

17 April 2023

Jocelyn Clark, Physical Scientist
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United States Environmental Protection Agency, Region 9
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VIA ELECTRONIC MAIL

**Subject: First Quarter 2023 Progress Report
Nammo Defense Systems Inc. Facility
Mesa, Arizona**

Pursuant with Paragraph 34 of the Administrative Order of Consent between Nammo Defense Systems Inc. (NDS) and the United States Environmental Protection Agency Region 9 (EPA) effective 9 February 2021, this report submittal includes a summary of the activities completed during the first quarter (1Q) 2023.

CONTACT INFORMATION AND CHANGES IN PROJECT PERSONNEL

Contact Name and Position	Contact Information	Changes
Jocelyn Clark (EPA, Special Projects Coordinator)	Clark.Jocelyn@EPA.gov (415) 972-3324	No change
Angel Soto (NDS, Health, Environment, Safety and Security [HESS] Director)	JSoto@Nammo.us (602) 309-5819	No change
Carole Thompson (NDS, Communications Manager)	CThompson@Nammo.us (480) 898-2565	No change
Isaac Roll (Geosyntec Project Engineer/NDS Environmental Program Consultant)	Iroll@geosyntec.com (602) 513-5829	No change

Fabrizio Mascioni (Geosyntec Consultants, Project Manager)	FMascioni@Geosyntec.com (602) 513-5816	No change
Jeremy Musson (Pinyon Environmental [Pinyon], Groundwater Sampling Project Manager)	musson@pinyon-env.com (303) 980-5200	No change

SIGNIFICANT ACTIVITIES DURING REPORTING PERIOD

Deliverables

Consent Order Project:

- Annual Adjustment (2023) to Estimated Cost for Implementation of the Remedial Investigation (RI) Work Plan and RI Work Plan Addendum 1, Plant 3 and Former Water Boreout (WBO) Facility, at NDS Mesa, Arizona Facilities RCRA-09-2021-001– 3/29/23
- Community Relation Plan, at Nammo Defense Systems Mesa, Arizona Facilities RCRA-09-2021-001 – 2/10/23
- Communication Plan, at Nammo Defense Systems Mesa, Arizona Facilities RCRA-09-2021-001 – 2/10/23
- Fourth Quarter 2022 Progress Report, Nammo Defense Systems Mesa, Arizona – 1/13/23
- OU3 RCRA Facility Investigation Work Plan Plant 3 and Desert Magazine Area (Operable Unity 3), at Nammo Defense Systems Mesa, Arizona Facilities RCRA-09-2021-001 – 12/30/22
- Fourth Quarter 2022 Groundwater Monitoring Report Former Thermal Treatment Unit, Nammo Defense Systems Plant No. 3, Mesa, Arizona – 3/15/23
- Interim Remedial Action Performance, Fourth Quarter 2022 Former Thermal Treatment Unit – 2/27/23

Plant 3 and Former Water Bore Out (WBO) Project:

- Third Quarter 2022 Groundwater Monitoring Report, Nammo Defense Systems Plant No. 3, Mesa, Arizona – 3/15/23
- FBR, Fourth Quarter 2022 Performance Report – 3/8/2023

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Meetings

- Biweekly meetings were conducted with EPA, Arizona Department of Environmental Quality (ADEQ), NDS, and its consultants related to the Consent Order Project.
- Monthly meetings were conducted with ADEQ, NDS, and its consultants related to the Voluntary Remediation Program Project.

Field Activities

- 1Q 2023 groundwater sampling was conducted at the Former TTU well network from 2/20/2023 through 3/6/2023.
- 1Q 2023 groundwater sampling was conducted at the former WBO well network from 2/23/2023 through 2/27/2023.

Stakeholder Interaction and Meetings

- On-going discussions with Salt River Pima-Maricopa Indian Community (SRPMIC) to obtain information related to the Primate Facility and updated water consumption. Updated submittal date of the revised Contingency Plan to 4/14/23.

Notable Analytical Results

Consent Order Project:

- 1Q 2023 Groundwater Monitoring -
 - TTU-9A had a trigger level for 1,4-Dioxane (18.4) and was resampled on 3/21 with no 1,4-dioxane detected

Plant 3 and Former WBO Project:

- 1Q 2023 Groundwater Monitoring –
 - N/A

Action Items for Next Reporting Period

Consent Order Project:

- Resubmittal of 4Q 2022 Former TTU Groundwater Monitoring Report on 5/1/23 based on EPA comments dated 3/31/23.
- Submittal of 1Q 2023 Former TTU Groundwater Monitoring Report 60 days from receipt of laboratory reports (5/31/23).
- Submittal of TTU PFAS Screening Sampling Tech Memo
- Completion of 2Q 2023 Former TTU sampling May 2023.
- Contingency Plan for SRPMIC and USEPA review by 4/14/2023.
- 2023 Conceptual Site Model Update – 6/1/2023

Plant 3 and Former WBO Project:

- Submittal of 4Q 2022 WBO Groundwater Monitoring Report (4/28/23)
- Submittal of 1Q 2023 WBO Groundwater Monitoring Report 60 days from receipt of laboratory reports (5/31/23).
- Completion of 2Q 2023 WBO sampling May 2023.
- Tech Memo summarizing soil investigation at former Drake Materials facility.
- Permitting and drilling coordination for NT-23 and NT-23 near well NT-5.

Remediation Systems Updates

Consent Order Project – Interim Response Hydraulic Containment System:

- The groundwater extraction and treatment system was operational during 4Q with no significant downtime.
- The Interim Remedial Action data was provided in a separate memorandum during 1Q 2023, dated 2/27/2023.

Plant 3 and Former WBO Project – Hydraulic Containment [Fluidized-Bed Reactor (FBR)] System

The hydraulic containment system implemented at the former WBO pits area uses a fluidized-bed reactor (FBR) system to treat water extracted from one or two extraction wells (EXT-1 and EXT-2), where EXT-2 is typically held in reserve while EXT-1 is operated. During the 1Q, groundwater extraction was temporarily switched from EXT-1

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to EXT-2 on February 23, for groundwater sampling at the request of Pinyon Environmental Inc. Groundwater extraction was switched back from EXT-2 to EXT-1 following sampling on February 23.

The FBR system operated continuously at an average flow rate of approximately 400 gallons per minute from January 1 to February 13 and from March 9 to March 19. This is the nominal value associated with infiltration capacity and modeled capture of the source area. From February 14 to March 9 and from March 9 to March 31, the FBR system operated at a flow rate of approximately 250 gallons per minute to minimize carbon lifting in FBR-230 while awaiting repairs to the FBR-230 biomass separators.

Approximately 45 minutes of temporary system downtime was experienced for strainer cleanings on January 10, January 24, February 15, February 23, February 27, March 7, and March 16. Both FBRs experienced downtime on February 7 (approximately 12 hours) due to low flow alarms triggered by carbon washout in FBR-230, and FBR-230 was pulsed on February 14 (approximately 2 h downtime) to displace biomass and minimize carbon washout. FBR-230 also experienced some downtime on February 28 (4.25 h) and March 20 (7.75 h) during maintenance activities on the FBR-230 recirculation pump.

A 1Q progress report further describing performance and operations and maintenance responsibilities will be submitted to ADEQ by May 31, 2023.

If you have any questions about this report, please contact either Angel Soto with NDS or Fabrizio Mascioni with Geosyntec.

Sincerely,



Fabrizio Mascioni, R.G. (AZ 65652)
Principal

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Copies to: Angel Soto, NDS
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