

Monthly Progress Report

June 20, 2023

To: Garin Schrieve and Sarah Penfield, Washington State Department of Ecology

From: Nicole Forsberg and Rebecca Desrosiers, Anchor QEA, LLC

cc: Kristin Gaines and Cheryl Vezzani, Northwest Alloys, Inc.

Re: Former Reynolds Metals Remediation – Monthly Progress Report, May 2023

Per Section XI of the Consent Decree (CD) issued by the State of Washington Cowlitz County Superior Court on December 14, 2018, Anchor QEA, LLC, is providing the following monthly progress report on behalf of Northwest Alloys, Inc (NWA). This monthly progress report describes the actions taken during the previous month to implement the requirements of the CD. This monthly progress report also summarizes construction progress as outlined in the *Construction Quality Assurance Plan*, Appendix O to the *Final Engineering Design Report, Version 2* (Final EDR; Anchor QEA 2023), approved by the Washington State Department of Ecology (Ecology) on April 14, 2023.

A. List of on-site activities that have taken place during the month

A photograph log of construction activities is included in Attachment A.

- **Installation and maintenance of temporary controls and facilities**
 - Installation and maintenance of temporary erosion and sediment control (TESC) best management practices (BMPs)
 - As shown on Construction Drawings T-01 and T-02, trenching was performed and silt fences were installed in the following areas:
 - Northwest corner of the West Landfill and U-Ditch.
 - Northern perimeter of East Landfill No. 2
 - North of Facility 73 retention pond
 - Additional wattles were installed around inlets near Facility 73 and Facility 77.
 - Observations and monitoring of performance for TESC BMPs
 - Envirocon, Inc.,¹ performed daily stormwater inspections, as documented in their construction stormwater site inspection forms.
 - Anchor QEA and NWA observed the completion of the TESCOs and BMPs listed previously and noted that they were properly installed.

¹ Multiple entities were hired by NWA to complete the cleanup. Envirocon is the prime contractor hired by NWA to conduct the remediation work. They have hired several subcontractors who are mentioned in this report, including Keller Management Services, LLC (Keller), and Catworks Construction (Catworks). Anchor QEA is assisting NWA in implementing the *Construction Quality Assurance Plan* (Appendix O to the Final EDR [Anchor QEA 2023]).

- Changes or improvements to temporary access and staging facilities
 - Envirocon completed installation of the access road near Staging Area West to provide access to the West Landfill and U-Ditch.
- Temporary facilities installed
 - No new temporary facilities were installed. Keller Management Services, LLC (Keller), continued to operate the temporary mixing station related to East Landfill No. 1 ground improvement.
- Installation and maintenance of stormwater control facilities and management of remediation water
 - Remediation water generated during the installation of the east force main was collected.
- Problems encountered while operating temporary water control facilities
 - None.
- Compliance with permit requirements for managing remediation water
 - No problems were encountered.
- Deviations from project design documents
 - There were no deviations from project design documents.
- **Ground improvement**
 - Keller continued ground improvement activities along the perimeter of East Landfill No.1.
 - Ground improvement grout mixing was performed in areas with less than 3 feet of peat between STA 8+60 to approximately STA 15+00. 23, grout mixture material samples were collected by Keller and Anchor QEA for unconfined compression (UC) testing. All results exceeded the UC strength criterion.
 - Ecology was provided email updates on the progress of the ground improvement on May 9, May 21, and May 31, 2023. These emails communicated that the original testing performed between STA 5+00 and STA 6+00 did not meet UC strength requirements and alternatives tests were planned. On May 25 and 26, Keller completed two tests—the first, using dry quicklime followed by the original cement slurry mixture; the second, using a revised wet mix that replaced 75% of the Portland cement with Terraflow 75 (a recycled slag material). The lime amendment approach was difficult to implement and did not meet specifications. The Terraflow amendment performed well, and UC tests exceeded the 28-day strength requirement of 35 pounds per square inch after 4 days. Ecology approved use of the Terraflow amendment via email on June 2, 2023.
- **Stormwater infrastructure**
 - Catworks Construction (Catworks) installed the wet well at East Landfill Pump Station and performed pump assembly. JH Kelly continued to install electrical and mechanical components.

