Depopulation & Removal Plan with
Narrative to Application for DIPP Cow Buy-Out Indemnity Benefits
For Highland Dairy Cow Herd

Animal Deaths Caused by Cannon Air Force Base PFAS Contamination

April 19, 2022

For the Immediate Attention of:

Dr. Ralph Zimmerman
State Veterinarian
New Mexico Livestock Board
(ralph.zimmerman@state.nm.us) ((505) 841-6161)

Hon. James C. Kenney
Cabinet Secretary
New Mexico Environment Department (NMED)
(james.kenney@state.nm.us) ((505) 827-2855)

Ms. Sumer Priest
County Executive Director
Curry County (N.M.) Farm Service Agency Office
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FOR OFFICE USES ONLY
NM State Veterinarian Approved:_____ Date: 4/20/2022
NMED **For Section 9 -** **Removal Plan Only** Approved:_____ Date: 5/12/2022
Curry COC Received:_____ Date:

Applicant:

Highland Dairy
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1. Application Criteria:

This Depopulation & Removal Plan and Application Narrative for DIPP Cow Buy-Out Indemnity Benefits is presented to the New Mexico Environment Department and the New Mexico State Veterinarian pursuant to 7 CFR § 760.10 et seq., and in particular, in response to the criteria in § 760.12. The Applicant is Highland Dairy of Curry County, New Mexico and is made by and through its general partners, Art and Renee Schaap, who reside on the dairy property. The applicants are represented by RuttenKern Policy Group and Dr. Robert Hagevoort, whose contact information is provided above.

Once this Depopulation & Removal Plan is approved by these state authorities, this information is intended to be incorporated into an application Form 373 B (Section One) that the USDA Farm Service Agency (FSA) published on April 1, 2022. The criteria in the regulation and the application form place a burden on the Applicant to produce documents evidencing the circumstances qualifying the dairy for indemnity benefits.

For the sake of efficiency, the applicant incorporates those documents previously submitted to the FSA in connection with its DIPP Milk Payment applications, including notably the dairy's monthly PFAS milk test results contained therein. In other respects, the Applicant's responses incorporate documents and correspondence which are found in a 'dropbox' file hyperlinked to this document. The dropbox file is labeled "Highland 2022 DIPP App" (for access, please contact Highland's representative John B. Kern at jbk@ruttenkern.com). The subject files contains more than 50 documents referenced in this Application narrative.)

Drawing from 7 CFR § 760.10, .12 and .13, the applicant references the following elements required to substantiate a claim for benefits under the newly announced DIPP Cow Buy-Out program:

§ 760.10 Indemnity payments for cows.

(a) DAFP will determine eligibility for DIPP indemnification based on if the cows of the affected farmer are likely to be not marketable for 3 months or longer [from the date the affected farmer submits an application for cow indemnification per 7 CFR § 760.13]. The Deputy Administrator will review the following factors in making that determination:

(1) Milk testing results;

The Applicant states that the Deputy Director of the USDA Farm Service Agency has each and all of the monthly milk test results previously provided in connection with the October 2018 to December 2020 Milk Payment benefit applications. In the event these should be needed once again, please advise without delay.

(2) Non marketability of affected cows through commercial marketing facilities;

As referenced in response to the questions posed in 760.12(a) and (a)(4) below, the Applicant readily establishes with the documentation incorporated therein that the Highland Dairy herd was quarantined by the USDA FSIS, the FDA and the New Mexico Department of Agriculture beginning in October 2018 and continuously. Moreover, the

USDA FSIS took very resounding steps in October and/or November 2018 to eliminate the market potential for these animals.

(3) Type and source of chemical residues impacting the milk and animal tissues; and

As referenced in a more detailed response to 760.12(a), the perfluorooctanesulfonic acid (C8HF1703S) ("PFOS") has stood as the reference compound reflecting the presence of "PFAS" chemicals found in the Highland Dairy animals and milk products. Considerable testing has been applied to the milk, tissue, water, soil and silage of Highland Dairy and its farms situated adjacent to the Cannon Air Force Base near Clovis, New Mexico.

(4) Projected duration for chemical residue reduction including the actions taken by the affected farmer to reduce the chemical residues to marketable levels since the affected cows were discovered.

The Applicant has endured a perpetual quarantine associated with these chemical compounds for 42 months since October 2018 and this is continuing. More than 3,000 dairy cows have died on the dairy at this point in time and another 617 adult cows are to be euthanized pursuant to the depopulation and removal plan. The persistent nature of PFAS led to a lengthy study organized by the USDA FSIS of the Highland Dairy herd in 2019, which for all intents and purposes became a government laboratory during that calendar year while the possibility of the rehabilitation of the animals was investigated.

The PFAS dilemma has also led to a slow and arduous policy-making effort undertaken by both the Trump and Biden EPAs, and as of the current date there are no effective means of proposing a ready disposal plan for the animals which are some 85% moisture on the hoof. Accordingly, the removal plan presented here is structured in three phases following the depopulation of the herd. These phases are expected to take a minimum of six (6) months to allow the farmer and the agencies with authority over the disposition of the contaminated animal carcasses (including NMED through its Emergency Hazardous Waste Removal Program and the USDA NRCS through its EQIP program) to address the permanent disposition of this population of adulterated animals. A decision tree is presented hereafter describing the removal process in full.

(b) See § 760.11 for indemnity payment eligibility for bred and open heifers.

The applicant is not seeking indemnity payments for bred and open heifers.

(c) Affected farmers applying for indemnification of cows, including heifers, must develop a removal plan both to permanently remove the affected cows by depopulating the cows.

The Applicant's removal plan is believed to be the first of its kind, and has been developed in consultation with the USDA Farm Service Agency, the USDA NRCS, the State Veterinarian of New Mexico, and the New Mexico Departments of Agriculture and the Environment.

(1) The removal plan for affected cows for which an affected farmer applies for indemnification under DIPP must be approved by the applicable public agency where the cows are located and must be in accordance with any applicable EPA and public agency depopulation and animal

disposal requirements and guidelines, including contaminant disposal requirements, in the State where the affected cows are located.

The Applicant farmer is in the State of New Mexico and the Applicant has submitted this Depopulation & Removal Plan and DIPP Application Narrative to the NM Environment Department and the State Veterinarian for approval. The Removal Plan incorporates the depopulation plan and methodology in regard to those 617 animals still living.

The Applicant is advised that the state approval of the Depopulation Plan was not essential to the FSA's consideration and approval of benefits pursuant to "Section Two" of USDA FSA Form 373 B relating to those animals that have died prior to the date of the submission of that form (April 12, 2022 – Application 001). Moreover, the Applicant expects to supplement the original application dealing with animals that died from November 2018 to April 10, 2022, and supplement Section 2 of the form with those that die between April 11, 2022 and the date of the approval of the depopulation application pursuant to Section 1 of the form. That application will be referred to herein as Application 003.

To be clear, the slate of applications appears to be best addressed as follows:

Application	**Form 373B**	**Effective Date**	**Coverage**
001	Section 2	April 10, 2022	Deceased Animals
002	Section 1	TBD - Submitted upon approval of the Removal Plan by NMED / NM State Veterinarian	Living Animals
003	Section 2	TBD - Depopulation Date	Animals that died after April 10, 2022 while waiting for approval of Removal Plan and actual depopulation

(2) The approved removal plan must be submitted with the application for indemnification.

This Depopulation & Removal Plan and DIPP Application Narrative constitutes the Removal Plan and is to be incorporated into the application for benefit once approved by the authorities in the State of New Mexico. The Applicant is therefore submitting this Depopulation Plan & Removal Plan and DIPP Application Narrative to the NMED and the State Veterinarian as well as the County Office of the USDA Farm Service Agency in respect of the application for benefits available pursuant to Section One of USDA FSA Form 373 B.

(d) The amount of an indemnity payment for cows to an affected farmer who is determined by the Deputy Administrator to be eligible for indemnification and by the county committee to be in compliance with all the terms and conditions of this subpart will be based on the national average fair market value of the cows. DIPP cow indemnification will be based on the 100% value of the Livestock Indemnity Program (LIP) rates as applicable for the calendar year for milk indemnification established for dairy cows, per head.

For example, for a 100-cow farm: 100 cows multiplied by $1,300 (2021 LIP rate based on 100% value of average cow) = $130,000 payment.

As presented in Section 10 of the Removal Plan and Application Narrative and per the application schedule laid out above, the Applicant has proposed three applications – one in which the animals have predeceased the first Form 373 B Section 2 application (Application 001), another pursuant to Form 373B Section 1 in which the depopulation project will be undertaken under the guidance of the State Veterinarian, incorporating the approved Removal Plan (Application 002), and a final Form 373 B Section 2 application for a "catch-up payment" for those animals that died of natural causes after the date identified as the cut-off date of the original deceased cow indemnity Section 2 application (April 10, 2022) and the actual depopulation undertaking (Application 003). The first and third applications should generate payments of a 100% payment benefit and the second application pursuant to Form 373 B Section 1 should engender a 50% payment upon acceptance of the Application and a reconciliation payment upon delivery of the advice that the depopulation and removal plan has been implemented.

(e) For any cow indemnification payment under 7 CFR § 760.10 or § 760.11, the affected farmer has the option to receive 50% of calculated payment in advance after application approval with the remaining fifty percent paid after the affected cows have been depopulated and removed. Otherwise, the affected farmer may choose to receive 100% of payment after cows have been depopulated and removed. Documented records of depopulation and removal of affected cows must be provided to FSA to the satisfaction of the county committee, before the final payment will be made.

The Applicant will fully comply with these criteria pertaining to the depopulation and removal and respectfully asks that all of the animals previously deceased and placed in compost are found to be suited to the 100% payment upon application, while the still living animals should qualify for an immediate 50% payment benefit with the balance delivered upon the satisfaction of the appropriate recording of depopulation and the commencement of the removal process.

(f) Upon written request from an affected farmer on a form authorized by the Deputy Administrator, the Deputy Administrator may approve, at the Deputy Administrator's discretion, indemnification of additional affected cows as specified in ¶¶ (f)(1) through (3) of this section.

The Applicant considers that this provision serves as the basis for the segregation of the applications into two modules – a pair of applications for those animals already deceased and which will have been deceased at the final application date, and another for those to be depopulated. The USDA published the relevant form on April 1, 2022.

(1) The affected cows were depopulated or died above normal mortality rates for cows between approval of the affected farmer's application for the first month of milk indemnity and public agency approval of the affected farmer's removal plan for cow indemnification. Normal mortality rates established annually by the FSA State Committee for their state for the following cow and heifer weight groups will be used:

(i) Dairy, nonadult less than 400 pounds;
(ii) Dairy, nonadult 400 pounds or more; and
(iii) Dairy, adult cow.

