

NAMMO DEFENSE SYSTEMS INC

January 14, 2025

Jocelyn Clark, P.E., Civil/Environmental Engineer
 Land, Chemicals and Redevelopment Division, RCRA Branch
 United States Environmental Protection Agency, Region 9
 75 Hawthorne Street, LND-4-2
 San Francisco, California 94105

VIA ELECTRONIC MAIL

**Re: Fourth Quarter 2024 Progress Report, Nammo Defense Systems Inc. Facility
 Mesa, Arizona**

Dear Ms. Clark:

Pursuant with Paragraph 34 of the Administrative Order on 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 (Q4) 2024.

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
Matthew Trask, NDS, Director, Ethics and Compliance	Mtrask@Nammo.us (480) 898-2495	No change
Carole Thompson, NDS, Communications Manager	Cthompson@Nammo.us (480) 898-2565	No change
Kate Blatchford, NDS, Environmental Remediation Manager	Kblatchford@Nammo.us (480) 490-8911	No change

Fabrizio Mascioni, Geosyntec Consultants, Project Manager	Fmascioni@Geosyntec.com (602) 513-5816	No change
Isaac Roll, Geosyntec Consultants, Senior Engineer	Iroll@Geosyntec.com (602) 513-5829	No change

SIGNIFICANT ACTIVITIES DURING REPORTING PERIOD

Meetings

- Biweekly virtual meetings were conducted between EPA, Arizona Department of Environmental Quality (ADEQ), NDS, and its consultants including Geosyntec, related to the Consent Order Project, with the exception of 10/10/24 and 12/5/24.
- Monthly virtual meetings were conducted with ADEQ, NDS, and its consultants related to the Voluntary Remediation Program Project.
- 12/10/24 virtual Meeting with the City of Mesa to discuss proposed well locations and permitting for NT-21 & NT-22

NDS Communications

- Implementation of the CRP Questionnaire.
- Successful meeting with SRPMIC at Nammo.

Consent Order Project

Deliverables:

- Third Quarter 2024 Groundwater Monitoring Report, Former TTU, Nammo Defense Systems Inc., Mesa, Arizona submitted 11/27/24.
- Second Quarter 2024 Former TTU Interim Remedial Action (IRA) Report Nammo submitted 11/27/24.
- Third Quarter TTU GIS and Laboratory Database Package submitted 12/2/24.
- Updated Project Management Plan submitted 12/16/24.

Field Activities:

- Q3 2024 groundwater sampling was conducted from 11/18/24 through 11/21/24.

Notable Analytical Results:

Per the Contingency Plan for Groundwater Contamination Limit Exceedance at Primate Facility Well No. 2 (*Geosyntec, 2023*), NDS conducted 3 monthly sampling events at TTU-6 to monitor an elevated concentration of perchlorate detected during

the August Q2 sampling event. TTU-6 is located upgradient to the northwest of well PF-2. A summary of the sampling dates and concentrations are provided below:

Location	Sample Type	Date Sampled	Perchlorate Concentration
			µg/L
TTU-6	Primary	5/21/2024	17.4 J+
TTU-6	Primary	8/27/2024	309
TTU-6	Primary	9/26/2024	246
TTU-6	Primary	10/25/2024	272
TTU-6	Primary	11/21/2024	205
TTU-6	Duplicate	11/21/2024	203

µg/L= micrograms per liter

Results from the Washington National Primate Research Center well PF-2, located on Salt River Pima-Maricopa Indian Community (SRPMIC) property for Q4, did not exceed the site-specific perchlorate concentration limit of 6.4 µg/l or the trigger level (TL) of 3.2 µg/l.

Remediation Systems Update:

Evaporator Unit

- During Q4 the evaporator system processed approximately 20,000 gallons of water.
- Approximately 6,000 gallons of water was collected from the wells by NDS and sent for offsite disposal due to evaporator being down from a natural gas line break and holding tank capacity. A copy of the disposal manifests are provided in **Attachment A**.
- Approximately 14.52 pounds of perchlorate were removed during Q4.
- On 10/8/24 the system was shut down due to a damaged natural gas line. The repairs were completed, and the evaporator was returned to service on 10/30/31.
- On 11/6/24 the evaporator was malfunctioning and was shut down for approximately 4 hours.
- TTU-20 was shut off from 11/12/24 through 11/19/24 and TTU-1 and TTU-2 were shut off from 11/18/24 through 11/19/24 to accommodate the groundwater sampling event.
- From 11/27/24 through 12/2/24 the evaporator was down to allow time for the pumping wells to fill, which was utilized as an evaporator cleaning event.
- From 12/19/24 through 12/30/24, the evaporator was shut down for our annual holiday plant closure. The unit was returned to service on 12/30/24 with no issue.