- Prior to installation of the wet well, subgrade was excavated an additional 2 feet and backfilled with quarry spalls to increase strength and stability.
- Ground Penetrating Radar Systems, LLC, located and marked subsurface utilities as related to the east force main piping installation.
- Envirocon fused 16-inch-diameter high density polyethylene (HDPE) east conveyance piping.
- Envirocon trenched along Berth Road and the bend near SU5 for the installation of east force main piping.
- Cat Works installed 16-inch-diameter east force main piping along Berth Road and at the bend near SU5.
- Vibratory compaction and subsequent compaction testing were performed by Professional Service Industry, Inc., during the east force main piping installation along Berth Road.
- Envirocon removed concrete near the Staging Area East for installation of east force main piping.
- **Excavation, consolidation, and backfilling**
 - Envirocon completed SU1 waste regrading and began SU2 waste consolidation into the West Landfill. Grading, compaction, and surveying were also performed at East Landfill SU2.
 - Gibbs and Olson, Inc., performed verification surveys in SU2.
 - Cascade Tree Works, LLC, completed tree removal at the U-Ditch.
- **Cap placement**
 - There were no activities this period.
- **Permeable reactive barrier installation**
 - There were no activities this period.

B. Detailed description of any deviations from required tasks not otherwise documented in project plans and specs or amendment requests

None.

C. Description of all deviations from the Scope of Work and Schedule (Exhibit C) during the current month and any planned deviations in the upcoming month

None.

D. For any deviations in schedule, a plan for recovering lost time and maintaining compliance with the schedule

Construction was delayed by 1 month and resumed on April 17, 2023. The revised construction schedule includes all project components for Year 1, and demobilization is anticipated for mid-October.

During installation of the East Force Main, several unknown utility crossings were identified, and a seam of flowable sand was encountered. Both issues have required extra time to resolve; thus, the work is approximately 3 to 4 weeks behind schedule. NWA is working with Envirocon to assess options to complete Year 1 work.

E. Summary of all environmental data received by Owner during the past month

None.

F. (At Ecology's request) All raw data including laboratory analyses and an identification of the source of the sample

Future data are anticipated for remediation water sampling and will be included in this section as available.

G. A list of deliverables for the upcoming month if different from the schedule and a list of deliverables submitted during May.

Table 1
Deliverables for Upcoming Month

Deliverable	Submittal Date
Compliance Monitoring and Contingency Response Plan	Awaiting Ecology comments

Table 2
Deliverables Submitted in May

Deliverable	Submittal Date
Revised AKART Study Plan and QAPP	May 25, 2023
Facility 77 extension tank package	June 2, 2023

Notes:

AKART: All Known, Available, and Reasonable Technologies

AKART Study Plan: *AKART Study Plan for Treatment of Remediation Water at Facility 71*

QAPP: *Quality Assurance Project Plan for Remediation Water Monitoring*

H. Reference

Anchor QEA (Anchor QEA, LLC), 2023. *Final Engineering Design Report, Version 2*. Former Reynolds Metals Reduction Plant – Longview. Prepared for Northwest Alloys, Inc. March 2023.

Attachment A

Construction Photographs

Photograph 1
West Landfill (SU2) South Side



Envirocon installed silt fence along West Landfill perimeter (facing west).

Photograph 2
Facility 73



Envirocon, Inc. (Envirocon), installed additional stormwater inlet protection wattles in grass field adjacent to Facility 73 and Facility 77 (facing southeast).

Photograph 3
Staging Area West



Envirocon constructed access road to West Landfill and U-ditch (facing northwest).

Photograph 4
East Landfill No. 1 – Force Main



Catworks Construction (Catworks), installed East Landfill No. 1 Pump Station wet well, piping, and flow meters (facing northwest).

Photograph 5
East Force Main Trenching



Catworks trenching for installation of east force main piping along Berth Road (facing southwest).

Photograph 6
East Force Main – HDPE Pipe Fusing



Fusing of east force main HDPE piping joints.

Photograph 7
East Force Main Pipe Trenching



Envirocon removed surficial concrete in preparation for east force main piping installation (facing north).

Photograph 8
East Force Main Trench Dewatering



Envirocon installed dewatering wells adjacent to SU5 for trench to facilitate force main piping installation (facing east).

Photograph 9
East Landfill No.1 – Ground Improvements



Keller Management Services, LLC, continued East Landfill No.1 ground improvements (facing northwest).

Photograph 10
West Landfill Consolidation



Envirocon continued to consolidate SU1 and SU2 waste material (facing north). Control surveys were conducted throughout activities.

Photograph 11
Stormwater Inlet Protection



Envirocon installed stormwater inlet protection near Facility 71 (facing southeast).

Photograph 12
East Landfill No. 2 TESC Installation



Envirocon installed silt fence around northern perimeter of East Landfill No. 2 (facing southeast).

Photograph 13
West Landfill – Compaction



Envirocon roll compacting West Landfill (facing northeast).