

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

Cc: Nevada Division of Environmental Protection

From: David Bohmann and Bounkheana Chhun

Date: July 24, 2020

Subject: AP-5 Solids Dewatering and Disposal Monthly Progress Report Summary –
June and July 2020
Nevada Environmental Response Trust Site; Henderson, Nevada

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this summary of the AP-5 solids dewatering and disposal activities performed during June and the beginning of July 2020.

Treatment, dewatering, and disposal of the AP-5 Pond solids has been completed. This will be the final monthly progress report submitted for this project.

SUMMARY OF DEWATERING AND DISPOSAL ACTIVITIES

Tetra Tech mobilized and completed solids dewatering infrastructure construction and testing in February 2020. Solids recovery and recirculation activities began on February 25, 2020. Solids removal and dewatering from Process Tanks T-201, T-202, and T-203 were completed on March 23, 2020, April 10, 2020, and April 29, 2020, respectively. Transfer of the remaining filtrate water was completed on June 30, 2020, which is the final step in treatment of the contents from the AP-5 Pond. A thin layer of fine sediment was removed from the bottom of T-201 at the beginning of July, followed by triple rinsing of tanks T-201 and T-204. Treatment of the rinse water through the FRBs was completed on July 14, 2020.

As part of the solids recovery and dewatering process, approximately 198,292 gallons of water was transferred from the Process Tanks to the Day Tank in June 2020. A summary of daily AP-5 water volumes that were transferred from the Process Tanks to the Day Tank in June 2020 is provided in the attached Table 1.

ROUTINE INSPECTIONS

Limited routine inspections were conducted in June 2020. Inspections are intended to proactively identify potential issues or concerns with key infrastructure, identify and perform routine maintenance tasks, and confirm process equipment is ready for service. During the inspections, Tetra Tech staff visually inspected the Process Tanks, Day Tank, piping, secondary containment, and the liner system for damage and leaks; and recorded findings on the inspection forms. Inspections, testing, and maintenance of the dilution lines, transfer lines, and Receiving Tank

are under the responsibility of ETI as of July 17, 2017. Copies of routine inspection forms are provided in Attachment A. Summaries of the primary inspection activities are included below.

Process Piping

The piping within the AP-5 Process Area secondary containment area was inspected on a routine basis. The findings of the inspections are provided below:

- No visible damage to, or leaks from, the AP-5 process piping were observed.

Secondary Containment

The AP-5 Process Area secondary containment liner was inspected by 360-degree perimeter inspections on a routine basis. The findings of the inspections are provided below:

- No damage to the secondary containment liner was observed.
- There was no stormwater accumulated on the secondary containment liner in June 2020.

Tanks and Equipment

Process Tank T-201 and Day Tank T-204 were inspected on a routine basis in June 2020. The findings of the inspections are provided below:

- No visible damage to, or leaks from, Process Tanks or the Day Tank were observed.
- Precipitate on the interior sides of the Process Tank T-201 was routinely washed down.
- Process Tanks T-201, T-202, and T-203 have been taken out of service.

MONTHLY INSPECTION

Monthly inspections are conducted to provide a more thorough investigation of major equipment and parts and to confirm functionality of key control and interlock components. The monthly inspection form is provided in Attachment B. A summary of the findings is provided below:

- Spare parts for operation of the AP-5 treatment system were present and stored on site.
- The final air operated double diaphragm pump was tested and found to be in good working order.
- High-high level alarms for the Day Tank were tested. All of the level sensors were observed to be functional at the time of the testing.

CERTIFICATION

AP-5 Solids Dewatering and Disposal Monthly Progress Report June 2020


Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada

Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Signature:  _____, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Not Individually, but Solely
as President of the Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: 7/24/2020

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided: Prepared AP-5 Solids Dewatering and Disposal Monthly Progress Report Summary for June 2020.



Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

July 24, 2020

Date

Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2020

Table

Table 1. June Monthly AP-5 Water Transfer Records

Date	T-201 (Gallons)	T-202 (Gallons)	T-203 (Gallons)	Daily Total (Gallons)
6/1/2020	-	-	-	-
6/2/2020	-	-	-	-
6/3/2020	17,239	-	-	17,239
6/4/2020	-	-	-	-
6/5/2020	-	-	-	-
6/6/2020	25,146	-	-	25,146
6/7/2020	-	-	-	-
6/8/2020	-	-	-	-
6/9/2020	20,829	-	-	20,829
6/10/2020	-	-	-	-
6/11/2020	-	-	-	-
6/12/2020	-	-	-	-
6/13/2020	21,737	-	-	21,737
6/14/2020	-	-	-	-
6/15/2020	-	-	-	-
6/16/2020	-	-	-	-
6/17/2020	26,592	-	-	26,592
6/18/2020	-	-	-	-
6/19/2020	-	-	-	-
6/20/2020	18,324	-	-	18,324
6/21/2020	-	-	-	-
6/22/2020	-	-	-	-
6/23/2020	22,342	-	-	22,342
6/24/2020	-	-	-	-
6/25/2020	-	-	-	-
6/26/2020	27,623	-	-	27,623
6/27/2020	-	-	-	-
6/28/2020	-	-	-	-
6/29/2020	-	-	-	-
6/30/2020	18,460	-	-	18,460
Total	198,292	-	-	198,292

1 - Water transfer volumes presented are from the Process Tanks to the Day Tank, and are based on the starting and ending volumes in the Day Tank during the transfer process, plus the volume that was transferred by ETI to the Receiving Tank during these operations.

Attachment A
Phase IVa Part 2 Routine Inspection Forms

K05 PHASE IVa PART 2 - ROUTINE INSPECTION FORM

Date: 6/1/2020

Time: 0701

Inspector Initials: RSJ

PROCESS PIPING INSPECTION

1. Observe piping between Process Tank secondary containment and FBR secondary containment.

Any leaks, punctures, damage, bulges visible? Yes* No

2. Observe piping in Process Tank secondary containment area.

Any leaks, punctures, damage, bulges visible? Yes* No

3. Record reading on Stabilized Lake Mead Water (SLMW) flowmeter east of Process Tanks.

Flowmeter: 5,814,510 (gallons)

SECONDARY CONTAINMENT INSPECTION

4. Perform 360 perimeter walk to observe liner system for potential wear and tear.

Any leaks, punctures, or other damage visible? Yes No

5. Is there storm water accumulation greater than 1 foot?

Yes No

If Yes, pump storm water into one of the Process Tanks.

6. Is there storm water accumulation in equipment pad sumps?:

Yes No

If Yes, pump storm water into one of the Process Tanks.

PROCESS TANKS AND DAY TANK INSPECTION

7. Perform 360 degree walk around of each tank to inspect for damage or leaks and lock out of valves:

	T-201		T-202		T-203		T-204	
Visible damage or leaks/stains? (inspect all welds and nozzles/valves)	Yes*	<u>No</u>	<u>Yes</u>	<u>NA</u>	Yes*	<u>No</u>	Yes*	<u>No</u>
All decant valves and transfer valves locked out?***	<u>Yes</u>	No*	Yes	<u>NA</u>	Yes	<u>NA</u> *	NA	NA
Are transfer pumps ready for service?	NA	NA	NA	NA	NA	NA	NA	NA

8. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
Visible oil leaks from gear box?	Yes*	<u>NA</u>	Yes*	<u>NA</u>	Yes*	<u>NA</u>
Has routine wash down of precipitate/crystals on tank sides and mixer impeller been completed?	<u>Yes</u>	No	Yes	<u>NA</u>	Yes	<u>NA</u>
Mixer off as part of sediment washing process? If Yes, draw an "X" through answers to next question.	NA	NA	NA	NA	NA	NA
Mixer running and turbulence/vortex observed?***	NA	NA	NA	NA	NA	NA

