

13 January 2023

Jocelyn Clark, Physical Scientist
Special Projects Coordinator
United States Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, California

VIA ELECTRONIC MAIL

**Subject: Fourth Quarter 2022 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 fourth quarter (4Q) 2022.

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:

- RCRA Facility Assessment for Plant 3 and Desert Magazine Area (OU3), Nammo Defense Systems Inc. Facility –10/28/2022
- Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Work Plan for Plant 2, Thermal Treatment Unit (TTU), and Desert Firing Range, Nammo Defense Systems Inc. –11/7/2022
- RCRA Facility Assessment for Plant 4 (Operable Unit [OU]4), Nammo Defense Systems Inc. Facility –11/11/2022
- Environmental Indicator Report, Nammo Defense Systems Inc. – 11/14/2022
- Environmental Indicator Report, Nammo Defense Systems Inc. (updated with draft Documentation of Environmental Indicator Determination forms) – 12/15/2022
- RCRA Facility Assessment for Plant 5 (OU5), Nammo Defense Systems Inc. Facility –11/23/2022
- RCRA Facility Assessment for Plant 1 (OU1), Nammo Defense Systems Inc. Facility –12/23/2022
- 3Q 2022 Former TTU Groundwater Monitoring Report –12/16/2022
- RFI Work Plan for Plant 3 and Desert Magazine Area (OU3), Nammo Defense Systems Inc. –12/30/2023

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

- Addendum 1 to Remedial Investigation (RI) Work Plan Plant 3 and Former Water Boreout (WBO) Facility –10/7/22
- Second Quarter 2022 Groundwater Monitoring Report, Nammo Defense Systems Plant No.3, Mesa, Arizona – 11/1/22
- Review of Preliminary Human Health Risk Assessment Report and Citrus Fruit Sampling Plan, Nammo Plant No.3 Former WBO, Technical Memorandum – Submitted 11/18/22

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

- Per- and polyfluoroalkyl substances (PFAS) sampling was conducted at the Former TTU well network on 11/15/2022 and 11/16/2022.
- 4Q 2022 groundwater sampling was conducted at the Former TTU well network from 11/28/2022 through 11/30/2022.
- 4Q 2022 groundwater sampling was conducted at the former WBO well network from 11/17/2022 through 11/29/2022.

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 1/31/23.
- On-going discussions with City of Mesa to obtain stakeholders contacts within extent the Plant 3/WBO plume study area.

Notable Analytical Results

Consent Order Project:

- 4Q Groundwater Monitoring -

- The perchlorate concentration for well TTU-6 exceeded action levels at 144 µg/L. Action level resampling occurring on 12/22/2022 confirmed data collected during the 4Q sampling event with a concentration of 153 µg/L. The well is scheduled for monthly sampling during 1Q 2023.
- PFAS Screening –
One or more PFAS compounds were detected in all wells except TTU-7 and TTU-8. Perfluorooctanoic acid (PFOA) was observed to be the PFAS compound with the highest detected concentrations. In general, concentrations were relatively low, especially west of the SRP canal. The detections indicate results above the current EPA Risk Screening Level for PFOA (4 ng/L) at TTU-12, 13, 14, 15, 16, and EX-1 through EX-5 located east of the SRP canal, with the highest concentration of 130 ng/L at EX-3.

Plant 3 and Former WBO Project:

- 4Q Groundwater Monitoring –
 - Well WBO-1 was dry and not sampled.

Action Items for Next Reporting Period

Consent Order Project:

- Submittal of 4Q 2022 Former TTU Groundwater Monitoring Report 60 days from receipt of laboratory reports.
- Submittal of TTU PFAS Screening Sampling Tech Memo
- Completion of 1Q 2023 Former TTU sampling March 2023.
- Submittal of the RFI Work Plan for OU4 by 2/10/23.
- Draft Contingency Plan for SRPMIC and USEPA review by 1/31/2023.
- Draft Communication Plan and Community Relations Plan for SRPMIC and USEPA review by 2/10/2023.

Plant 3 and Former WBO Project:

- Submittal of 3Q 2022 WBO Groundwater Monitoring Report by 1/31/2023.
- Submittal of 4Q 2022 WBO Groundwater Monitoring Report 60 days from receipt of laboratory reports.
- Completion of 1Q 2023 WBO sampling March 2023.

- Soil sampling investigation at former Drake Materials facility, scheduled to begin on 2/6/2023.
- Permitting and drilling coordination for NT-19, NT-20, NT-21, and NT-22. Additional coordination of two new wells near NT-5.
- Habeeb Ranch SAP coordination for fruit sampling.

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 will be provided in a separate memorandum during 1Q 2023.

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

Extraction wells EXT-1 and EXT-2 can be operated simultaneously but are typically operated to extract from well EXT-1 only to target treatment of groundwater with historically higher concentrations of perchlorate. During the 4Q, groundwater extraction was temporarily switched from EXT-1 to EXT-2 on November 22, for groundwater sampling at the request of Pinyon Environmental Inc. Groundwater extraction was switched back from EXT-2 to EXT-1 following sampling on November 23.