As stated in more detail herein, the mortality rate for adult dairy cows in New Mexico is 1.5% per annum. The mortality rate for non-adult cows greater than 400 lbs is the same, while the mortality rate for non-adult dairy cows weighing less than 400 lbs is 5% per annum. The Applicant's information in this regard was provided by the Director of Dairy Programs for the New Mexico Department of Agriculture.

In its first application for just those animals that have predeceased the publication of the Form 373-B application and this response. The applicant has detailed the head count figures in this DIPP Application Narrative at Section 10 below.

None of the animals that are the subject of any of the three applications are non-adults. They are all adult dairy cows.

(2) This request may include both cows that were included in applications for milk indemnity and heifers that were affected from the same loss.

These cows were included in the Milk Indemnity program and were affected by the same loss – exposure to PFAS chemicals from water flowing into Highland Dairy's wells from the Cannon Air Force Base.

(3) An affected farmer making such a request must submit the information specified in § 760.12(c).

See the response to § 760.12(c) above and throughout this Depopulation & Removal Plan.

(g) Affected cows that are marketed as cull or for breeding are not eligible for indemnification.

Since the Applicant's entire adult herd has been subject to a 'no sale order' or 'quarantine' issued by the USDA FSIS, the FDA and the New Mexico Department of Agriculture beginning in October 2018, there have been no animals on the Highland Dairy subject to being marketed as cull or for breeding to other dairies, etc.

Accordingly, all are eligible for indemnification under this newly developed program. Heifers that were never exposed to PFAS water (that is after filters were acquired at significant expense) are not included and are not subject to these requests. Likewise the Form 373-B application form makes no room for, nor mention of, bulls which have been quarantined on Highland Dairy.

** * * **

§ 760.12 Information to be furnished for payment on dairy cows, and bred and open heifers.

(a) To apply for DIPP for affected cows, the affected farmer must provide the county committee complete and accurate information to enable the Deputy Administrator to make the determinations required in this subpart in addition to providing the information requested in § 760.6(a), (b), (h), and (i), if not previously provided to FSA in a milk indemnity application. The information specified in this section must be submitted as part of the cow indemnity application and includes, but is not limited to, the following items:

The Applicant incorporates each and all of those DIPP milk indemnity payment applications and

submissions provided to the USDA Farm Service Agency for which it has qualified during the period beginning November 2018 to the present, including those documents which pertain to matters which were not approved in full relative to October, November, and December 2020, as well as January and February 2021, and which on information and belief, remain subject to administrative appeal.

The Applicant further states that:

a. the information referenced in the regulation numbered as "760.6(a)" is (1) a copy of the October 18, 2018 notice from the New Mexico Department of Agriculture removing Highland Dairy's milk from the commercial market and (2) a letter dated October 31, 2018 to the Applicant from the NMDA relaying information about the USDA and FDA's concerns related to PFAS contamination, and (3) the November 5, 2018 letter from the New Mexico Department of Agriculture suspending the Grade A Permit for Highland Dairy. See, in addition, the cancellation letter from Dean Foods, which was the cooperative which purchased milk from Highland Dairy, dated October 15, 2018, attached for further refence, although not directly responsive to this subsection pertaining to the government authority's removal of milk products from the market. All are found in the link here;

b. two items responding to "760.6(b)" are found here and include a specific reference to the PFAS substance causing the removal from the commercial market and is referenced in two items of correspondence from the U.S. Air Force, including a letter with a salutation of "Dear Property Owner" dated August 24, 2018 serving as the original notification of the problems faced by the dairy and a second letter from the Air Force dated September 13, 2018, both of which reference the substance identified by the NMDA in its letter of October 18, 2018;

c. there is no 'pesticide, chemical, or toxic substance' information available to the Applicant which is responsive to the regulation cited as "760.6(h)" considering that the Aqueous Film-Forming Foam products containing the PFAS contaminants at issue were utilized and spread into the water supply the U.S. Air Force in its fire-fighting training activities at Cannon Air Force Base adjacent to the dairy farm, noting that the Applicant is advised that the Air Force;

d. has concluded its use of some of the compounds at issue and instituted the use of other compounds, however, the exact details are unknown to the Applicant except as has been disclosed in an August 22, 2018 report concerning Cannon Air Force Bases linked here and as may have been disclosed during discovery in pending civil litigation; and,

e. responding to the regulation at "760.6(i)", concerning the sources and laboratory results of the 'chemical or toxic substances that caused the contamination", the Applicant reports that a series of silage tests were performed by the New Mexico Department of Agriculture on the silage generated at Highland Dairy's farm operations for the feed supply provided to the animals at Highland Dairy and those results are linked here. This information was collected over three different time frames including May 2020, September 2020 and October 2020. The NMDA report was issued to the Applicant on November 2, 2020. This information is accompanied by a field map of the Highland Dairy farms as well as PFAS soil testing results.

The Applicant believes that most, if not all, of this information has been provided through the correspondence and applications previously submitted to the USDA Farm Service Agency but is providing the same out of an abundance of caution.

(1) An inventory of all dairy cows as of the date of application including lactating cows, bred heifers, and open heifers on the farm;

In November 2018, the inventory of live adult dairy cows (on average) was 2,948. In July 2019, as a representative date in the middle of the year, the inventory was 2,934. In July 2020, the inventory of adult dairy cows was Highland Dairy had dropped to 2,589. By July of 2021, the inventory of adult dairy cows had dropped to 1,812 head. As of the 10th of April, 2022, the adult dairy cow population was 907. Highland Dairy states that the current inventory includes 617 live adult dairy cows, none of which are currently lactating.

Highland Dairy presently has 3,047 deceased adult dairy cows on the farm, as explained hereafter.

(2) A detailed description and timeline of how, where, and when cows will be depopulated and permanently removed from the farm (the removal plan);

Please refer to Section 4 below, for the Highland Dairy depopulation and removal plan pertaining to the remaining 617 animals. Please also see the guidance from state and federal authorities (Section 8), the Removal Plan (Section 9) and the Soil Removal Plan (Section 11).

(3) Documentation of public agency approval of the removal plan for cow depopulation and cow and contaminate disposal in accordance with any applicable EPA and public agency disposal requirements and guidelines;

This information is provided as the narrative to the application. Please refer to the first page of this application for the approvals of the relevant authorities, Ralph Zimmerman, DMV, the New Mexico State Veterinarian and the James Kenney, Secretary (or his representative) of the New Mexico Environment Department.

(4) Documentation from 2 separate commercial markets stating that such market declined to accept the affected cows through a cull cow market, slaughter facility, or processing facility due to elevated levels of chemical residues;

See the documents at this link. These include:

a. October/November 2018 email from Gary A. Davis, DVM at USDA FSIS sent to the "Meat Institute" instructing the industry generally that "dairy cattle from Highland Dairy near Clovis New Mexico is not eligible to be slaughtered and processed for human food;"

b. November 20, 2018 memorandum to members and correspondence among members of the Southwest Meat Association and JBS, a major processor of meat products agreeing to not buy meat products from Highland Dairy;

c. February 6, 2019 correspondence from attorney Randy Knudson to the Southwest Meat Association, and the April 16, 2019 response of attorney David Miller on the association's behalf, along with a November 20, 2018 Press Release from the North American Meat Association declaring that the [FSIS] consider the cows, and therefore any meat derived from them, "adultered" and FSIS has informed state animal health officials the cattle should not be shipped to a federally-inspected establishment (with several news articles

attached), all to the effect of cancelling the Applicant's access to the beef processing market; and,

d. February 26, 2019 letter from Charles R. Rogers of Clovis Livestock, Inc. to Mr. Schaap denying access to the Eastern New Mexico region's largest livestock auction.

(5) Documentation of any projected timelines for reducing chemical residues, any actions the affected farmer has taken to reduce chemical residues to marketable levels including any documents verifying steps undertaken, and any professional assistance obtained, including, discussion of strategy with the public agencies; and

Please see the information provided in Section 7 below pertaining to the information and guidance received to date from state and federal agencies, "Prior Guidance Received from State and Federal Authorities". Please also see the information provided here relative to remediation and clean-up attempts, mitigation expenses, and related investments. The Applicant has installed a water filtration system at a cost in excess of $160,000 (see RK Filtration System documents in the information cited in this paragraph). The Applicant has retained the services of no fewer than five law firms, including bankruptcy counsel (as a precautionary measure), litigation counsel, lobbyists, and local counsel. The Applicant has conducted extensive testing for the presence of PFAS on the Highland Dairy property, incurring costs in water testing, soil testing, milk testing, and silage testing. The Applicants themselves had monitored their own blood for PFAS contamination. (Note that the information provided in the attached link pertaining to 'other mitigation efforts' is current only through 2020 at which time it had reached a financial burden in excess of $500,000.)

The Applicant spent nearly one year during 2019 working with the USDA Food Safety Inspection Service in order to establish whether the contaminated or "adultered" animals could be rehabilitated. Records related to the FSIS interim and final report is incorporated here.

The Applicant has also searched for solutions relentlessly since the PFAS problem at the hands of the US Air Force was revealed to him in 2018, and has worked exhaustively with the New Mexico Department of Agriculture, the USDA Farm Service Agency, the Office of the Secretary of the USDA (in both Trump and Biden administrations), including through his registered lobbyist representatives at RuttenKern Policy Group and Alston & Bird, as well as worked with the New Mexico Environment Department, the U.S. Air Force, the New Mexico State Engineer, local city and county officials, members of the New Mexico state legislature, and other federal and state agencies. The more significant files pertaining to advocacy and 'strategy' correspondence with these agencies are attached here (including one letter from New Mexico Secretary of Agriculture Jeff Witte to USDA Secretary Tom Vilsack (with a response from the Secretary) and one letter from the New Mexico congressional delegation to Sec. Vilsack) but the complete file is much more extensive and can be provided upon request.

(6) Any other documentation that may support the determination that the affected cows or milk from such cows is likely to be not marketable for longer than 3 months; and other documentation as requested or determined to be necessary by the county committee or the Deputy Administrator.

In addition to the foregoing letters from the USDA and/or FDA pertaining to the Highland herd provided in response to section (a), and subsections (a)(1), (a)(4), and (a)(5) above, please refer to the letter found here, sent by the USDA and FDA exactly one year after the Highland Dairy milk

and cattle were placed in quarantine – significantly longer than the three month period referenced above – an October 22, 2019 communication from the Deputy Under Secretary for Food Safety at the USDA, Mindy Brashears, and the Deputy Commissioner Food Policy and Response at the FDA to Secretary Jeff Witte of the New Mexico Department of Agriculture, which incorporates the following remark:

> *"FDA and USDA agree that, absent any further action to mitigate herd exposure, an evaluation of the data collected from the Highland Dairy, including PFOS levels detected in blood and tissues from the herd, support the determination that any affected cattle should not enter the food supply. Further, based on FDA's evaluation of the PFOS levels in milk, absent any further action to mitigate herd exposure, milk from the affected cattle is considered adultered and should not enter the food supply."*

The above referenced correspondence between Sec. Witte and Sec. Perdue's successor, Hon. Tom Vilsack, continued with Sec. Witte writing a letter on April 20, 2021 requesting that the incoming Secretary of Agriculture implement a cattle buy-out at Highland Dairy. Secretary Vilsack responded on August 9, 2021 by stating that his staff was working on crafting a cattle buy-out program that should be responsive to the needs described by Sec. Witte concerning Highland Dairy. These items are attached here and speak to the continued and uninterrupted nature of the quarantine which the Applicant has endured for three and one-half years. The Applicant further notes that the adult cows on the dairy are no longer lactating.