K05 PHASE IVa PART 2 - ROUTINE INSPECTION FORM

Date: 6/8/2020

Time: 0745

Inspector Initials: KGH

PROCESS PIPING INSPECTION

1. Observe piping between Process Tank secondary containment and FBR secondary containment.
Any leaks, punctures, damage, bulges visible? Yes* No
2. Observe piping in Process Tank secondary containment area.
Any leaks, punctures, damage, bulges visible? Yes* No
3. Record reading on Stabilized Lake Mead Water (SLMW) flowmeter east of Process Tanks.
Flowmeter: 5,825,070 (gallons)

SECONDARY CONTAINMENT INSPECTION

4. Perform 360 perimeter walk to observe liner system for potential wear and tear.
Any leaks, punctures, or other damage visible? Yes No
5. Is there storm water accumulation greater than 1 foot? Yes No
If Yes, pump storm water into one of the Process Tanks.
6. Is there storm water accumulation in equipment pad sumps?: Yes No
If Yes, pump storm water into one of the Process Tanks.

PROCESS TANKS AND DAY TANK INSPECTION

7. Perform 360 degree walk around of each tank to inspect for damage or leaks and lock out of valves:

	T-201		T-202		T-203		T-204	
Visible damage or leaks/stains? (inspect all welds and nozzles/valves)	Yes*	<input checked="" type="radio"/> No	<input checked="" type="radio"/> Yes	No	Yes	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
All decant valves and transfer valves locked out? **	<input checked="" type="radio"/> Yes	No*	Yes	<input checked="" type="radio"/> No*	Yes	<input checked="" type="radio"/> No*	NA	NA
Are transfer pumps ready for service?	NA	NA	NA	NA	NA	NA	NA	NA

8. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
Visible oil leaks from gear box?	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
Has routine wash down of precipitate/crystals on tank sides and mixer impeller been completed?	<input checked="" type="radio"/> Yes	No	Yes	<input checked="" type="radio"/> No	Yes	<input checked="" type="radio"/> No
Mixer off as part of sediment washing process? If Yes, draw an "X" through answers to next question.	NA	NA	NA	NA	NA	NA
Mixer running and turbulence/vortex observed? **	NA	NA	NA	NA	NA	NA

K05 PHASE IVa PART 2 - ROUTINE INSPECTION FORM

Date: 6/15/2020

Time: 1030

Inspector Initials: KGH

PROCESS PIPING INSPECTION

1. Observe piping between Process Tank secondary containment and FBR secondary containment.
Any leaks, punctures, damage, bulges visible? Yes* No
2. Observe piping in Process Tank secondary containment area.
Any leaks, punctures, damage, bulges visible? Yes* No
3. Record reading on Stabilized Lake Mead Water (SLMW) flowmeter east of Process Tanks.
Flowmeter: 5,843,690 (gallons)

SECONDARY CONTAINMENT INSPECTION

4. Perform 360 perimeter walk to observe liner system for potential wear and tear.
Any leaks, punctures, or other damage visible? Yes No
5. Is there storm water accumulation greater than 1 foot? Yes No
If Yes, pump storm water into one of the Process Tanks.
6. Is there storm water accumulation in equipment pad sumps?: Yes No
If Yes, pump storm water into one of the Process Tanks.

PROCESS TANKS AND DAY TANK INSPECTION

7. Perform 360 degree walk around of each tank to inspect for damage or leaks and lock out of valves:

	T-201		T-202		T-203		T-204	
Visible damage or leaks/stains? (inspect all welds and nozzles/valves)	Yes*	<input checked="" type="radio"/> No	<input checked="" type="radio"/> Yes*	No	Yes	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
All decant valves and transfer valves locked out?*	<input checked="" type="radio"/> Yes	No*	Yes	<input checked="" type="radio"/> No*	Yes	<input checked="" type="radio"/> No*	NA	NA
Are transfer pumps ready for service?	NA	NA	NA	NA	NA	NA	NA	NA

8. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
Visible oil leaks from gear box?	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
Has routine wash down of precipitate/crystals on tank sides and mixer impeller been completed?	<input checked="" type="radio"/> Yes	No	Yes	<input checked="" type="radio"/> No	Yes	<input checked="" type="radio"/> No
Mixer off as part of sediment washing process? If Yes, draw an "X" through answers to next question.	NA	NA	NA	NA	NA	NA
Mixer running and turbulence/vortex observed?*	NA	NA	NA	NA	NA	NA

