From: Brian.English@deq.idaho.gov
To: Valdez, Heather; kwright@sbtribes.com
Subject: FW: RCRA Pond UAO Weekly Report #302 - May 16 to 22, 2016
Date: Thursday, May 26, 2016 10:17:18 AM

This answers Kelly's questions but not mine. I want to hear why no alarm sounded – specifically had this unit been hooked up to the autodial system? It is "new" to this location. This happened but how will they prevent a repeat?

From: Rob Hartman [mailto:Rob.J.Hartman@mwhglobal.com]
Sent: Wednesday, May 25, 2016 6:42 PM
To: Valdez.Heather@epa.gov
Cc: 'Kelly Wright'; 'susanh@ida.net'; Brian English; Al Lam; Mark Smith; Vannoy, Jim A. - CO 6th; Williams, Jonathan; Marguerite Carpenter; Gary Resh; rachel.greengas@fmc.com; Ross, Carrie; Greg Weigel
Subject: RCRA Pond UAO Weekly Report #302 - May 16 to 22, 2016

FMC is providing a weekly report, pursuant to the RCRA Pond UAO, describing field activities conducted pursuant to EPA-approved work plans.

WEEKLY

Work Performed this week:

- Continued implementation of the Pond 15S RIWP and continued operation of one GES unit extracting from the southwest standpipe, one GES unit extracting from the east standpipe and one GES unit extracting from the new northwest standpipe (for a total of three GES units operating at Pond 15S) on an 80-hour per week schedule.
  PH3 sources gas concentrations for the past week:
  - SW standpipe - 142 ppm
  - NW standpipe - 96 ppm
  - East standpipe - 64 ppm
- Pursuant to EPA's 4/25/16 email directing FMC to commence gas extraction and treatment at Pond 16S and the Pond 16S RIWP, continued operation of one GES unit extracting from the north standpipe and one unit extracting on the east standpipe at Pond 16S on an 80-hour per week schedule.
  PH3 sources gas concentrations for the past week:
  - North standpipe – 7,217 ppm
  - East standpipe – 5,979 ppm
- Continued continuous monitoring at four 15S boundary monitoring locations and began monitoring at two boundary locations at Pond 16S during periods of gas extraction. There were no TWA or maximum values above the thresholds specified in the Air Monitoring Plan. A spreadsheet summarizing the results of this monitoring to date is attached.
- In addition to continuous monitoring, monitoring performed pursuant to the approved work plans:
  - Pond 18A – Quarterly perimeter standpipe monitoring

- Continued to compile information for Pond 15S NW Standpipe Replacement project construction completion report.

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Problems Encountered:

None.

Unplanned Events Encountered:

None.

Work to be performed the following week:

- Continue implementation of the Pond 15S RIWP and 80-hour per week operation of one GES unit extracting from the southwest standpipe, one GES unit extracting from the east standpipe and one GES unit extracting from the new northwest standpipe (for a total of five GES units operating at Pond 15S).
- Continue operation of one GES unit extracting from the north standpipe and one unit extracting on the east standpipe at Pond 16S on an 80-hour per week schedule.
- Continue continuous monitoring at four 15S boundary monitoring locations and two Pond 16S boundary monitoring locations during periods of gas extraction.
- Other than continuous monitoring, no monitoring is planned or required pursuant to the approved work plans.
- Continue compiling information for Pond 15S NW Standpipe Replacement project construction completion report.

Carbon Drum Overheating During Power Outage

As a follow up to Kelly Wright's questions on the recent power outage and overheated GES carbon unit, FMC is providing a summary of information regarding FMC's experience in the past and basic information on the GES carbon units. FMC has experienced overheated carbon drums in the past and understands how to safely manage these circumstances. The Calgon Centaur activated carbon used in the GES treatment drums catalytically adsorbs and oxidizes PH3 to non-toxic, strongly adsorbed phosphorus compounds. The catalytic oxidation reaction is exothermic which causes the drums to heat up during gas extraction and treatment. During normal operations, the temperature of the drums is controlled by (1) keeping the inlet PH3 concentration at 300 ppm or lower with dilution air and (2) running the air blower 24-hours a day (even when not extracting from the pond) to maintain cooling air flow through the drums. In addition, the GES systems have 2 temperature interlocks to manage potential high drum temperatures. When the exit temperature from the first drum (TI-4) reaches 225°F, the high temperature interlock will close solenoid valve (SV-1) shutting down the source gas extraction from the perimeter gas collection pipe and put the system on fresh air purge. An alarm will also indicate operator attention is required. If the exit temperature from the first drum (TI-4) or the second drum (TI-5) reaches 250°F, the high-high temperature interlock will close the source gas solenoid valve SV-1 and the vacuum pump will automatically shut-down thus stopping gas extraction from the standpipe (or extraction manifold). The nitrogen purge

solenoid valve (SV-2) will open automatically and flush the system for approximately 10 minutes with nitrogen to suppress any reaction and purge any residual PH3 from the system.

During power outages, the heat of the catalytic oxidation can continue to build within the drum to temperatures that can ignite the carbon and when power and air flow are restored the air (oxygen) stokes ignition of the carbon just like blowing on embers in a charcoal barbeque. KW has not observed that the age of the carbon has any relationship to the potential for overheating during power outages. The carbon from the overheated drums is managed in the same way as spent carbon. The carbon is placed in a roll-off bin and spread to allow the carbon to cool and then consolidated for shipment offsite. There are no PH3 emissions from the overheated or spent carbon because the PH3 has been adsorbed and oxidized to phosphorus compounds on the carbon surface.