(b) To apply for DIPP for bred and open heifers the affected farmer must provide the information specified in ¶ (a) of this section and: veterinarian records, blood test results, and other testing information requested by the county committee for the recommendation specified in § 760.11(b) and eligibility for indemnification.

The Applicant's entire herd has been under the October 2018 quarantine order for over three and one-half years. The applicant worked with the USDA FSIS as well as NMDA to organize testing performed pursuant to the methodology developed by Dr. Emilio Estaban, the Chief Scientist for the federal agency. This scientific model did not encompass an expansion of the testing regimen for animals born on the dairy after the commencement of the testing program, or take into consideration the fact that some of the animals had been born and weened after March 2020 when the RK PFAS filtration system was installed and thus have been on clean water supplies their entire lives.

Moreover, the testing regimen did not take into account the feed supply of the animals, some of which in early days was derived from locally produced silage, and might have been irrigated with water contaminated with Air Force PFAS, without the benefit of filtration. (Costs of filtration of irrigation systems is prohibitively expensive.)

As of this time, the Applicant has sacrificed financial resources to maintain the living members of the herd with no instigation for additional testing models on these younger animals from either FSIS or the NMDA. Since January 2021, the Applicant has spent some $3 million – without any remuneration from any federal or state program – to maintain these animals' lives in a humane manner, or as humanely as possible under the circumstances, while awaiting the development of the DIPP Cow Buy-Out program and has no resources to conduct testing of either bred heifers or open heifers that are unquestionably destined to be euthanized. In total, more than $8 million has been spent on feed during the duration of this quarantine.

Nearly ten (10) adult dairy cows on Highland Dairy are dying day by day, reflecting the losses of some 125 head per month over the last four month period. They are being feed grass hay because there is no money to purchase feed and there is no money to purchase medicine. The "killing field" associated with the USDA's delays in developing its application and approval processes designed by the USDA to limit animal eligibility for indemnity are shockingly tone-deaf to the circumstances encountered by the Applicant.

We understand that the Secretary's office published the relevant regulation in early December 2021, yet here we are waiting inexplicably for a "form". The USDA staffers who developed this specification for eligibility have apparently not understood the depravity which this circumstance has caused for the dairyman at the center of this debacle day after day and month after month while we have waited for the relief promised by Secretary Vilsack on August 9, 2021 – more than six months ago. The requirement for further evaluative testing at this point is viewed as irresponsible and an extremely cruel burden to be placed upon the Applicant.

Accordingly, the Applicant respectfully seeks a waiver from any further testing requirements as to these animals, said to number 300 for bred heifers and 500 for open heifers.

(c) To request consideration for indemnification of affected cows and heifers under § 760.10(e), the affected farmer must submit the information specified in ¶¶ (c)(1) and (2) of this section to provide an accounting of affected cows and heifers that were depopulated or died above normal mortality rates for cows between approval of the affected farmer's application for the first month of milk indemnity and the public agency approval of the affected farmer's removal plan for cow indemnification.

(1) Herd health record documenting cow and heifer deaths; and

Please refer to the information provided at Section 5 herein pertaining to historic death losses at Highland Dairy. The application of veterinary care to the herd was suspended after the quarantine was imposed and there are no non-death related health records to be provided.

Please also refer to the documents incorporated here, which are organized to reflect (a) the monthly death toll records from 2018 to April 10, 2022, and (b) the identifying ear tag numbers of each and every head that has died on Highland Dairy during this time. These are organized and presented generally by calendar year, however, please note that some of the records, such as the 2018 and 2019 deaths are recorded in a way that meshes these figures together in the "2018-19 Deaths – Ear Tag Numbers and Dates" records, etc. Highlights are added to these records to reflect the appropriate year where these are compiled together from disparate years.

(2) Farm inventory or other record identifying the loss of dairy cows and heifers.

Ibid. The Applicant maintains that all of the animals lost to date were adult dairy cows.

(d) The affected farmer certifies at application that once the cow indemnity application is approved, the affected farmer will dry off all lactating cows in a reasonable timeframe and discontinue milking.

The Applicant will certify that all of the once-lactating cows are no longer lactating, and that milking on Highland Dairy with the affected herd has been discontinued at a date some one year prior to the date of application.

§ 760.13 Application for payment of cows.

(a) Any affected farmer may apply for cow indemnity under § 760.10 and § 760.11. To apply for DIPP for affected cows, the affected farmer must sign and file an application for payment on a form that is approved for that purpose by the Deputy Administrator and provide the information described in § 760.12.

The approved FAS Form 373 B was published on April 1, 2022.

(b) The form must be filed with the FSA county office for the county where the farm headquarters is located by December 31 following the fiscal year end in which the affected farmer's milk was removed from the commercial market, except that affected farmers that have received 3 months of milk indemnity payments prior to December 13, 2021 must file the form within 120 days after December 13, 2021. Upon written request from an affected farmer and at Deputy Administrator's discretion, the deadline for that affected farmer may be extended.

The Applicant states that as an 'affected farmer', the proprietors of Highland Dairy have indeed received DIPP milk payment benefits, which benefits expired in December 2020. Since the publication of the 12/21 DIPP Cow Buy-Out regulation, 80 days have passed since the referenced date of December 13, 2021, and no "form" has been approved. Less than 80 days have passed since the form was approved.

The Applicant notes that the gap in the period of ostensible eligibility for DIPP benefits (from milk payments to the eligibility for the Cow Buy-Out) has, to date, cost the Applicant more than $3 million in relation to the care and feeding of the remaining animals, as well as further amounts related to the disposal, composting and storage of those condemned animals which died while waiting for the agency to prepare its "form", all of which are expenses for which there appears to be no recourse within the USDA Farm Service Agency Program. In the event that the USDA's lawyers and scriveners are unable to conclude the preparation of the "form" in the coming forty days, the Applicant hereby requests an extension in his eligibility in view of the foregoing regulation.

2. About the Applicant Highland Dairy:

Highland Dairy is a 3rd and 4th generation family-owned dairy farm that has operated at its current 3,518 acre location in Curry County, New Mexico since 1992. It is located approximately 5 miles southwest of Clovis, in Section 32, Township 02N, Range 35E, in Curry County in a particularly arid location directly adjacent to the Southeast corner of Cannon Air Force Base. By September 2018, Highland Dairy had built up a herd of 5,281 head of cattle including Holstein and Cross-Jersey milk cows, heifers, calves, and bulls.

On November 5, 2018, Highland Dairy's Grade A Permit was suspended and the sale of milk was disallowed by the New Mexico Department of Agriculture. Its entire herd was also placed under a "no sale order" from the US Food & Drug Administration. The animals began a quarantine on the dairy as a result of the determination of PFAS chemical[1] adulteration in the herd and its milk production.

Highland Dairy cooperated in a research study conducted by the USDA Food Safety & Inspection Service (FSIS) – working in conjunction with NMSU – in 2019. FSIS agreed with the FDA on an interim screening level (or threshold level) of 4.1 ppb PFOS in the muscle tissue. (Only one compound of the two PFAS

compounds monitored by the FDA and of the thousands known to be present in AFFF residues was selected as the subject of the study.) It was determined through FSIS's regression analysis model that the tissue sample figures could be replicated to a 95% degree of confidence through blood sampling at a standard level of 35 ppb. (See Figure 1.) Initial results yielded scores of 1.94 to 4.94 ppb with a mean of 3.57 ppb. Blood plasma results ranged from 2.72 to 130 ppb with a mean of 62.6 ppb correlating to a muscle PFOS score well in excess of the 4.1 standard. The cows were placed on filtered water in approximately March 2020.

[1] Per- and Polyfluoroalkyl Substances accumulated in the bloodstream of the cows through Highland Dairy's well water (and silage produced on crop lands) which had been contaminated from agricultural water contaminated from nearly 50 years of pollution from run-off and aquifer transmission from Aqueous Film-Forming Foams utilized by the U.S. Air Force at neighboring Cannon Air Force Base. The leadership of Cannon Air Force Base advised Highland and other neighbors of the potential of contamination in August 2018.

In 2020, two more blood plasma tests were drawn from the Highland cows by NMUS. These results yielded a leveling off, and even a slight up-tick in the scores – 60.0 in February 2020 and 66.1 in July 2020:

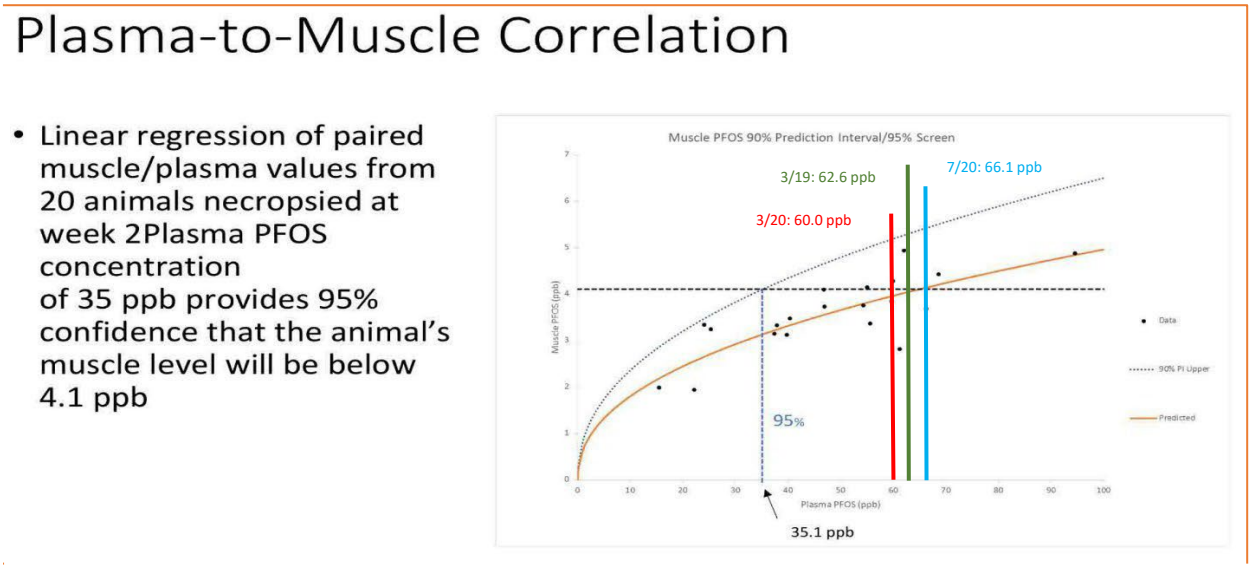


Figure 1: *FSIS calculations for acceptable blood plasma (PFOS ppb) and muscle (PFOS ppb) scores and actual results from Highland testing in 2019 and 2020*

During the same time period (at least through January 2021), NMSU routinely monitored the milk produced by the lactating cows at Highland Dairy. The USDA target for marketable milk was said to be 200 parts per trillion of PFOS + PFOA; Highland's numbers were considerably higher and based on the data collected and Highland's regression analysis, were not projected to reach a level of marketability for a total of 42 months from the commencement of the program, i.e. May 2022. (See Figure 2 below.) This turned out to be longer than the projected lifespan of the cows in the study.

