

AY-102-Retrieval Update

Week Ending December 27, 2016

Gallons retrieved to date: Approximately 135,000 gallons of sludge.

Percentage complete: Approximately 90% of original sludge volume.

Short narrative: Retrieval operations in AY-102 resumed periodically on nights and weekends from 12/14/16 through 12/27/16. Typically, retrieval operations would begin between 10:00 pm and midnight and then shut down around 4:00 am to allow post-transfer industrial hygiene and radiological monitoring to be completed for down-posting of the Respiratory Protection Zone and Authorized Access Areas in preparation for the arrival of dayshift personnel. However, harsh weather conditions (e.g., snow accumulations, plummeting temperatures, Hanford Site closure) hampered operations and resulted in a loss of eight operating shifts. Nevertheless, during this period, successful waste retrieval operations reduced the total remaining waste volume in AY-102 from approximately 53,000 gallons to approximately 20,700 gallons. This volume represents total waste, including solids and liquids in both the primary tank and annulus and equates to 97% retrieval completion from the total starting waste volume. Also, during this period, the annulus waste level remained stable and did not warrant operations of the annulus pump.

IH sampling results:

NOTE: Sample results represent the highest value obtained during the retrieval period December 21-27, 2016. Final review and verification of sample results are in progress.

| Dec. 21-27, 2016 | NH3 | VOC | Hg |
|---------------------------------|------------------|-------|---------|
| AreaRAE PEAK | 0 ppm | 0 ppm | N/A |
| AreaRAE/Supplemental Zone FINAL | 0 ppm | 0 ppm | N/A |
| Transfer line walk down | 0 ppm | 0 ppm | 9 ng/m3 |
| 702 AZ Stack | 35 ppm | N/A | N/A |
| Time of peak | 12/22 @ 0230 hrs | | |
| AP Stack | *190 ppm | N/A | N/A |
| Time of peak | 12/22 @ 0500 hrs | | |

*On 12/22/16 at 5:00 am (0500 hrs), during retrieval operations, the ammonia (NH3) reading at the 241-AP Primary Ventilation stack peaked at 190 ppm. This exceeded the ammonia limit (i.e., 175 ppm ammonia for AP Primary Ventilation during AY-102 Retrieval), requiring notification to the Department

of Ecology. Retrieval operations were secured and within an hour the ammonia level had decreased to 100 ppm. Ecology was notified and retrieval operations resumed at 7:36 am. This decreasing ammonia concentration trend continued throughout the weekend and by 12/27/16 the ammonia reading was approximately 50 ppm. The ammonia cumulative emission, for the AP Primary Ventilation, did not exceed the time weighted average emissions limit.

Action Limits:

- *NH₃: 12 ppm*
- *VOCs: 2 ppm*
- *Hg: 12,500 ng/m³*

Source Limits:

- *702AZ: NH₃: 285 ppm*
- *AP: NH₃: 175 ppm*