Action Items for Next Reporting Period:

- Submittal of Q4 2024 Former TTU Groundwater Monitoring Report 60 days from end of quarter (02/28/25).
- Completion of Q1 2025 groundwater sampling event (proposed February 2025).
- Submittal of a GIS and Laboratory Database package including Q4 2024 groundwater monitoring data (02/28/24).
- Submission of the Evaporator Design to EPA for comment.
- Submittal of an Evaporator Unit IRA Work Plan (due March 31, 2025)

Plant 3 and Former Water Bore Out (WBO) Project

Deliverables:

- Third Quarter WBO GIS and Laboratory Database Package submitted 12/2/24.
- NT-21 and NT-22 permitting locations rejected by City of Mesa with traffic control plans.

Field Activities:

- Q4 2024 groundwater sampling was conducted from 11/18/24 through 11/21/24.

Notable Analytical Results:

- Q4 2024 Groundwater Monitoring- Concentrations of perchlorate were observed at NT-5 slightly increased in concentrations (15,000 ug/l) from the previous sampling event. It should be noted that in review of the data it was discovered that NT-5 and NT-15 were present in the laboratory report inversely. This was determined by historic concentrations, and was correct to reflect as such in the final laboratory report. This information will be presented in the Q4 Semiannual Groundwater Monitoring Report.

Action Items for Next Reporting Period:

- Completion of Q1 2025 quarterly sampling (proposed February 2025).
- Permitting and Installation of shallow wells NT-21 and NT-22.

Remediation System Updates:

Hydraulic Containment FBR System

Between 10/1/24 and 12/31/24, the FBR system operated continuously at an average flow rate of approximately 294.66 gallons per minute, pumping exclusively during this time period from EXT-1 as the pump at EXT-2 was removed for replacement. Approximately 80.18 pounds of perchlorate was removed during Q2 operation./3

FBR-230 and FBR-370 both experienced an automatic shutdown with connectivity issues between EXT-1 and the PLC from 10/31/24 through 11/14/24. Industrial Electrical Services (IES) restored the connection and both FBRs returned to single-pass at a reduced flow rate of 100 GPM.

On 10/24/24, Weber Water Resources removed the pump from EXT-2 and determined it requires replacement. The gate valve and check valve at EXT-2 were replaced with a blind flange due to leaks observed after pulling EXT-2.

Soil Vapor Extraction System (Plant 3)

Current period and historic SVE flow rates and mass removal are summarized below; historic results have been updated to reflect a correction to coefficients in the calculation.

Date	Influent Concentration (µg/L)		Flow Rate (scfm)	Period Operating Hours	Mass Removed (pounds)		Cumulative Mass Removed (pounds)	
	1,1-DCE	TCE			1,1-DCE	TCE	1,1-DCE	TCE
5/14/2024	308	414	74	0 (startup)	0.0	0.0	0.0	0.0
5/30/2024	366	446	74	386	35.9	45.8	35.9	45.8
6/27/2024	174	252	74	626	46.7	60.3	82.5	106.1
7/24/2024	139	199	72	648	27.6	39.8	110.2	145.9
8/22/2024	145	172	74	546	21.1	27.6	131.3	173.5
9/26/2024	115	161	76	838	30.7	39.3	162.0	212.8
10/24/2024	86	121	80	542	16.0	22.4	177.9	235.2
11/20/2024	71	96	78	652	15.2	21.0	193.1	256.2
12/19/2024	63	99	56	567	9.5	13.9	202.6	270.0

The system has run continually since May 2024, totaling approximately 4,804.4 run hours since start up with an average flow rate of 71 cubic feet per minute (cfm) from well SVE-01 for Q4. Influent concentrations of 1,1-DCE in Q4 averaged 73.3 ug/l and a total of approximately 202.6 pounds of 1,1-DCE have been removed to date. Influent concentrations of TCE in Q4 averaged 105.3 ug/l and a total of approximately 270.03 pounds of TCE have been removed to date.

If you have any questions about this report, please contact Kate Blatchford at Kblatchford@Nammo.us or at 480.490.8911

Sincerely,

NAMMO DEFENSE SYSTEMS INC.

By: 
Kate Blatchford
 Environmental Remediation Manager

Attachment A: Wastewater Manifests

ATTACHMENT A
Wastewater Manifests



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

207233

Profile Number
213980 213980 213987

TO WELLS WATER
 Capstone Waste Water SO547854 DV73977

Generator Name	Name: <u>Nimmo Defense Systems Inc</u>	Generator Address	Address: <u>4111 N. Higley Rd</u>		
	Phone: <u>(480) 673-4639</u>		City: <u>PHOENIX</u>	State: <u>AZ</u>	Zip: <u>85215</u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input type="checkbox"/> Non-Industrial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Special
	<input type="checkbox"/> Used Cooking Oil	<input type="checkbox"/> Recyclable Used Oil				