FSIS determined that there was little chance for the "rehabilitation" of the muscle matter of the adultered animals. The study also revealed as a matter of practicality, there was absolutely no opportunity to commercially market contaminated animals that might have their PFAS blood levels drop below a safety standard established by the FSIS (35 parts per billion) in an attempt to make them marketable.

Over the ensuing 42 months (November 2018 to April 2022), some 2,723 adult dairy cows have died of natural causes on the dairy. Ninety-eight head of cattle have been depopulated (euthanized) on the dairy since December 10, 2021 following the publication of the updated DIPP regulation. A further 230 animals were euthanized on April 15, 2022. (This figure of the dead animals increases daily at approximately 4 per day and the figures presented here reflect the tally through February 28, 2022. We reserve the right to update these figures as appropriate.)

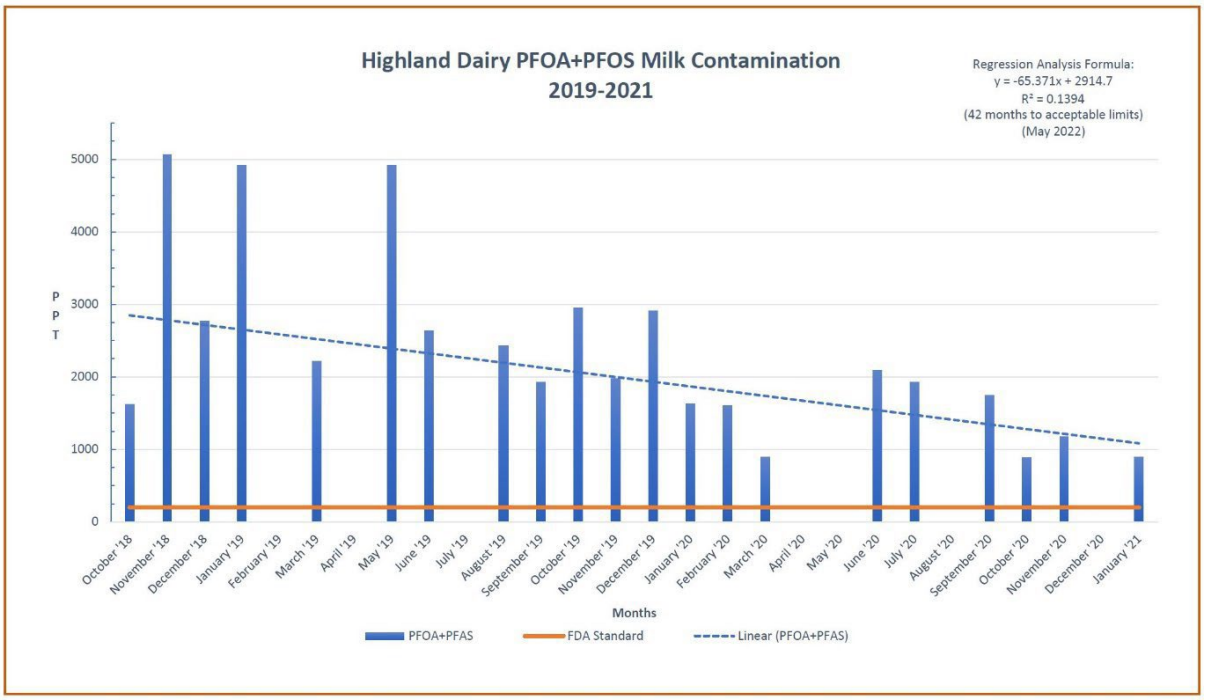


Figure 2: *PFOS & PFOA Milk Scores Compared to the FDA Standard of 200 ppt*

Also during this time, policy makers of both USDA Secretary Perdue (during President Trump's last two years in office) and USDA Secretary Vilsack (during the first year of the Biden administration) struggled to develop a means of compensating the owners of these PFAS-contaminated animals.

That administrative review process finally resulted in a regulation published by the USDA in the Federal Register on December 10, 2021 (the "12/21 DIPP Regulation".) Among other things, the 12/21 DIPP Regulation provides that if the animals have died or have been depopulated while in quarantine, the Dairy Indemnity Payment Program (DIPP) will compensate the owners of the dairy pursuant to published livestock value schedules.

This issue has been a sticking point and both agency leadership offices have been unable to answer the question as to the eligibility of the animals. In hindsight, now that the rule and the requisite form have been published, it would have been much better financially had the Applicant been able to euthanize the cows once the FSIS determined that they were unable to be rehabilitated.

The 12/21 DIPP Regulation outlines the methodology for affected dairy owners to seek an approved "Plan" for the depopulation of the remaining numbers of the contaminated herd; information provided in the April 1, 2022 application form provides further clarification as to the requirements of the Plan.

3. Specific Authorizations Requested in this Depopulation & Removal Plan and Application:

First, we request the responsible state authorities approve the Depopulation and Removal Plan stated herein in order to allow Highland Dairy to seek indemnity payments from the USDA Farm Service Agency and so that the animals and animal waste can be treated responsibly. In light of the Plan approvals from the NM State Veterinarian and the NM Environment Department (NMED) and the receipt of the application by the Curry County (NM) FSA County Committee (all contained on page one), the Applicant secondly seeks

the immediate approval from Deputy Director for full eligibility pursuant to 7 CFR § 760.13, of the following:

1. a depopulation plan of approximately 617 remaining head of adulterated cattle, to be conducted with a captive bolt technology as described infra. (This was approved on April 20, 2022, by the New Mexico State Veterinarian Dr. Ralph Zimmerman for the immediate depopulation of the remaining cattle); and,

2. a two-part removal plan with decision tree as presented in Section 9 of this application, as follows, pertaining to both (a) those adulterated and/or quarantined dairy animals deceased prior to the date of the application, as well as (b) those dairy animals to be euthanized pursuant to the foregoing approved depopulation plan:

Phase 1: Composting for a minimum period of six months in accordance with the Natural Resources Conservation Service Standard for Emergency Animal Mortality Management (Code 368 (368-CPS-1):

Animals already deceased are in Disposal Trench # 2(C). Animals to be depopulated are to be placed in either Disposal Trench # 2(C).

Phase 2: In or about September 2022, conduct sampling of impacted material (e.g., material generated during composting process and associated soil, liners, etc.):

2.1 If **positive** for PFOS or PFOA, meaning above the NMED Resource Conservation and Recovery Act (RCRA) Risk Assessment Guidance screening level of greater than or equal to 26 mg/kg for PFOS and PFOA in industrial/occupational soil, Applicant will provide a detailed hazardous substance disposal plan with technical justification for one of these options for NMED review and approval:

2.1.1 Remove impacted material to a RCRA Subtitle C (Hazardous Waste) disposal facility;

2.1.2 Cremation with mobile on-site crematory equipment; or,

2.1.3 Demonstrate to NMED that an alternative management and disposal method is equivalent to or more stringent than 2.1.1 or 2.1.2.

In the event the impacted material is removed from the site or incinerated on site, conduct confirmatory sampling of soils utilized in composting area and any other locations from which material is removed.

2.2 If **negative** for PFOS or PFOA, meaning below the NMED RCRA Risk Assessment Guidance screening level of less than 26 mg/kg, Applicant will provide a disposal plan with technical justification for one of these options for NMED review and approval:

2.2.1 Allow all impacted materials to remain onsite;

2.2.2 Remove impacted materials to a permitted RCRA Subtitle D (Municipal Solid Waste) landfill, including proper manifest of waste; or,

2.2.3 Demonstrate to NMED that an alternative management and disposal method is equivalent

to or more stringent than 2.2.1 or 2.2.2.

See Section 9 below for the full Removal Plan that is subject to NMED review.

Secondly, the Applicant seeks an acknowledgement of the mortality figure of **3,049** deceased cows presented by the Applicant (including **2,918** excess mortalities) for the period of November 2018 to April 19, 2022, and a comparable approval of the above-mentioned disposal plan (covering the final three phases of the plan) for those animals which have died of natural causes or been depopulated on the dairy over the past 42 months and which have been temporarily stored in accordance with a NMED's Ground Water Quality Bureau letter of April 8, 2021 to Mr. Schaap.

(Applicant states that the Form 373-B Application 001 dated April 12, 2022 addressed the deaths of **2,759** with the number of adult cows in excess of normal mortalities totaling **2,628**. It is not the intent of the Applicant to double-count these numbers, simply to provide an updated total as the days mount.)

We therefore submit Application 002 for indemnity payments for those 617 adult cows that require depopulation pursuant to Section One of the Form 373-B and Section 4 below, the Depopulation component of this Removal Plan. Further detail, including proposed benefit calculations for this segment of the dairy herd population, is provided in Section 10 below.

Based upon these approvals, the Applicant will conclude the depopulation practices and commence the removal practices foreseen in the 12/21 DIPP Regulation and this Application 002, including, as practicable, pursuant to USDA NRCS guidelines.

4. Current and Future Depopulation Methodologies:

To date, all of the 3,049 deceased cattle have been adults weighing an average of 1,550 lbs. Most (numbering some 2,723) have died from natural causes. The remaining number have been euthanized out of concern for animal welfare. A total of 98 adult cattle were euthanized in December 2021, after Mr. Schaap communicated to USDA Farm Service Agency officials in Washington that this number needed to be euthanized immediately from a humanitarian standpoint. In April 2022, Highland again notified the USDA FSA officials in Washington to express the need to euthanize another substantial number (200 or more) of animals who were suffering considerable atrophy under the conditions including poor diet and extreme weather conditions. On Good Friday, April 15th, the dairy depopulated a total of 230 adult cows. Highland Dairy has employed both a captive bolt and a firearm method to put these animals out of their misery.

In order to depopulate the remaining 617 live animals at Highland Dairy, the preferred and safest method considering both animals and humans is through the use of the Penetrating Captive Bolt (PCB) method.

