treatment system aeration lagoons and ponds to establish treatment system BOD loading capacity limits on a regular basis for its treatment system right? The DOUR seems essential to your treatment system study that is scheduled to be implemented after the turn-around at the refinery.

The HRC letter dated May 4, 2006 indicates that the 1986 original design calculations for BOD loading to Giant Ciniza's treatment system (OCD reviewed the document) were based on assumptions from literature values for biological rate constants. The DOUR will allow Giant- Ciniza to develop site-specific biological rate constants on a regular basis that may be used in calculations of BOD loading capacity and for monitoring to show the treatment system is operating within its treatment capacity.

The OCD encourages the use of the DOUR to accomplish monitoring to determine if the BOD loading is within Giant's treatment system's capacity. BOD is currently monitored on a quarterly basis at the pilot plant effluent. The OCD has required BOD and COD monitoring at EP1-EP2 on a weekly basis in order to get a handle on the treatment system capacity and impacts of hazardous waste to the ponds. The OCD had also mentioned Phenol (total) monitoring to assess % reduction from AL-1 and AL-2 to determine the efficiency of the treatment system. The OCD/HWB would like to see a minimum 80% reduction in phenol from the influent to AL1 to the effluent of AL2 to monitor the efficiency of the actual treatment system.

In conclusion, the DOUR does not appear to be a test to replace BOD monitoring, but to help determine the BOD loading capacity based on site-specific biological rate constant readings from the YSI Instrument or DOUR meter. The YSI seems to include BOD Analyst TM software to assist with BOD calculations, but this may not be a standard feature. Is the YSI capable of generating BOD values using the extra software? If not, the meter will assist Giant in developing real-time biological rate constants that can be used to establish real-time BOD loading to Giant's treatment system. If the YSI is capable of generating real-time BOD data, then the OCD may be amenable to considering the replacement of BOD analytical lab monitoring with the YSI BOD readings, IF Giant can confirm other treatment systems that have been allowed to replace the standard laboratory BOD5 with the YSI instrument.

I hope this helps. Please contact me to discuss and depending on other input, we may want to schedule a conference call with HRC. Thank you.

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