National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
White Sands Test Facility
P.O. Box 20
Las Cruces, NM 88004-0020

September 20, 2022

Reply to Attn of: RE-22-124

Mr. Rick Shean, Bureau Chief
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

Subject: Plugging and Abandonment of WSTF Wells 400-KV-142, 400-LV-125, BLM-2-482, NASA 8, PFE-4, and PFE-6

On May 24, 2022, NASA submitted Plugging Plans of Operation for White Sands Test Facility (WSTF) wells 400-KV-142, 400-LV-125, BLM-2-482, NASA 8, PFE-4, and PFE-6 to the New Mexico Office of the State Engineer (NMOSE) in accordance with the NASA RCRA Permit (Section 19.4) referencing 19.27.4.30 C NMAC. The NMOSE approved these plans on June 10, 2022.

NASA is providing these plugging plans for NMED's information in accordance with Section 4.5 of the NMED-approved WSTF Groundwater Monitoring Plan. NASA plans to plug and abandon these wells in conjunction with several other wells in November and December 2022. Paper copies of the six plugging plans are provided as Enclosure 1. A CD-ROM with the plugging plans in PDF is provided as Enclosure 2.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or comments concerning this submittal, please contact Antonette Doherty of my staff at 575-202-5406.

MICHAEL ZIGMOND
Digitally signed by MICHAEL ZIGMOND
Date: 2022.09.20 09:26:30 -06'00'

For: Timothy J. Davis
Chief, Environmental Office
2 Enclosures

cc:
Mr. Gabriel Acevedo
Hazardous Waste Bureau
New Mexico Environment Department
2905 Rodeo Park Drive East, Building 1
Santa Fe, NM 87505

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: PFE-4 (NMOSE LRG-10454)

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

2022 MAY 25 AM 9:55 RECEIVED

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 38 deg, 30 min, 35.707 sec
Longitude: -106 deg, 38 min, 48.811 sec, NAD 83

2) Reason(s) for plugging well(s):

Well PFE-4 is located outside the known contaminant plume and has no value as a pollution recovery well.

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): Refer to PFE-4 analytical data (Enclosure 9)

5) Static water level: 503.5 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 876.5 feet

LRG-10454
TRN: 727442

7) Inside diameter of innermost casing: 7.85 inches.

8) Casing material: CertainTeed Standard Dimension Ratio (SDR) 17 PVC

9) The well was constructed with:

☐ an open-hole production interval, state the open interval:

☒ a well screen or perforated pipe, state the screened interval(s): 397.4-856.2 ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? Yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? Yes If yes, please describe:

Nominal 20-in. surface casing set to 110 ft in a 26-in. diameter borehole and cemented to surface.

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 2,203.7 gallons (294.6 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: X batch-mixed and delivered to the site

_____ mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

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OFFICE OF THE STATE ENGINEER
LAS CRUCES, NEW MEXICO

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:29:29 -06'00' — 05/24/2022

Signature of Applicant — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

✓ Approved subject to the attached conditions.

_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June, 2022

STATE OF NEW MEXICO STATE ENGINEER

Mike A. Hamman, STATE ENGINEER

BY Cheryl S. Thacker
Cheryl Thacker
Water Resource Manager

w Mexico State Engineer

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			876.5 ft
Theoretical volume of grout required per interval (gallons)			2,203.7 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			Delivered
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: PFE-6 (LRG-10456, cancele

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

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LAS CRUCES, NEW MEXICO

1) GPS Well Location: Latitude: 32 deg, 31 min, 12.504 sec
Longitude: -106 deg, 38 min, 54.918 sec, NAD 83

2) Reason(s) for plugging well(s):

Poor production (~5 gpm). Not suitable as a pollution recovery well. There is only 30 ft of water in the well due to dropping water levels.

3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): No analytical data available per item 2. No samples taken.

5) Static water level: 502.1 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 539.4 feet

LRG-10456
TRN: 727441

7) Inside diameter of innermost casing: 7.85 inches.

8) Casing material: CertainTeed Standard Dimension Ratio (SDR) 17 PVC

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☒ a well screen or perforated pipe, state the screened interval(s): 434.5 - 534.1 ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? Yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? Yes If yes, please describe:

Nominal 20-in. surface casing set to 101 ft in a 26-in. diameter borehole and cemented to surface.

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 1,356.2 gallons (181.3 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: X batch-mixed and delivered to the site

_____ mixed on site

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7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

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STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:27:55 -06'00' — 05/24/2022

Signature of Applicant — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

✓ Approved subject to the attached conditions.