The animals will be moved from their respective pens, and temporarily restrained either between swing gates in an alley way or in a working chute for the accurate placement and firing of the captive bolt, a practice commonly utilized in the industry for the purpose of euthanasia of individual animals. The depopulation practice is to be undertaken as prescribed with American Veterinary Medicine Association guidance, as described in AVMA Guidelines for the Euthanasia of Animals: 2020 Edition, pp. 65-692, and for depopulation purposes as described in AVMA Guidelines for the Depopulation of Animals: 2019 Edition, p. 353. Once the animals are confirmed dead, a front-end loader will be used to hoist the animals and transport them from the area of the depopulation activities to Disposal Trench 2(B) or 2(C) as is

determined at that time, in a manner which shall be similar to what was described previously under the historic and current removal method discussed in section 5 below.

The precise depopulation method will be determined in consultation with Dr. Zimmermann and his team as they arrive on site.

5. November 2018 – April 2020 Mortalities and Carcass Composting:

In keeping with standard commercial dairy practices prior to the discovery of the PFAS contamination, Highland Dairy routinely sold its older, less productive animals to regional beef processing facilities over the years, at an annual rate of approximately 1,200 to 1,500 head (approximately 25% to 30% of the herd) in order to maintain a youthful and productive milking herd and also maximize revenues from beef sales as the animals were being replaced by newborn female calves. During normal operations, these sales minimized the number of cattle that died of natural causes on the dairy to approximately 0.8% of the dairy herd per annum.

Historically, the Applicant disposed of milk cows that died of natural causes (ca. 40-50 per year on average4) at a location 1,050' South of the Highland Dairy barn, with a GPS location of 34° 21' 06.53 N; 103° 17' 34.01" W, as indicated on the Google Earth® image immediately below (Figure 3) labeled "Historic Mortality Disposal Site". This older site measures 1.37 acres or approximately 59,500 sq.' and is at an elevation of 4,260'.

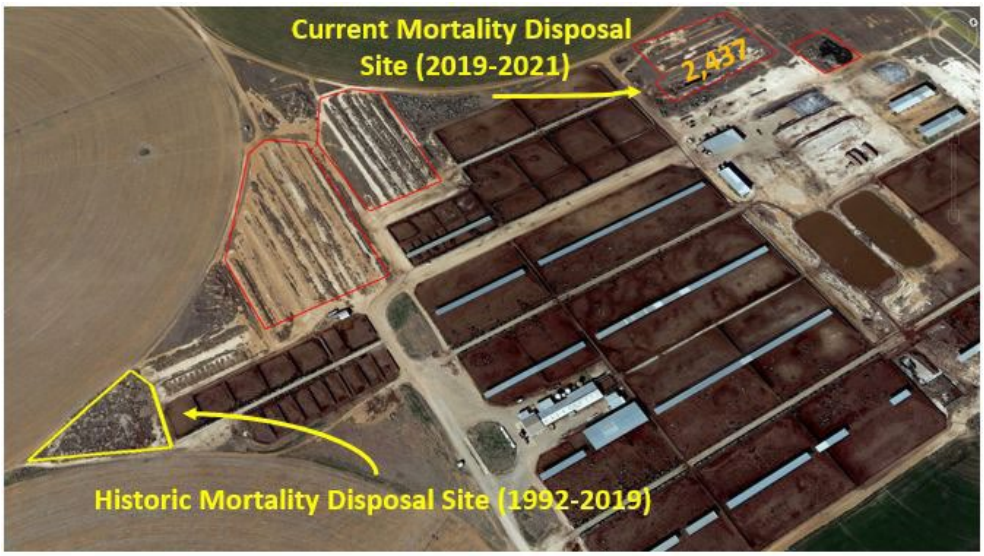


Figure 3: *Overview of Highland Dairy with cattle disposal sites highlighted. (Viewed from the Southeast.)*

[2] https://www.avma.org/sites/default/files/resources/AVMA-Guidelines-for-the-Depopulation-of-Animals.pdf
[3] https://www.avma.org/sites/default/files/resources/AVMA-Guidelines-for-the-Depopulation-of-Animals.pdf
[4] In the 2015-16 Goliath Storm event that caused the deaths of more than 1,000 animals on Highland Dairy, those carcasses were transported to a local landfill for burial.

Prior to the incursion of PFAS-adulterated deaths on Highland Dairy, the Applicant employed "whole animal composting" techniques for these animal carcasses as is customary in the local industry and are recommended by New Mexico State University's College of Agricultural, Consumer, and Environmental Sciences as indicated in Guide D-108[5] (Flynn, Robert P. and Hagevoort, Robert G.).

However, after the discovery of PFAS, the imposition of the quarantine, and as the number of on-site mortalities continued to increase in 2019, after some six months, this site was determined to be insufficiently scaled to adequately keep up with requirements for traditional composting practices. Figure 3 above reflects the location of the then-established Disposal Trenches on the Highland Dairy property.

Eventually, the dairy's management realized the following losses:

- In the last two months of 2018, the Applicant realized 68 deaths on the dairy – more than one per day at 34 deaths per month.

- This pace of aging cows dying of natural causes continued and accelerated slightly through 2019 when a further 437 adult dairy cows died on the dairy – an average of 1.2 deaths per day and 36 per month.

- During the year 2020, the death toll increased to a total of 590 dead adult dairy cows – an average of 1.6 head per day and 49 animals per month.

- In 2021, the death toll reached 1,187 for the year (with 98 necessary euthanizations), averaging 3.1 deaths per day and 99 per month. Taking into account normal mortality rates for the dairy industry in the state of New Mexico, the death toll due to the PFAS quarantine was 1,133 head during 2021.

- In 2022, the death total through the first four and one-half months of the year was 767 head of cattle. In this time period, the death rate is more than 170 per month. In the first 19 days of April, there were 129 deaths from natural causes as the animals continued to suffer. On Friday, April 15th, the dairyman euthanized 230 weak and struggling animals. Taking into account the normal mortality rate for the first months of the year, 753 deaths are attributed to the indemnity calculation total for the year to date.

In total, 3,049 adult dairy cows on Highland Dairy have died of natural causes[6] or, with respect to those 98 in December 2021 and 230 in April 2022 that were determined to be experiencing considerable atrophy, and have been euthanized by the owners of the dairy. The following chart (Figure 4) reflects the monthly death-count tally caused by the PFAS-adulteration of the cows on Highland Dairy.

[5] https://aces.nmsu.edu/pubs/_d/D108/welcome.html. Also permitted by the NMED Solid Waste Bureau and the NM Livestock Board pursuant to NMSA 77 3-4 and USDA NRCS Conservation Practice Standard Code 317 (July 2012).

[6] Taking into consideration the "normal mortality rate" for adult dairy cows in New Mexico, given the decreasing denominator of the shrinking adult population on the dairy, the Applicant states that a total of 131 of the dead animals are within the 42 month period total as an allocation for normal mortality, 2,918 of these animals are to be considered as deaths in excess of the normal mortality rate. On the advice of the staff of the FSA, the Applicant filed an initial Application (App. No. 0001) for the predeceased animals as of April 10, 2022 pursuant to "Section 2" of the 12/21 DIPP Regulation for the animals which on that day numbered 2,759 deaths, 131 normal mortalities, and 2,628 in excess of normal mortalities. The assigned value for these animals was $1,622.50 per head as of the date of loss – November 2018.

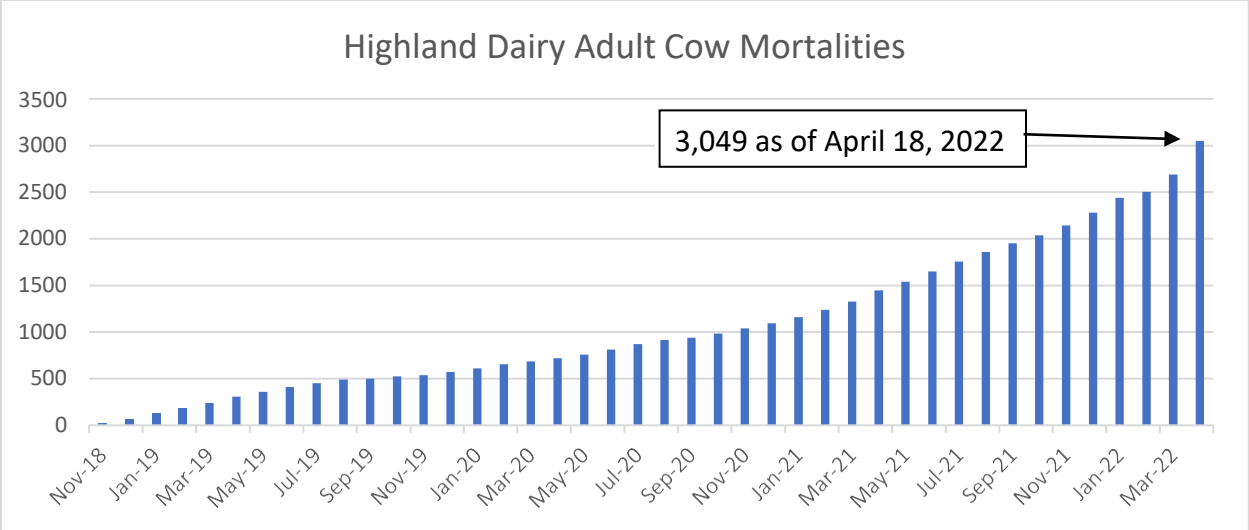


Figure 4: *Accumulated Adult Cow Death Count at Highland Dairy*

Highland determined that no landfill location in the state of New Mexico or in the Western regions of the state of Texas was eligible for the off-site storage of the PFAS-adulterated herd. It also determined that the animals could not be transported to a Subtitle C hazardous waste storage facility, including one operated by Republic Industries in Odessa, Texas, owing to the EPA's lack of leadership on this issue and the inability of the market to respond to these deaths. Mr. Schaap has repeatedly and earnestly sought solutions for these living animals characterized as 'the stranded' and 'the walking dead', while he has been compelled to feed them continuously – daily – with no financial support from the state or federal government since December 2020.7

Finally, the Applicant determined that the incineration (or cremation) of the animals in portable gas-powered furnaces (which could exceed temperatures of 1,300° F and thus break-down PFAS compounds into non-hazardous wastes) was likewise unachievable in the near term due to the high moisture content in the animals – said to be 85% – and the requirement to obtain an NMED air quality permit for the incineration operation could take considerable period of time to secure, depending upon the scale of the incineration operation.

As a result, the second site identified above in Figure 3 as the "Current Mortality Disposal Site" was elected to be used beginning in 2019. Moreover, the dairy switched to a shallow burial methodology instead of whole cow composting of the mortalities because this approach made better practical sense. The management of Highland Dairy did not know how long the quarantine would last, or whether its animals would one day be eligible for markets or milk production.

[7] Moreover, without any government aid or program for the dairy's remuneration of these quarantined animals, the Applicant has been compelled to keep them alive in order to maintain the book value of the livestock on his balance sheet in order to stave off a determination of balance sheet insolvency by his agricultural lender. The Applicant's bank has maintained a lien of $1,500 on each cow in the herd, with the aggregate value ranging from some $7.5 million in 2018 to the current remnant value of approximately $1.2 million.

Since the initial "in-house composting" of 268 adult cows that died on the dairy in the six months following the PFAS quarantine within the Historic Disposal Site, Highland has concentrated the composting of some 2,800 dead cows in the area designated as "Section 2" in its Notice of Intent to Discharge, an area with its northern boundary measuring 300' East to West, its Eastern boundary measuring 510' running North / South, its Western boundary measuring 444' running North/South and the southern boundary 345' in length with a pronounced jog to the North 116' from the Eastern boundary and 219' from the Western boundary. The GPS position is 34° 21' 31.82" N; 103° 17'37" W at an elevation of 4,259'.

Within the Current Mortality Disposal Site, Highland Dairy has three pre-existing Disposal Trenches measuring ca. 80' wide by 430' to 500' in length that have been dug as borrow pits in years past in a Northerly/Southerly direction.

The Disposal Trenches measure an average of 12' deep with gradually sloping grades on the North and South ends (allowing for vehicles to enter in order to position animal carcasses, etc.) and somewhat steeper embankments on the East and West sides. (In compliance with NRCS Code 368, all earthen walls are sloped at 2 horizontal and 1 vertical or flatter.) These trenches are labeled 2(A), 2(B) and 2(C) in the direction of West to East on the dairy.

Figure 5: *Storage Trenches 2(A), 2(B), and 2(C) at Highland Dairy*

One can see in Figure 5, a close-up aerial view of the Disposal Trench area, the pale-ivory colored *caliche* clay material which is found just below the topsoil layer throughout this area and measures an average depth of 10' to 15' below the Disposal Trench, allowing for either composting or shallow burials of these hooved animals with considerably limited opportunity for any water, blood, or other liquified carcass matter to leach into the soil.

The largest and most Easterly of the three trenches ("2(C)") has been used for the storage and decomposition of nearly all of the roughly 2,600 animals that have died on the dairy since May 2019. Over approximately the past 3 years, the deceased animals have been transported from the feedlot pens where they have died to the edge of the disposal area by the use of a front-end loader which Highland Dairy has on its premises. The animals have been accumulated into collections of 10 to 30 cows adjacent to the Disposal Trench 2(C) and on approximately a weekly basis have been repositioned into the burial area. Figure 6 shows the front-end loader transport of an individual adult cow carcass – an occurrence that has been witnessed daily on the dairy since November 2018.

Figure 6: *Transporting individual animal carcasses from the feedlots to Disposal Trench 2(C).*

Disposal Trench 2(C) Images over Time:

The following image (Figure 7) reflects a close-interval positioning of approximately 560 dead animals in Disposal Trench 2(C) as of the Summer of 2020, approximately one year after this site was put in use:

Figure 7: *Disposal Trench 2(C). Viewed from the SW Corner looking Northeast Summer 2020.*

Figure 8 below illustrates the condition of the Storage Trench 2(C) location in December 2021 with more than 1,800 dead that died of natural causes and were positioned in this location since May 2019. Note that there has not been any cover material placed on the animal carcasses to allow oxygen to enter into the carcasses and hasten the decomposition of the animals. In the middle of the trench it is possible to see the largely decomposed (and weathered) animal carcasses with newer additions placed on the north and south edges of Trench 2(C).

Figure 8: *Storage Trench 2(C) in December 2021. Cannon AFB is visible in the background.*

The following image (Figure 9) reflects a close-interval positioning of approximately 2,600 dead animals in Disposal Trench 2(C) as of April 15, 2022:

Figure 9: *Disposal Trench 2(C) showing March & April deaths layered on top of older ones (April 15, 2022)*

6. Highland Dairy's Impermeable Layer of Caliche Clay Lining the Disposal Trench

The light-yellow material visible at the base of the disposal trench is known as caliche clay, a sedimentary rock, and hardened natural cement of calcium carbonate that binds other materials – such as gravel, sand, clay and silt. It occurs in aridisol and mollisol soil orders – generally in arid or semiarid regions, such as the Llano Estacado regions of the High Plains of the western Texas and eastern New Mexico, and in particular, Curry County, New Mexico. Caliche forms where annual rainfall is less than 26 inches per year and the mean annual temperature exceeds 41° Fahrenheit. Higher rainfall totals leach excess calcium completely from the soil, while in arid climates, rainfall is inadequate to leach calcium at all and only thin layers of calcite are formed. Plant roots play an important role in caliche formation, by releasing large amounts of carbon dioxide into the layer of soil just below the organic matter layer. Carbon dioxide levels here can exceed 15 times normal atmospheric values. This allows calcium carbonate to dissolve as bicarbonate.

As in eastern New Mexico, where rainfall is adequate but not excessive (on average 18.51" per year), the calcium bicarbonate is carried down into the level of soil where there is significantly less biological activity. The carbon dioxide level is much lower, and the bicarbonate reverts to insoluble carbonate. A mixture of calcium carbonate and clay particles accumulates, first forming grains, then small clumps, then a discernible layer, and finally, a thicker, solid bed. As the caliche layer forms, the layer gradually becomes deeper, and eventually moves into the underlying, consolidated geological material in which soil horizons form.

In the Highland Dairy area, the caliche layer is substantial – measuring some 10' to 15' in depth and is reached between 3' and 8' below the upper soil horizon. The impermeable layer of caliche clay sediment prevents water from draining, and from an agricultural perspective, prevents deep root systems from getting adequate oxygen. Salts can also build up in the soil due to the lack of drainage. The impermeable nature of caliche beds prevents plant roots from penetrating the bed, which limits the supply of nutrients, water, and space so they cannot develop normally. The Applicant contends that this 15' thick layer of cement is superior to any engineered product that could be applied to the Disposal Trenches.

7. Pervasive Prior Contamination of Air Force PFAS in Highland Dairy Water & Soils

The agricultural pivots on Highland Dairy have been contaminated by PFAS from the Air Force's 50 years of application to the soils with no remediation. The Applicant has exhaustingly sought the intervention of the US Air Force into this debacle and inhumane result of its disregard for the environment or the lives of those people and animals occupying Highland Dairy – all to an astoundingly deaf response. New Mexico's congressional delegation has sought to likewise hold the Air Force and the Department of Defense to account – with legislative actions that have been largely ignored.

For example, the 2020 National Defense Authorization Act required that the Air Force treat agricultural water with the same regard as drinking water pursuant to the US Safe Drinking Water Act and the EPA's Lifetime Health Advisory level of 70 parts per trillion. While Highland's water scores are well in excess of this limit, the US Air Force has done nothing to mitigate the problems faced by the dairy.

The following Figure 10 reflects the Air Force's own findings of water samples taken from Highland Dairy in 2018 and 2021.

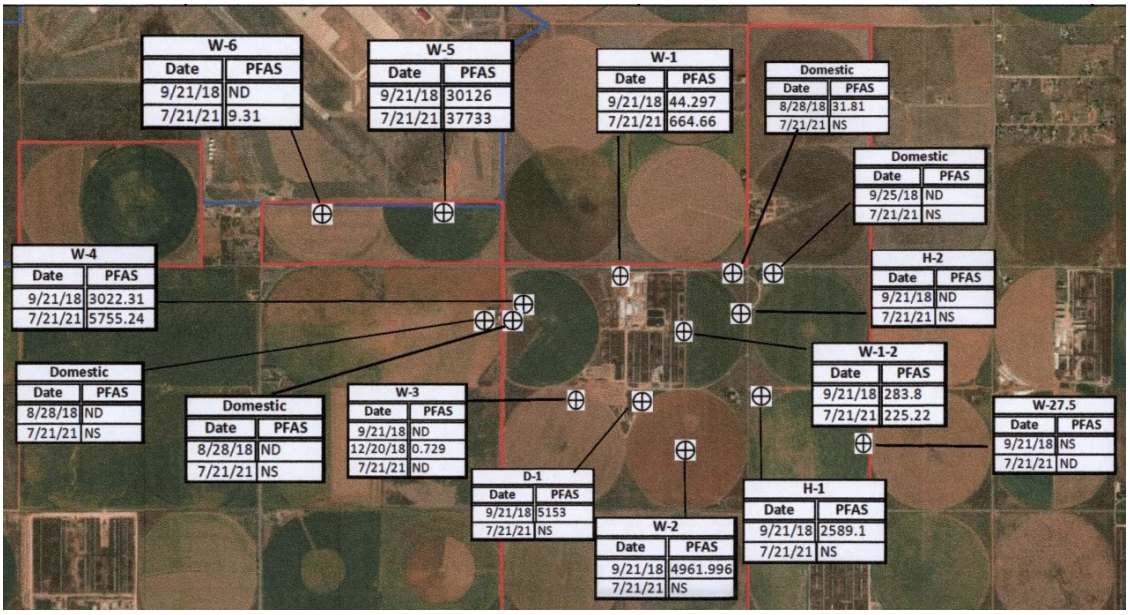


Figure 10: *Recent US Air Force Sampling of Water at Highland Dairy*

Likewise, the soils surrounding the Disposal Trenches have, correspondingly, already been contaminated with high concentrations of PFAS (PFOA and PFOS) emanating from Cannon Air Force Base into the Ogallala Aquifer and through the distribution of this water through the agricultural watering systems (pivots) utilized by Highland Dairy over the years. Figure 10 shows the soil test results from Nov. 2021.

Figure 11: *Highland Dairy Soil Contamination measured in parts per trillion for both PFOA and PFAS (Disposal Trenches outlined in red ink.)*

These soil measurements taken by reputable laboratory SGS confirm that the soil within 400 feet of the Disposal Trenches measures 1,890 ppt for PFOA and 9,090 ppt for PFOS – a total PFAS score in excess of 11,000 ppt. These

measurements confirm that the areas immediately adjacent to the Disposal Trenches already have PFAS in the soils.

8. Prior Guidance from State and Federal Authorities:

In March 2021, the Applicant submitted a Notice of Intent to Discharge with the NMED's Ground Water Quality Bureau for the disposal of some 5,040 deceased cows with unknown amounts of PFAS chemicals in the carcasses at up to four locations measuring a total of
14.5 acres, as referenced in Figure 1 above and appearing in the red-outlined areas on the dairy.

On April 8, 2021, Ms. Michelle Hunter, Chief of the Ground Water Quality Bureau wrote to Highland Dairy and indicated that "NMED has determined that a Discharge Permit is not required so long as the discharge is as described". And further, "[a] ground water Discharge Permit is not required at this time because the information provided indicates it is unlikely that effluent or leachate will move directly or indirectly into groundwater (20.6.2.3104 NMAC)". A copy of the April 8, 2021 determination letter is incorporated here.