The FBR system operated continuously at an average flow rate of approximately 400 gallons per minute. This is the nominal value associated with infiltration capacity and modeled capture of the source area.

The system operated in single-pass mode for the majority of 4Q with exception of maintenance activities for strainer cleanings on October 4, October 11, October 27, November 8, November 22, December 6, and December 21. This resulted in FBR system temporary downtime of approximately 45 minutes for each event.

A 4Q progress report further describing performance and operations and maintenance responsibilities will be submitted to ADEQ on February 28, 2023.

Jocelyn Clark
13 January 2023
Page 6

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

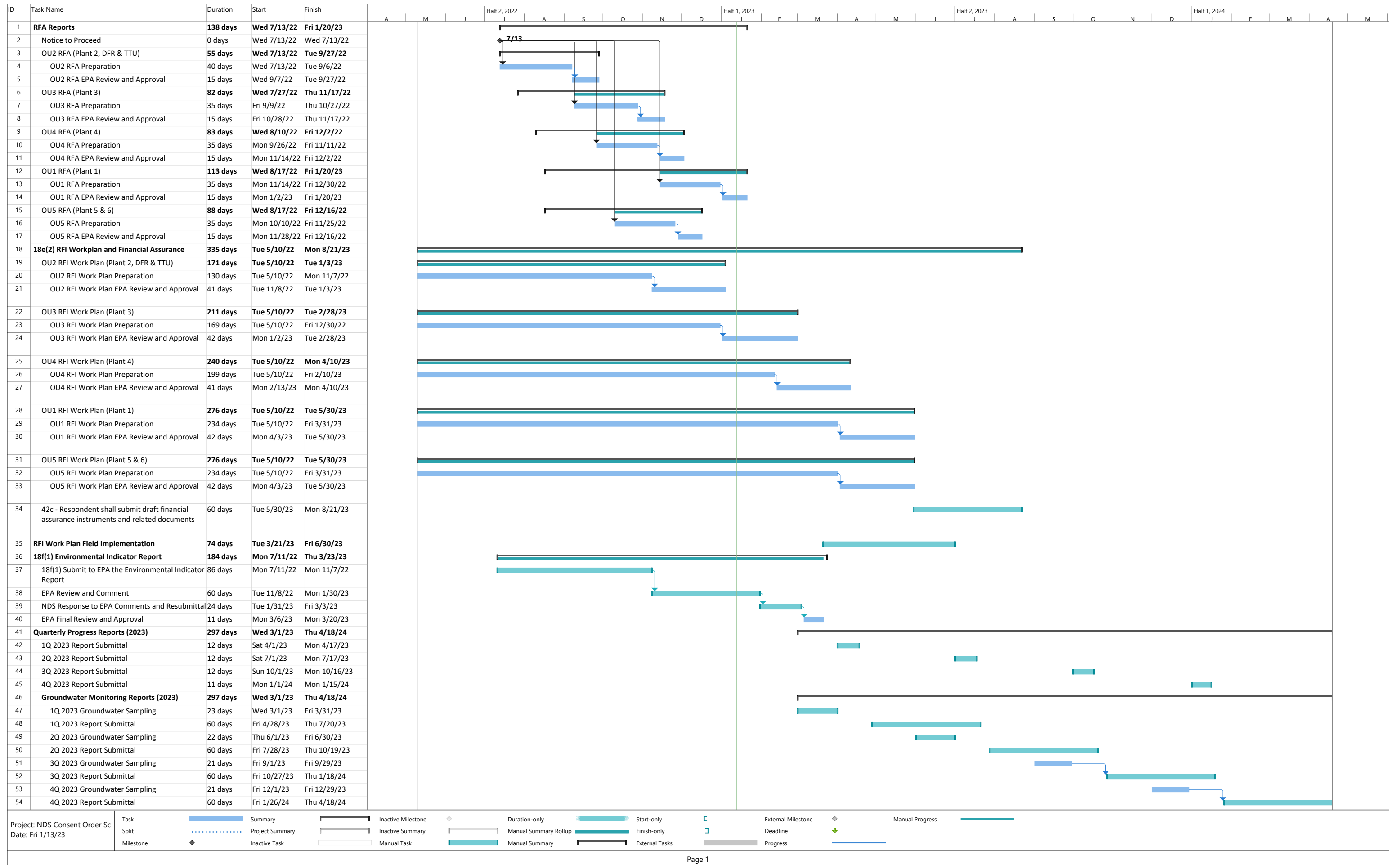
Sincerely,



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

Attachment: Project Schedule
Copies to: Angel Soto, NDS
Kyle Johnson, ADEQ
Antony Leverock, ADEQ
Robin Thomas, ADEQ
Steve Arman, EPA
William Frier, EPA
Carol Hibbard, SRPMIC
Christopher Horan, SRPMIC

PROJECT SCHEDULE



Project: NDS Consent Order Sc
Date: Fri 1/13/23

Task		Summary		Inactive Milestone		Duration-only		Start-only		External Milestone		Manual Progress	
Split		Project Summary		Inactive Summary		Manual Summary Rollup		Finish-only		Deadline		Progress	
Milestone		Inactive Task		Manual Task		Manual Summary		External Tasks					