_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June 2022

STATE OF NEW MEXICO STATE ENGINEER

Mike A. Hamman, P.E, STATE ENGINEER

By: BY Cheryl Thacker
Water Resource Manager

xico State Engineer

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			539.4 ft
Theoretical volume of grout required per interval (gallons)			1356.2 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			Delivered
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA

WELL PLUGGING PLAN OF OPERATIONS

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu. prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: N/A; NASA well NASA-8 (POD1)

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 30 min, 31.728 sec
Longitude: -106 deg, 36 min, 50.11 sec, NAD 83

2) Reason(s) for plugging well(s):

The groundwater level has dropped below the screened interval and the well can no longer be sampled.

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): Refer to NASA 8 analytical data (Enclosure 9)

5) Static water level: 185.82 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 197 feet

LRG-18412 LRG-18412-POD1
TRN: 727449

7) Inside diameter of innermost casing: 2 inches.

8) Casing material: Schedule 80 PVC to 162.00 ft; Schedule 40 stainless steel to 197.00 ft

9) The well was constructed with:

☐ an open-hole production interval, state the open interval:

☒ a well screen or perforated pipe, state the screened interval(s): 172-192 ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? Yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? Yes If yes, please describe:

Nominal 6-inch surface casing set to 30 ft in an (unrecorded) diameter borehole and cemented to surface.

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 32.15 gallons (4.30 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

Well NASA 8 was equipped with a low-flow bladder pump sampling system. Due to declining groundwater water levels, the well can no longer be sampled, and it is unlikely the groundwater will return to previous levels. The last two sampling events were in 2014 and 2018.

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:30:23 -06'00' — 05/24/2022

Signature of Applicant — Date

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✓ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June, 2022

STATE OF NEW MEXICO STATE ENGINEER

Mike A. Hamman, P.E, STATE ENGINEER

By BY Cheryl Thacker
Water Resource Manager

exico State Engineer

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			197 ft
Theoretical volume of grout required per interval (gallons)			32.15 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

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TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA

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STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

WELL PLUGGING PLAN OF OPERATIONS

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Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

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II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: N/A; NASA well BLM-2-482 (POD1)

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 33 min, 42.348 sec
Longitude: -106 deg, 38 min, 54.827 sec, NAD 83

2) Reason(s) for plugging well(s):

The groundwater level has dropped below the screened interval and the well can no longer be sampled.

3) Was well used for any type of monitoring program? Yes If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): Refer to BLM-2-482 analytical data (Enclosure 9)

5) Static water level: 492.95 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 498.4 feet

LRG-18413 LRG-18413-POD1
TRN: 727453

7) Inside diameter of innermost casing: 3.75 inches.

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ROSWELL, NEW MEXICO

8) Casing material: Stainless steel SCD 5 to 382.3 ft; SCD 10 to 498.4 ft

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

■ a well screen or perforated pipe, state the screened interval(s): 482.4-492.8 ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? Yes If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? Yes If yes, please describe:

Nominal 10-inch surface casing set to 100 ft in a 12 1/4 in. diameter borehole and cemented to surface.

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 286 gallons (38.2 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

Well BLM-2-482 was equipped with a low-flow sampling system with the pump intake set at ~487.5 ft bgs.
Well BLM-2-482 was sampled annually until 2012, when water level dropped below the lowest possible pump intake.

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:31:26 -06'00' — 05/24/2022

Signature of Applicant — Date

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2022 MAY 25 AM 9:57
STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

✓ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June, 2022.

STATE OF NEW MEXICO STATE ENGINEER

By: Mike A. Hamman, P.E, STATE ENGINEER — xico State Engineer

BY Cheryl Thacker
Water Resource Manager

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			498.4 ft
Theoretical volume of grout required per interval (gallons)			286 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA

WELL PLUGGING PLAN OF OPERATIONS

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LAS CRUCES, NEW MEXICO

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: N/A; NASA well 400-LV-125 (POD1)

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 31 min, 29.891 sec
Longitude: -106 deg, 36 min, 19.51 sec, NAD 83

2) Reason(s) for plugging well(s):

Water was not encountered during drilling of this well and no pump was ever set in this borehole. Well is not part of sampling schedule.

3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): No analytical data available per item 2. No samples taken.

5) Static water level: NA feet below land surface / feet above land surface (circle one)

6) Depth of the well: 145.3 feet

LRG-18414
TRN: 727457

LRG-18414-POD1

7) Inside diameter of innermost casing: 2 inches.

8) Casing material: Schedule 40 PVC

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☒ a well screen or perforated pipe, state the screened interval(s): 125-140ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? NA If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? NA If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 23.7 gallons (3.2 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

RECEIVED
2022 MAY 25 AM 9:56
STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:32:19 -06'00' — 05/24/2022

Signature of Applicant — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

✓ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June, 2022

STATE OF NEW MEXICO STATE ENGINEER

Mike A. Hamman, P.E, STATE ENGINEER — Mexico State Engineer

BY Cheryl S. Thacker
Cheryl Thacker
Water Resource Manager

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			145.3 ft
Theoretical volume of grout required per interval (gallons)			23.7 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA

WELL PLUGGING PLAN OF OPERATIONS

2022 MAY 25 AM 08

STATE ENGINEER OFFICE
LAS CRUCES, NEW MEXICO

NOTE: A Well Plugging Plan of Operations shall be filed with and accepted by the Office of the State Engineer prior to plugging. This form may be used to plug a single well, or if you are plugging multiple monitoring wells on the same site using the same plugging methodology.

Alert! Your well may be eligible to participate in the Aquifer Mapping Program (AMP)-NM Bureau of Geology geoinfo.nmt.edu/resources/water/cgmn/ if within an area of interest and meets the minimum construction requirements, such as there is still water in your well, and the well construction reflected in a well record and log is not compromised, contact AMP at 575-835-5038 or -6951, or by email nmbg-waterlevels@nmt.edu, prior to completing this prior form. Showing proof to the OSE that your well was accepted in this program, may delay the plugging of your well until a later date.

I. FILING FEE: There is no filing fee for this form.

II. GENERAL / WELL OWNERSHIP: ☐ Check here if proposing one plan for multiple monitoring wells on the same site and attaching WD-08m

Existing Office of the State Engineer POD Number (Well Number) for well to be plugged: N/A; NASA well 400-KV-142 (POD 1)

Name of well owner: NASA Johnson Space Center White Sands Test Facility (Contact: Timothy Davis)

Mailing address: P.O. Box 20 County: Dona Ana

City: Las Cruces State: NM Zip code: 88004

Phone number: (575) 524-5024 E-mail: timothy.j.davis@nasa.gov

III. WELL DRILLER INFORMATION:

Well Driller contracted to provide plugging services: Not contracted yet

New Mexico Well Driller License No.: NA Expiration Date: NA

IV. WELL INFORMATION: ☐ **Check here if this plan describes method for plugging multiple monitoring wells on the same site and attach supplemental form WD-08m and skip to #2 in this section.**

Note: A copy of the existing Well Record for the well(s) to be plugged should be attached to this plan.

1) GPS Well Location: Latitude: 32 deg, 31 min, 29.225 sec
Longitude: -106 deg, 36 min, 21.685 sec, NAD 83

2) Reason(s) for plugging well(s):

The well has insufficient recharge to warrant installing a dedicated sampling system. Well is not part of sampling schedule.

3) Was well used for any type of monitoring program? No If yes, please use section VII of this form to detail what hydrogeologic parameters were monitored. If the well was used to monitor contaminated or poor quality water, authorization from the New Mexico Environment Department may be required prior to plugging.

4) Does the well tap brackish, saline, or otherwise poor quality water? Yes If yes, provide additional detail, including analytical results and/or laboratory report(s): No analytical data available per item 2. No samples taken.

5) Static water level: 155 feet below land surface / feet above land surface (circle one)

6) Depth of the well: 157.3 feet

LRG-18415
TRN: 727461

LRG-18415-POD1

7) Inside diameter of innermost casing: 2 inches.

8) Casing material: Schedule 40 PVC

9) The well was constructed with:

☐ an open-hole production interval, state the open interval: _____

☒ a well screen or perforated pipe, state the screened interval(s): 142-157 ft

10) What annular interval surrounding the artesian casing of this well is cement-grouted? NA

11) Was the well built with surface casing? No If yes, is the annulus surrounding the surface casing grouted or otherwise sealed? NA If yes, please describe:

12) Has all pumping equipment and associated piping been removed from the well? Yes If not, describe remaining equipment and intentions to remove prior to plugging in Section VII of this form.

V. DESCRIPTION OF PLANNED WELL PLUGGING:

☐ **If plugging method differs between multiple wells on same site, a separate form must be completed for each method.**

Note: If this plan proposes to plug an artesian well in a way other than with cement grout, placed bottom to top with a tremie pipe, a detailed diagram of the well showing proposed final plugged configuration shall be attached, as well as any additional technical information, such as geophysical logs, that are necessary to adequately describe the proposal. Attach a copy of any signed OSE variance to this plugging plan.

Also, if this planned plugging plan requires a variance to 19.27.4 NMAC, attach a detailed variance request signed by the applicant.

1) Describe the method by which cement grout shall be placed in the well, or describe requested plugging methodology proposed for the well:

The well casing will be cemented from bottom up using tremie pipe, including all screened intervals and blank casing.

2) Will well head be cut-off below land surface after plugging? Yes, 6 inches below ground surface

VI. PLUGGING AND SEALING MATERIALS:

Note: The plugging of a well that taps poor quality water may require the use of a specialty cement or specialty sealant. Attach a copy of the batch mix recipe from the cement company and/or product description for specialty cement mixes or any sealant that deviates from the list of OSE approved sealants.

1) For plugging intervals that employ cement grout, complete and attach Table A.

2) For plugging intervals that will employ approved non-cement based sealant(s), complete and attach Table B.

3) Theoretical volume of grout required to plug the well to land surface: 25.7 gallons (3.4 cubic ft)

4) Type of Cement proposed: Portland Type II neat cement with 5% bentonite by weight

5) Proposed cement grout mix: 8.5 gallons of water per 94 pound sack of Portland cement.

6) Will the grout be: _____ batch-mixed and delivered to the site

X mixed on site

7) Grout additives requested, and percent by dry weight relative to cement:

5% by weight Bentonite powder (~4.7 lbs/94 lb bag of Portland Type II cement)

8) Additional notes and calculations:

The mix of neat cement and 5% bentonite will require 8.5 gallons of water per 94 lb bag of cement; 5.2 gallons per 94 lb bag of cement and 0.7 gallons per percent of bentonite.

VII. ADDITIONAL INFORMATION: List additional information below, or on separate sheet(s):

RECEIVED
2022 MAY 25 AM 9:58
STATE ENGINEER
LAS CRUCES, NEW MEXICO

VIII. SIGNATURE:

I, Amanda Skarsgard for: Timothy J. Davis, say that I have carefully read the foregoing Well Plugging Plan of Operations and any attachments, which are a part hereof; that I am familiar with the rules and regulations of the State Engineer pertaining to the plugging of wells and will comply with them, and that each and all of the statements in the Well Plugging Plan of Operations and attachments are true to the best of my knowledge and belief.

AMANDA SKARSGARD Digitally signed by AMANDA SKARSGARD Date: 2022.05.24 10:33:08 -06'00' — 05/24/2022

Signature of Applicant — Date

IX. ACTION OF THE STATE ENGINEER:

This Well Plugging Plan of Operations is:

✓ Approved subject to the attached conditions.
_____ Not approved for the reasons provided on the attached letter.

Witness my hand and official seal this 10th day of June, 2022

STATE OF NEW MEXICO STATE ENGINEER

Mike A. Hamman, P.E, STATE ENGINEER

BY _____
Cheryl Thacker
Water Resource Manager

Mexico State Engineer

TABLE A - For plugging intervals that employ cement grout. Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of grout placement (ft bgl)			Ground Surface
Bottom of proposed interval of grout placement (ft bgl)			157.3 ft
Theoretical volume of grout required per interval (gallons)			25.7 gallons
Proposed cement grout mix gallons of water per 94-lb. sack of Portland cement			8.5 gallons of water per 94 lb bag of Portland Type II cement with 5% bentonite powder.
Mixed on-site or batch-mixed and delivered?			On Site
Grout additive 1 requested			Powdered bentonite
Additive 1 percent by dry weight relative to cement			5%
Grout additive 2 requested			NA
Additive 2 percent by dry weight relative to cement			NA

TABLE B - For plugging intervals that will employ approved non-cement based sealant(s). Start with deepest interval.

	Interval 1 – deepest	Interval 2	Interval 3 – most shallow
			Note: if the well is non-artesian and breaches only one aquifer, use only this column.
Top of proposed interval of sealant placement (ft bgl)			NA
Bottom of proposed sealant of grout placement (ft bgl)			NA
Theoretical volume of sealant required per interval (gallons)			NA
Proposed abandonment sealant (manufacturer and trade name)			NA