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>ALICE HARTER</u>	Generator Rep. Signature	<u>[Signature]</u>
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Transporter Name	Name: <u>Advanced Chemical Transport</u>	Transporter Address	Address: <u>1210 Eiko Drive</u>		
	Phone: <u>(480) 548-5030</u>		City: <u>Sunnyvale</u>	State: <u>CA</u>	Zip: <u>90489</u>

Waste Removed (Gallons)	<u>2600</u>	Date	Time
		<u>10/31</u>	<u>7:30</u>

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>Ray Pierce</u>	Driver Signature	<u>[Signature]</u>
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

214996

Profile Number

213910

TTU Well Water (combined) SD 544799

Generator Name	Name: <u>Nimmo Defense Systems</u>	Generator Address	Address: <u>4111 N Higley Road</u>
	Phone: <u>(480) 673-4037</u>		City: <u>MESA</u> State: <u>AZ</u> Zip: <u>85215</u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input type="checkbox"/> Non-Industrial	<input checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Special
	<input type="checkbox"/> Used Cooking Oil			<input type="checkbox"/> Recyclable Used Oil		

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Dr. Wayne II</u>	Generator Rep. Signature	<u>[Signature]</u>
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Transporter Name	Name: <u>Advanced Chemical Transp. F</u>	Transporter Address	Address: <u>1710 FIRE DRIVE</u>
	Phone: <u>(408) 598-5050</u>		City: <u>Emeryville</u> State: <u>CA</u> Zip: <u>94609</u>

Waste Removed (Gallons)	<u>2000</u>	Date	<u>11/17/24</u>	Time	<u>1330</u>
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I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>Ray Pierce</u>	Driver Signature	<u>[Signature]</u>
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Disposal Facility	<u>Liquid Environmental Solutions of Arizona</u>	Address	<u>5159 West Van Buren Street Phoenix, AZ 85043</u>
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Waste Received (Gallons)		Date		Time	
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Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

214999

Profile Number

213747

Generator Name	Name: <u>Numma Defense Systems, Inc</u>	Generator Address	Address: <u>4111 N. Higley Rd.</u>		
	Phone: <u>(480) 673-4639</u>		City: <u>Mesa</u>	State: <u>AZ</u>	Zip: <u>85215</u>

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap	<input type="checkbox"/> Grit Trap	<input type="checkbox"/> Septic/Chemical Toilet	<input type="checkbox"/> Non-Industrial	<input type="checkbox"/> Industrial	<input type="checkbox"/> Special
	<input type="checkbox"/> Used Cooking Oil	<input type="checkbox"/> Recyclable Used Oil				

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	<u>Neil Harper</u>	Generator Rep. Signature	<u>Neil Harper</u>
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Transporter Name	Name: <u>Advanced Chemical Transport</u>	Transporter Address	Address: <u>1210 Liko Drive</u>
	Phone: <u>(408) 548-5050</u>		City: <u>Surryvale</u> State: <u>CA</u> Zip: <u>90489</u>

Waste Removed (Gallons)	<u>2000</u>	Date	Time
		<u>1-19-25</u>	

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	<u>RBT 1911</u>	Driver Signature	<u>RBT 1911</u>
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Disposal Facility	<u>Liquid Environmental Solutions of Arizona</u>	Address	<u>5159 West Van Buren Street Phoenix, AZ 85043</u>
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Waste Received (Gallons)		Date	Time

Facility Rep. Name (please print)		Facility Rep. Signature	
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy



LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

212022

Profile Number
50550401

50550401 D-677463

Generator Name	Name: <u>Martinez Defense System Inc</u>	Generator Address	Address: <u>4111 N Highway</u> City: <u>Mesa</u> State: <u>AZ</u> Zip: <u>85215</u>
	Phone: <u>(480) 979-3971</u>		

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	<input type="checkbox"/> Grease Trap <input type="checkbox"/> Grit Trap <input type="checkbox"/> Septic/Chemical Toilet <input type="checkbox"/> Non-Industrial <input type="checkbox"/> Industrial <input type="checkbox"/> Special	<input type="checkbox"/> Used Cooking Oil <input type="checkbox"/> Recyclable Used Oil
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I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pursuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	David Vencosi	Generator Rep. Signature	[Signature]
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Transporter Name	Name: <u>ACT</u>	Transporter Address	Address: _____ City: _____ State: _____ Zip: _____
	Phone: ()		

Waste Removed (Gallons)	2000	Date	11-12-24
		Time	

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	Robert Moré	Driver Signature	[Signature]
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Disposal Facility	Liquid Environmental Solutions of Arizona	Address	5159 West Van Buren Street Phoenix, AZ 85043
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Waste Received (Gallons)	2000	Date	11/12/24
		Time	

Facility Rep. Name (please print)	[Signature]	Facility Rep. Signature	[Signature]
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WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy