

Camp Minden Dialogue Committee
Questions posed to Vendors as of 3/6/15

ARCTECH/Actodemil

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
 2. Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?
 3. Can you indicate identify the waste streams and how much waste material will be generated from this process?
 4. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
 5. Can you identify recycled or byproduct material and how much is generated? Please identify an end user to any material? Do you have any documentation of interest from end user?
 6. Please identify any studies or sampling regarding dioxins?
 7. You identified the potential to provide 11 train systems toward this process at Camp Minden. Can you indicate the train systems that are currently available to be deployed and the location of each train available? For any train that must be manufactured, please indicate the timeframe necessary to acquire materials and fabricate the train for operation.
 8. Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
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1. Please quantify and identify the estimated amount of any waste.
 2. Please quantify the estimated amount of end product/fertilizer to be produced.
 3. What is the estimated length of time for processing the M6 into the final end product?
 4. What are the detection limits for testing for total organic compounds? Are you able to test for specific organic compounds? Is it possible for organic chemicals to reform in your process?
 5. What is the plan for the end product?
 6. Would storage be required for the end product? If so, what type, conditions, and packaging? How long would it need to be stored?
 7. Who would own the end product upon completion of the process?
 8. Are there infrastructure requirements? If so, please list.
 9. Is ArchTech planning on partnering with a prime or are they willing to be the prime?
 10. Is the equipment used in the Actodemil process already permitted for use in the approved DDESB process?
 11. Will ArchTech consider an NDA with members of the Technical Workgroup to discuss the data which clarifies the questions about the chemical destruction of the DNTs and other organics of concern?
 12. Is there noise associated with this process? If so, please define in estimated decibels.
 13. What is the published peer-reviewed scientific proof that humic acid can serve as a reducing agent for the nitro groups on nitroaromatic compounds?
 14. It was indicated that the humic acid used in the Actodemil would be able to sequester the over 1 million pounds of nitroresols that are known to be created

from basic hydrolysis of DNT. How has this been proven?

15. Is the laboratory you use for testing of water and emissions accredited by the state and EPA?

We want to understand the chemistry for these concerns.

Please develop a chemical flow chart:

- nitro group reduction process with humic acid on 1 million pounds of nitrocresols
- amide formation process between carboxylate salts and anilines under basic conditions--no such process
- the use of lignite as a source of humic acid.(heavy metals/mercury in product?) (MSDS available?)

ATON

1. For addition of sand to the M6 propellant, how would you prevent fires from friction and/or static electricity?
2. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
3. Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?
4. Can you identify the waste streams and how much of each waste material will be generated from this process? How much waste sand will be produced through this process?
5. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
6. Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.

CH2M HILL/ Dynasafe/ EXPAL

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system? Could please provide a picture of the process unit and specifically the tunnel furnace?
2. Can you identify successful demil projects your company completed in United States and what type and amount of material was processed?
3. Can you identify the waste streams and how much waste material for each will be generated from this process?
4. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
5. Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
6. Please indicate the complete timeframe that will required to acquire, fabricate, deploy a system? What will the estimated timeframe to complete proper testing of the system after setup?
7. What is stack gas flow rate in dry standard cubic meters per second per pound of waste? What is the total amount of gaseous wastestream projected to be emitted throughout the process?

8. Please list all specific compounds, inorganic and organic, that you will test for during continuous emissions monitoring, how you will test for them, and what the detection limits of the tests are.
9. If you cannot do continuous emissions monitoring for organic compounds, how will you monitor for them?
10. When you take samples to monitor, what are the detection limits for testing for total organic compounds that your laboratories can do? Are you able to test for specific organic compounds?
11. Is it possible for organic chemicals to reform in your process?
12. Please list the types of scrubbers used. How will the technologies you use to treat the gas stream factor into your overall budget?
13. Is it possible to include an additional activated carbon scrubber at the final emission point? If so, how would this affect the overall timeline of processing in weeks?
14. Is it possible to add a hold/test/release function to this equipment since this is not a continuous flow process, but rather more similar to a batch process?
15. Please name the manufacturer of the continuous monitoring system used with this equipment.
16. Is it possible to dismantle and remove this facility following completion of the project? If so, who would retain ownership?
17. Regarding the "ample space and utilities" mentioned in the presentation: Does this mean that no additional infrastructure provisions would need to be provided other than what is currently on site and the companies have pre-determined the infrastructure to be satisfactory as-is?
18. Are there other infrastructure requirements? If so, please list.
19. Please quantify the estimated volume/pounds of ash waste that would be diverted to an appropriate landfill. Where would the ash be sent?
20. Is there noise associated with this process? If so, please define in estimated decibels.
21. Is the laboratory you use for testing of emissions accredited by the state and EPA?