This application is made pursuant to the Applicant's compliance with USDA NRCS Conservation Practice Standard for Emergency Animal Mortality Management (Code 368 (368-CPS-1)) issued in December 2019 by the NRCS in the State of Indiana. The standard focuses on reducing impacts to surface water and groundwater resources, reducing the impact of odors, and decreasing the spread of pathogens.

One requirement in Code 368 is that there must be a 2' barrier between the base of the burial site and the nearest water transmission location. We consider that beneath the layer of nearly impenetrable caliche clay there are at least 250' of vertical sediment separating the Historic Disposal Site and the Current Burial Site from the Ogallala Aquifer, the only known groundwater source beneath Highland Dairy.

Typical well depths for water in this area of Curry County – including those wells already contaminated with PFAS from Cannon Air Force Base – is 285' to 420' in depth. (Cannon AFB is situated less than 1.5 miles from the Current Disposal Site referenced here.) Critically, the impermeable barrier of Caliche Clay underlies the surface of the terrain of Highland Dairy and creates a critical moisture barrier that prevents the seepage or other infiltration of the shallow burial area from the more porous substructure leading downward to the Ogallala Aquifer. The Caliche layer is believed to measure from 10' to 18' in depth and is situated just 6' to 10' below the soil surface. The Applicant committed to retaining the integrity of the Caliche Clay at the Disposal Site and has taken precautions to not infiltrate the protective sediment.

The black-ink text in the following chart (Figure 11) is provided by the U.S. Air Force[8] from the U.S. Geological Survey; NAVD 88, North American Vertical Datum of 1988; North American Datum of 1983 and shows all of the production wells at the neighboring Cannon Air Force Base, including the surface altitude (above sea-level), the well depths below the land surface to the bottom of the well casing in feet. The difference between the "Land-surface altitude" and the "Top of screen altitude" is characterized in red-ink as the "Depth Delta," and provides evidence of a barrier of between 285' and 350' of vertical distance of sediment protecting the already-contaminated Ogallala water source from

[8] Ground-Water Hydrology and Water Quality of the Southern High Plains Aquifer, Cannon Air Force Base, Curry County, New Mexico, 1994-2005. https://pubs.usgs.gov/sir/2006/5280/pdf/SIR-5280_508.pdf.

further contamination. Taking into consideration the 12' depth of the Disposal Trenches, positioned on Highland Dairy at an elevation of 4,261', and assuming no rise in the top of screen altitude in the 1.5 miles from the Air Base to the dairy, the true Depth Delta may be calculated as between 210' and 300', with the bottom of the Disposal Trench at 4,249' above sea-level and the top of the well screens at 3,949' to 4,039' above sea-level.

Well identifier (fig. 2)	Well identifier (fig. I-1)	USGS identification number	Land-surface altitude (ft above NAVD 88)	Latitude (NAD 83)	Longitude (NAD 83)	Well depth (ft bls)	Casing material	Screened interval from top of screen (ft)	Top of screen altitude (ft above NAVD 88)	Depth Delta
Production wells										
2	NA	Non-USGS well	2 4,306	2 34°24'15.3"	3 103°19'44.5"	380	Steel	94.5	2 4,021	285
3	NA	Non-USGS well	2 4,307	2 34°23'55.5"	3 103°18'47.4"	402	Steel	87	2 3,997	310
4	NA	Non-USGS well	2 4,313	2 34°24'10.0"	3 103°19'16.2"	357	Steel	51	2 4,010	303
4a	NA	Non-USGS well	2 4,316	2 34°24'02.8"	3 103°19'15.0"	411	Steel	60	2 3,965	351
5	NA	Non-USGS well	2 4,293	2 34°23'38.9"	3 103°18'09.4"	402	Steel	102	2 4,009	284
7	NA	Non-USGS well	2 4,319	2 34°23'45.4"	3 103°19'48.8"	382	Steel	90	2 4,039	280
8	NA	Non-USGS well	2 4,321	2 34°24'13.5"	3 103°19'11.0"	415	Steel	100	2 4,020	301
9	NA	Non-USGS well	2 4,270	2 34°22'31.3"	3 103°18'38.0"	385	Steel	49	2 3,949	321
12	NA	Non-USGS well	2 4,314	2 34°24'01.5"	3 103°18'47.0"	410	Steel	50	2 3,964	350

Figure 12: *Depth of Wells at Neighboring Cannon Air Force Base with "Depth Delta"*

9. Permanent Removal Options from April 19, 2022, Forward

Note: This section of the application is the "Removal Plan" for purposes of 40 CFR 760.12(a)(3) and is subject to approval by NMED.

The remaining heard of cattle has been rapidly declining in health with, approximately 10 cattle dying of natural causes daily. On April 20, 2022, the New Mexico State Veterinarian Dr. Ralph Zimmerman approved the immediate depopulation of the remaining 514 head of cattle to alleviate further suffering of the animals. This was reported to the USDA Farm Service Agency in Washington D.C. These cattle were moved to Disposal Trench 2(C) to be covered with organic material for composting.

On May 4, 2022, NMED Contractor Wood Environmental and New Mexico State Veterinarian Dr. Kregg Evetts conducted sampling of the recently euthanized cattle carcasses at Highland Dairy in Disposal Trench 2(C). The cattle had already begun to rapidly decompose. Samples were taken from the approximate center of the trench, which was 30-feet in diameter and remained uncovered for sample access. Necropsy of the cows was not feasible, as their tissues, organs, blood, etc. were already discharged from their bodies and liquifying. Samples of the liquified material were taken along with, bone, tissue, and some muscle that was at the surface that was not saturated by the liquified mixture. In addition, soil samples were collected of the cover materials being used and sidewall samples from the trench.

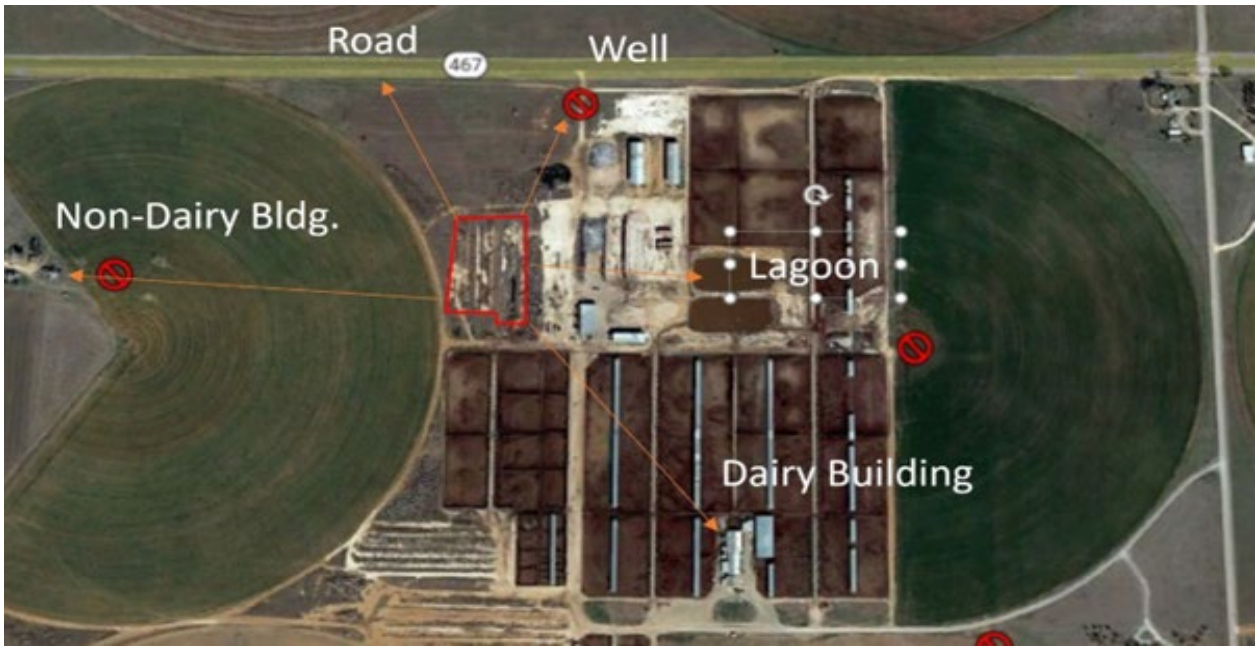
This Removal Plan applies to all PFAS-impacted cow carcasses on Highland Dairy's property, including those fully or partially composted or buried as of the date of the application. Highland Dairy is moving the remnants of the 268 previously composted carcasses from the historic disposal site to Disposal Trench 2(C) as indicated in above in this application. This is being done so that all of the composting takes place in one location and the newer animal carcasses receive the necessary enzymes to facilitate effective composting, from those animals already largely composted. Once the composted carcasses have been removed from the historic disposal site, additional soil sampling of the trench and immediate area will be conducted for PFAS with full lab analyses reported to NMED.

Phase 1: Highland Dairy will compost for a minimum period of six months in accordance with the Natural Resources Conservation Service Standard for Emergency Animal Mortality Management (Code 368 (368-CPS-1).

A final decision on the removal of composted material will come in approximately six months from the time of initial composting in order to allow the animals to decompose and compost. The Applicant anticipates that the animal carcass moisture content should be reduced to less than 20% (substantially decomposed from 1,550 lbs to 310 lbs for each head of adult cattle) and this figure has been utilized for purposes of establishing costs associated with a cremation model, with PFAS testing performed on the remaining 'dry' carcass matter, aka composted material, at the start of Phase 2. Sampling will be performed in accordance with U.S. Environmental Protection Agency SW-846 Test Method 1311: Toxicity Characteristic Leaching Procedure (TCLP) for Resource Conservation and Recovery Act (RCRA) testing. In addition to the composted material, representative samples will be obtained from all disposal trenches and submitted for analyses to determine PFAS concentrations. (Accordingly, the Applicant is not pegging the proficiency of the testing to a particular moisture content in the carcasses.)

Mortalities are to be composted in the most easterly trench of the three available within Disposal Trench 2(C), which is centrally positioned on the Western edge of the dairy facility (see Figure 3 above). This is

the same location where the animals are being composted presently, and the animals would remain in their current location(s) and be covered with a layer of organic "earthfill" material and fenced off from other dairy operations. The following satellite image (Figure 15) shows the distances and stand-off measurements of various features in Curry County:



Water Depth below surface:	250 ft	Closest Water Well:	600 ft (NE)
Second Closest Water Well:	1,330 ft (W)	3rd Closest Water Well:	1,580 ft (E)
Closest Road:	700 ft (N)	Closest Shed:	320 ft (E)
Closest Dairy Building:	1,330 ft (SE)	Closest Non-Dairy Building:	1,660 ft (W)
Closest Clean Water Source:	33,600 ft (NE)	Closest Dairy Lagoon:	670 ft (E)
Closest Brown Water site:	9,550 ft (NW)	Closest residential n'borhood:	9,165 ft (E)
Utilities:	10,000 ft (NW)		

Figure 15: *Distances from Disposal Trenches to Habitability Features*

The Applicant states that there are two features – that are closest to the composting site – situated on the Cannon Air Force Base property. These include the nearest brown water site (the Northern Playa on the base) and the utilities situated in service to the Air Force Base. The region is otherwise remote and there is no water source closer than a lake in the City of Clovis, some 5 miles distant.