K05 PHASE IVa PART 2 - ROUTINE INSPECTION FORM

Date: 6/22/2020

Time: 1430

Inspector Initials: KGH

PROCESS PIPING INSPECTION

1. Observe piping between Process Tank secondary containment and FBR secondary containment.

Any leaks, punctures, damage, bulges visible? Yes* No

2. Observe piping in Process Tank secondary containment area.

Any leaks, punctures, damage, bulges visible? Yes* No

3. Record reading on Stabilized Lake Mead Water (SLMW) flowmeter east of Process Tanks.

Flowmeter: 5,858,690 (gallons)

SECONDARY CONTAINMENT INSPECTION

4. Perform 360 perimeter walk to observe liner system for potential wear and tear.

Any leaks, punctures, or other damage visible? Yes No

5. Is there storm water accumulation greater than 1 foot?

Yes No

If Yes, pump storm water into one of the Process Tanks.

6. Is there storm water accumulation in equipment pad sumps?:

Yes No

If Yes, pump storm water into one of the Process Tanks.

PROCESS TANKS AND DAY TANK INSPECTION

7. Perform 360 degree walk around of each tank to inspect for damage or leaks and lock out of valves:

	T-201		T-202		T-203		T-204	
Visible damage or leaks/stains? (inspect all welds and nozzles/valves)	Yes*	<input checked="" type="radio"/> No	<input checked="" type="radio"/> Yes*	No	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
All decant valves and transfer valves locked out? **	<input checked="" type="radio"/> Yes	No*	Yes	<input checked="" type="radio"/> No*	Yes	<input checked="" type="radio"/> No*	NA	NA
Are transfer pumps ready for service?	NA	NA	NA	NA	NA	NA	NA	NA

8. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
Visible oil leaks from gear box?	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
Has routine wash down of precipitate/crystals on tank sides and mixer impeller been completed?	<input checked="" type="radio"/> Yes	No	Yes	<input checked="" type="radio"/> No	Yes	<input checked="" type="radio"/> No
Mixer off as part of sediment washing process? If Yes, draw an "X" through answers to next question.	NA	NA	NA	NA	NA	NA
Mixer running and turbulence/vortex observed? **	NA	NA	NA	NA	NA	NA

K05 PHASE IVa PART 2 - ROUTINE INSPECTION FORM

Date: 6/29/2020

Time: 0725

Inspector Initials: KSH

PROCESS PIPING INSPECTION

1. Observe piping between Process Tank secondary containment and FBR secondary containment.
Any leaks, punctures, damage, bulges visible? Yes* No
2. Observe piping in Process Tank secondary containment area.
Any leaks, punctures, damage, bulges visible? Yes* No
3. Record reading on Stabilized Lake Mead Water (SLMW) flowmeter east of Process Tanks.
Flowmeter: 5,866,100 (gallons)

SECONDARY CONTAINMENT INSPECTION

4. Perform 360 perimeter walk to observe liner system for potential wear and tear.
Any leaks, punctures, or other damage visible? Yes No
5. Is there storm water accumulation greater than 1 foot? Yes No
If Yes, pump storm water into one of the Process Tanks.
6. Is there storm water accumulation in equipment pad sumps?: Yes No
If Yes, pump storm water into one of the Process Tanks.

PROCESS TANKS AND DAY TANK INSPECTION

7. Perform 360 degree walk around of each tank to inspect for damage or leaks and lock out of valves:

	T-201		T-202		T-203		T-204	
Visible damage or leaks/stains? (inspect all welds and nozzles/valves)	Yes*	<input checked="" type="radio"/> No	<input checked="" type="radio"/> Yes*	No	Yes*	<input checked="" type="radio"/> No	Yes*	<input checked="" type="radio"/> No
All decant valves and transfer valves locked out? **	<input checked="" type="radio"/> Yes	No*	Yes	No*	Yes	No*	NA	NA
Are transfer pumps ready for service?	NA	NA	NA	NA	NA	NA	NA	NA

8. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
Visible oil leaks from gear box?	Yes*	NA No	Yes*	NA No	Yes*	NA No
Has routine wash down of precipitate/crystals on tank sides and mixer impeller been completed?	<input checked="" type="radio"/> Yes	No	Yes	NA	Yes	NA
Mixer off as part of sediment washing process? If Yes, draw an "X" through answers to next question.	NA	NA	NA	NA	NA	NA
Mixer running and turbulence/vortex observed? **	NA	NA	NA	NA	NA	NA

Attachment B
Phase IVa Part 2 Monthly Inspection Form

K05 PHASE IVa PART 2 - MONTHLY INSPECTION FORM

Date: 7/1/20 Time: 15:30 Inspector Initials: PG

INSPECT MATERIALS AND PARTS

1. Are all safety materials, resources, and supplies to perform work present? Yes No
 If no, list what needs to be ordered and inform Site Implementation Manager: _____

PUMP OPERATION INSPECTION

2. Check if all AODD transfer pumps are in good condition and working order. Provide notes and contact the Site Implementation Manager if any repairs are required:

P-201	<input type="checkbox"/>	Tank has been decommissioned
P-202	<input type="checkbox"/>	Tank has been decommissioned
P-203	<input type="checkbox"/>	Tank has been decommissioned
P-204	<input checked="" type="checkbox"/>	
P-205	<input checked="" type="checkbox"/>	
P-206	<input checked="" type="checkbox"/>	

HIGH-HIGH LEVEL ALARMS INSPECTIONS

3. Check if the high-high level warning alarm system is in good condition for each tank. Provide notes and contact the Site Implementation Manager if any repairs are required:

	T-201		T-202		T-203		T-204	
	Yes	No*	Yes	No*	Yes	No*	Yes	No*
Check what level the High-High alarm signals – is it consistent with the set points?	Yes	No*	Yes	No*	Yes	No*	<input checked="" type="radio"/> Yes	<input type="radio"/> No*
Test reset procedure – were there any issues?	Yes*	No	Yes*	No	Yes*	No	Yes*	<input checked="" type="radio"/> No
Are all alarm status lights in good working order?	Yes	No*	Yes	No*	Yes	No*	<input checked="" type="radio"/> Yes	<input type="radio"/> No*
Are the shut-off devices in good working order?	Yes	No*	Yes	No*	Yes	No*	<input checked="" type="radio"/> Yes	<input type="radio"/> No*
Visible damages to the alarm cords and cables?	Yes*	No	Yes*	No	Yes*	No	Yes*	<input checked="" type="radio"/> No

Notes: Tanks T-201, T-202, and T-203 have been decommissioned.

K05 PHASE IVa PART 2 - MONTHLY INSPECTION FORM

Date: 7/1/20

Time: 15:30

Inspector Initials: PG

INSPECT PROCESS TANK MIXERS

4. Visual inspection from top of each Process Tank:

	T-201		T-202		T-203	
	Yes	No*	Yes	No*	Yes	No*
Is there adequate oil in Process Tank mixer motors?						

NOTES:

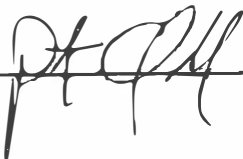
* - Notify Site Implementation Manager immediately if any of these conditions are observed and thoroughly document on this form and through photographs.

COMMENTS:

(Describe all "yes" answers, any observed damage, any areas that could not be inspected and the reason, etc.)

Process tank mixer motors have been removed for T-201,
T-202 and T-203.

Operator Signature: _____



EMERGENCY CONTACTS:

Title	Name	Phone #	Comments
Field Operations Manager	Kyle Hansen	(801) 949-6663	
Project Manager	David Bohmann	(303) 704-9527	
Program Manager	Dan Pastor	(303) 588-0901	
Corporate Health & Safety	Michelle Gillie	(610) 348-7197	
Process Engineer	Courtney Flores	(770) 845-6281	
Emergency Generator (United Rentals)	Heath Barnard	(702) 538 2292	Reference Quote # 142770051 Reference Customer # 1439334