Clean Harbor Env. Services

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
 2. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
 3. Can you provide any and all analytical data, including but not limited to air emissions, stack testing, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
 4. Can you identify successful propellant demil projects your company completed in the United States and what type and amount of material was processed?
 5. Please indicate the complete timeframe that will required to acquire, fabricate, deploy a system? What will the estimated timeframe to complete proper testing of the system after setup?
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1. What is stack gas flow rate in dry standard cubic meters per second per pound of waste? What is the total amount of gaseous wastestream projected to be emitted throughout the process?

2. Please list all specific compounds, inorganic and organic, that you will test for during continuous emissions monitoring, how you will test for them, and what the detection limits of the tests are.
 6. If you cannot do continuous emissions monitoring for organic compounds, how will you monitor for them?
 7. When you take samples to monitor, what are the detection limits for testing for total organic compounds that your laboratories can do? Are you able to test for specific organic compounds?
 8. Is it possible for organic chemicals to reform in your process?
1. Please list the types of scrubbers used. How will the technologies you use to treat the gas stream factor into your overall budget?
 2. Is it possible to include an additional activated carbon scrubber at the final emission point?
 3. It was discussed that this was a permanent on-site fabrication at Camp Minden but that it could be dismantled and taken by rail to Colfax, Louisiana following completion of the process. Could this be guaranteed as part of the cleanup process?
 4. Please quantify the estimated volume/pounds of ash waste that would be diverted to an appropriate landfill. Where would the ash be sent?
 5. Are there other infrastructure requirements? If so, please list.
 6. Is there noise associated with this process? If so, please define in estimated decibels.
 7. Please name the manufacturer of the continuous monitoring system used with this equipment. Is the laboratory you use for testing of emissions accredited by the state and EPA?

CO2AL

1. For bulk propellant, how would you be able to prevent flashback and fire in the feed system?
2. M6 propellant in normal use is able to burn without needing atmospheric oxygen. How would your process prevent burning of the M6?
3. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
4. Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?
5. Please identify how much aluminum is required for input into the system.
6. Can you identify the waste streams and how much waste material will be generated from this process?
7. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
8. Can you identify recycled or byproduct material and how much is generated?
9. Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.

DAVINCH

1. Is the throughput calculation of 1200 pounds per day per unit accurate? If not, please clarify the projected range of throughput per unit.
2. Would any of these proposed throughputs force the use of the unit into “design base overload”?
3. Please state the overall estimated projected timeline for this process to include deployment, systemization, processing, cleanup, release of equipment from the site.
4. What operational period would be used? (16-hr, 24-hr, etc.)
5. Would adding additional units (over 1) potentially exceed the current budget range?
6. Please quantify the estimated volume of gaseous waste-stream projected to be emitted throughout the process. What is the total amount of gaseous waste-stream projected to be emitted throughout the process?
7. Please list what organic compounds will be included for testing in the hold/test/release of emissions. How will you test for them?
8. Please list all specific compounds, inorganic and organic, that you will test for during continuous emissions monitoring, how you will test for them, and what the detection limits of the tests are.
9. Please list the types of scrubbers used in the stack, if any.
10. Please quantify the estimated volume/pounds of ash or scrap waste that would be diverted to an appropriate landfill. Where would the ash be sent?
11. Please list any infrastructure/utilities that would be needed on site.
12. Is the laboratory you use for testing of water and/or emissions accredited by the state and EPA?

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
2. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
3. Can you identify the waste streams and how much waste material for each will be generated from this process?
4. Can you provide any and all analytical data, including but not limited to air emissions, stack testing, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
5. Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?
6. Are employing shock induced chemistry? Are you anticipating using a donor charge on this process and if not, what will induce the shock? How do you get a 6 9s DRE from this process?
7. Please indicate the complete timeframe that will required to acquire, fabricate, deploy a system? What will the estimated timeframe to complete proper testing of the system after setup?

Eldorado Equipment—Contained Burn

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
2. Can you identify all off-gases produced from this process, the amounts of each,

- and what air pollution controls are used for each?
3. Can you provide any and all analytical data, including but not limited to air emissions, stack testing, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
 4. Can you identify successful propellant demil projects your company completed in the United States and what type and amount of material was processed?

Eldorado Equipment—Rotary Kiln

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
2. Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
3. Can you provide any and all analytical data, including but not limited to air emissions, stack testing, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
4. Can you identify successful propellant demil projects your company completed in the United States and what type and amount of material was processed?
5. What is stack gas flow rate in dry standard cubic meters per second per pound of waste? What is the total amount of gaseous wastestream projected to be emitted throughout the process?
6. Please list all specific compounds, inorganic and organic, that you will test for during continuous emissions monitoring, how you will test for them, and what the detection limits of the tests are.
7. If you cannot do continuous emissions monitoring for organic compounds, how will you monitor for them?
8. When you take samples to monitor, what are the detection limits for testing for total organic compounds that your laboratories can do? Are you able to test for specific organic compounds?
9. Is it possible for organic chemicals to reform in your process?
10. Please list the types of scrubbers used. How will the technologies you use to treat the gas stream factor into your overall budget?
11. Is it possible to include an additional activated carbon scrubber at the final emission point? If so, how would this affect the overall timeline of processing in weeks?
12. Is it possible to dismantle and remove this facility following completion of the project? If so, who would retain ownership?
13. What specific electrical power provisions would be required?
14. Are there other infrastructure requirements? If so, please list.
15. Please quantify specifically the destruction efficiency.
16. Please clarify which of your proposed processes is projected to have:
 - a. Best emissions output
 - b. Best destruction efficiency
 - c. Best/most productive throughput
17. Please quantify the estimated volume/pounds of ash waste that would be diverted to an appropriate landfill. Where would the ash be sent?
18. Is there noise associated with this process? If so, please define in estimated decibels.

19. Please name the manufacturer of the continuous monitoring system used with this equipment.
20. Is the laboratory you use for testing of emissions accredited by the state and EPA?

General Atomics

1. Please define the amount of water waste-stream that will be produced daily as it corresponds to the timeline provided. (ex. 6000-8500 gallons daily for months 3-8; 13,000-18,000 gallons daily for months 9-14)
2. If this waste-stream is simply water that has been tested for ph, conductivity, and TOC measurements, why can it not be redirected to the ground? Must it be processed through a wastewater treatment facility? When you do Hold/Test/Release and you send water samples to a lab, what are the detection limits for testing for total organic compounds that your laboratories can do? Are you able to test for specific organic compounds?
3. Is it possible for organic chemicals to reform in your process?
4. How likely is it that water recycling can be implemented?
5. How likely do you believe it to be that you will request and receive permission from the Army to transport and use its 10gpm unit currently located at McAllister?
6. If a 10gpm unit must be fabricated, what would the timeline for introduction into the process look like? How would this affect the 14 month timeline initially provided? If so, would such fabrication potentially exceed the current budget?
7. Is the handling of the water waste-stream something that GA manages or would this need to be subcontracted? (i.e. shuttle trucks, pumping, etc.)
8. Does GA already have potential primes that they are considering partnering with?
9. Please list any infrastructure requirements.
10. What engineering modifications would you recommend to minimizing the problems resulting from supersaturation of the SCWO slurry, which could potentially lead to malfunction of the machines and disrupt the continuous operation of the machines.
11. Is the laboratory you use for testing of water and emissions accredited by the state and EPA?
12. There is some concern that insolubility of the ground M6 material could potentially lead to the precipitation of solids within the SCWO units, leading to a disruption of the continuous process and even system malfunction. What engineering modifications of the units could be performed beforehand in order to minimize such problems, and how are such problems typically addressed if and when they do occur?
13. We have concerns about the total volume of aqueous effluent that would be generated by the SCWO process on M6, what system and/or process modifications could be performed in order to be able to reuse the water during the SCWO process? What additional water feedback infrastructure and equipment would be necessary to accomplish this? For example, what filtration and degassing facilities would be required?
14. Have you obtained verification from Minden waste water treatment system (Camp Minden) of their ability to process this additional water? The Design capacity is only 250,000 gpd.
15. Your chemical evaluation of the effluent must include Priority Pollutants as well as ph, conductivity, TOC and CBOD.

1. Would you provide a process flow diagram or schematic of the process and of the pollution control system?
2. Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?
3. Can you identify the waste streams and how much waste material will be generated for each from this process?
4. Can you identify any recycled or byproduct material and how much is generated?
5. Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.

Munirem

- 1- Please provide additional explanation of the bioremediation process of the wastewater.
 - 2- Must the wastewater be remediated prior to recycling in the process?
 - 3- How is the cellulosic solid residue separated from the finished water?
 - 4- List the types of scrubbers used.
 - 5- Do you have a continuous monitor in your process?
 - 6- What are the organic compounds to be tested?
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- 1- Would you provide a process flow diagram or schematic of the process and of the pollution control system?
 - 2- Can you identify all off-gases produced from this process, the amounts of each, and what air pollution controls are used for each?
 - 3- Can you identify all waste materials and how much is generated for each? How much wastewater for disposal will be produced from this process?
 - 4- Can you provide any and all analytical data, including but not limited to air emissions, effluent testing, solid or hazardous waste testing. Please identify if any of the data relates to propellant, and specifically M6.
 - 5- Can you identify successful demil projects your company completed in the United States and what type and amount of material was processed?

US Demil