Further justification for the composting location currently used consists of the following points:

1. The existing composting site exists with *caliche* clay bottoms offering limited permeability;
2. The composting site forms the epicenter of the PFOS/PFOA concentration on the Highland Dairy site. Independent soil testing recently performed adjacent to the Storage Trenches established the existing presence of PFAS proximate to this location.[1] Therefore, composting in this area does not introduce PFAS to land areas not already impacted by PFAS;
3. The composting site forms a natural containment for the mortalities;

[1] See Figure 11 above. Soil testing performed by SGS on behalf of the Applicant in November 2020 in the crop circle immediately to the West of Disposal Trench 2 on Highland Dairy in November 2020 revealed that the two most regulated PFAS compound levels (PFOA + PFOS) totaled 11,170 parts per trillion (ppt) in the soils less than 360' from Disposal Trench 2(C).

4. The composting site is positioned in a significant distance from the dairy barn wells on the Highland Dairy site;
5. The area is suitable for mortality management in accordance with NRCS standard 368;
6. Any potential runoff from the disposal or storage areas would be managed in accordance with NRCS standard 368 and Highland Dairy's Groundwater Discharge Permit; and,
7. The close proximity to the pens where the mortalities have occurred.

All composting would be centralized in Disposal Trench 2(C) – the most easterly burial trench. Among the remaining cattle on Highland Dairy as of April 19, 2022, there were 617 adult cows– none of which were lactating.[2]

The current composting program (prior to Phase 1) is being conducted by placing the mortalities adjacent to previous mortalities in the open air, or are positioned with a narrow layer of manure and other organic material (3 feet compressed to 2 feet) layered in between year-old carcasses and newer dead carcasses to allow for maximum moisture uptake.

Finally, as a condition of the requested approvals, the Applicant further states the following information is true and accurate to the best of their knowledge. Further, the Applicant commits to undertaking the following actions regarding the composting location Trench 2(C):

- There are no known power lines, utilities, gas lines, water lines or other subterranean infrastructure issues in the vicinity of the composting site. There are no known drainage tiles (subsurface drains) within the operational area of the current and proposed composting site. The Applicant will be responsible for addressing any such issues that may present themselves.
- The Applicant shall be responsible for addressing biosecurity concerns related to the planning, installation, operation, and maintenance of a catastrophic animal mortality operation, including pursuant to NRCS Conservation Practice Standard - Code 368.
- There are no public water supply or surface intake structures within 1,000 feet of the boundaries of the current and proposed composting site.
- There are no residential or public buildings within 400 feet of the current and proposed composting site.
- There are no surface waters of the State or drainage inlets (including water and sediment control basins) within 100 feet of the current and proposed composting site.
- There are no known sinkholes (measured from the superficial opening or lowest point within 100 feet of the current and proposed composting site.
- There are no water wells (onsite or otherwise) within 100 feet of the current and proposed composting site.
- There are no property lines or public roads within 100 feet of the current and proposed composting site.
- The operations are situated above the 100-year floodplain elevation.
- The mortality management operations are designed to minimize disruption of ongoing daily operations of the dairy facility.
- The mortality management operations will not interfere with ingress and egress or other travel patterns on the farm such as livestock pathways and feed lanes.
- The Applicant retained professional services to conduct soil sampling to determine the suitability of the

[2] There are other younger animals on the dairy that were not introduced to water containing PFAS. These include open and bred heifers and calves. These animals were birthed after the introduction of the RK water filtration system in early 2020 and up to approximately March of 2021. Those after-born animals are not to be depopulated or disposed of pursuant to this Removal Plan.

composting site. The site is not configured with any percolation field and there is a minimum of two feet between the bottom of the composting site and the seasonal high-water table. Additionally, the site is not resting upon a structure of hard bedrock, bedrock crevices, or highly permeable strata at or directly below the bottom of the composting site.

- The bottoms of the existing Trenches are constructed as relatively level. In the event that additional composting locations (other than Section 2(C)) are required, said areas are separated by more than three feet of undisturbed soil.
- The Applicant will utilize USDA Field Operations Technical Guide (FOTG) Standards for Critical Area Planting to revegetate all areas disturbed by the mortality management activities.
- The Applicant must comply with all local (Curry County), state and federal laws and regulations.
- The Applicant has retained topsoil from the proposed composting site in order to regrade the composting site after the ground as settled as the decay process is completed.
- The composting site will be fenced to protect the safety of humans and animals from injury. Barriers at a minimum of 20 feet from the edge of the composting site shall be put in place to prevent vehicles and wild or domestic wildlife from disturbing the mortality location.
- The composting site will be marked with warning signs and weekly visual assessments will be conducted. Records shall be maintained for ready reference for managers, employees, visitors, utility workers, well drilling contractors, and others who may come into contact with the composting site.
- The Applicant will develop an Operation & Maintenance (O&M) Plan to include, at a minimum:
  - Specific instructions for the proper operation and maintenance of the composting site, detailing the level of inspection and repairs needed to optimize composting conditions and maintain the effectiveness and useful life of the compost system;
  - Safety considerations;
  - Biosecurity concerns in all aspects of the installation, operation and maintenance;
  - Contact details and phone numbers for persons to contact in the event of a catastrophic event;
  - Programs for recordkeeping of the mortality management operation including the methods and procedures applied to the practice;
  - Periodic inspections of the composting sites as appropriate and noted above; and,
  - Prompt repair or replacement of damaged components as appropriate.

After six months of composting pursuant to the NRCS standard and the provisions of this Removal Plan, if additional time is needed to complete composting before advancing to the removal steps outlined below, Highland Dairy will re-test the sites in three-month intervals until NMED, in coordination with Highland Dairy and the New Mexico Department of Agriculture, decides to advance to Phase 2.

Phase 2: After composting is complete, Highland Dairy will conduct sampling of impacted material (e.g., material generated during the composting process and associated soil, liners, etc.).

2.1 If **positive** for PFOS or PFOA, meaning above the NMED Resource Conservation and Recovery Act (RCRA) Risk Assessment Guidance[3] screening level of greater than or equal to 26 mg/kg for PFOS and PFOA in industrial/occupational soil, Applicant will provide a detailed hazardous substance disposal plan[4] with technical justification for one of these options for NMED review

[3] NMED Risk Assessment Guidance for Site Investigations and Remediation, Volume I, Soil Screening Guidance for Human Health Risk Assessments, available at https://www.env.nm.gov/hazardous-waste/wp-content/uploads/sites/10/2021/12/NMED_SSG-VOL_I_Dec_2_2021.pdf.

[4] The Applicant would object to any characterization that Highland Dairy is responsible for the generation of hazardous substances by the actions taken in advance of or to be taken pursuant to this Application. The Applicant has already

and approval:

2.1.1 Remove impacted material to a RCRA Subtitle C (Hazardous Waste) disposal facility;

2.1.2 Cremation with mobile on-site crematory equipment; or,

2.1.3 Demonstrate to NMED that an alternative management and disposal method is equivalent to or more stringent than 2.1.1 or 2.1.2.

In the event the impacted material is removed from the site or incinerated on site, conduct confirmatory sampling of soils utilized in the composting area and any other locations from which material is removed.

2.2 If **negative** for PFOS or PFOA, meaning below the NMED RCRA Risk Assessment Guidance screening level of less than 26 mg/kg, Applicant will provide a disposal plan with technical justification for one of these options for NMED review and approval:

2.2.1 Permanent disposal on-site;

2.2.2 Removal to conventional landfill; or

2.2.3 Demonstrate to NMED that an alternative management and disposal method is equivalent to or more stringent than 2.2.1 or 2.2.2.

Based on results of representative sampling and analysis, full implementation of Phase 2 may involve a combination of 2.1 and 2.2 options if material from some areas of the composting site is above the screening level and material from other areas is below the screening level. The following detail is provided as to each of the foregoing possible removal options considered during implementation of Phase 2.

ACTIONS TO BE TAKEN IF TESTING REVEALS THAT THE IMPACTED MATERIAL IS HAZARDOUS:

Option 2.1.1: Remove impacted material to a RCRA Subtitle C licensed hazardous waste disposal facility

At the time of this DIPP application, the Applicant has been unable to identify a RCRA Subtitle C hazardous waste disposal facility that is willing and able to accept the PFAS-contaminated composted material and associated impacted materials.

If and when Option 2.1.1 is selected for implementation pursuant to other provisions of this Removal Plan, state funding via NMED's Hazardous Waste Emergency Fund (subject to available funding) and federal funding via the NRCS EQIP program may be available to Highland Dairy to provide some relief for the costs associated with the ultimate disposition of all PFAS-contaminated material in accordance with all applicable hazardous waste and/or hazardous substance disposal requirements.

sought relief through a Federal Tort Claims Act claim against the United States of America and launched litigation against the USA as well as filed suit against multiple chemical companies responsible for the distribution of the AFFF compounds which the US Air Force utilized at Cannon Air Force Base. The responsibility for the PFAS contamination stream discussed here lies with these parties and not the Applicant.

After removal, the Applicant will conduct confirmatory PFAS sampling of soils utilized in composting area and any other locations from which material is removed and coordinate with NMED on next steps to comply with state requirements and protect public health.

Option 2.1.2: Cremation with Mobile On-Site Crematory equipment

Implementation of this option is only allowed with NMED approval after the completion of Phase 1 of the Removal Plan and subsequent legal and technical review, including full review of the PFAS sampling results and the best available science and specifications related to fate and transport of PFAS through incineration.

The animal carcasses, reduced by weight through the composting process in Phase 1, would, in this scenario, be cremated on the Highland Dairy property. Because of the high residency temperatures involved in the cremation process (up to 1,300° F), this method of disposal may result in ash that has low to non-detect levels of PFAS. The heat and residency formula for cremation are designed to break-down the long-chain carbon compounds. Ash with PFAS levels less than the RCRA screening level could remain on the Highland Dairy property or be transported to a conventional solid waste landfill (i.e., regulated under RCRA Subtitle D (Municipal Solid Waste)). If NMED approves this option, Highland Diary will coordinate closely with NMED on each step, including reviewing specifications for candidate on-site incineration companies, preparing necessary regulatory reviews and permitting processes, if required, for air emissions, and preparing proper sampling and contingency plans to be implemented during and after the cremation process.

As one example, Highland Dairy has proposed contracting with Clean Harbors Inc. (CHI) under this scenario, and CHI would deliver a mobile crematorium with capacity to cremate the remains of 102 animal carcasses per 14-hour day. During Phase 1 (composting), NMED will conduct further research and review of relevant technology testing, PFAS disposal research and other studies to understand the best available science associated with incineration of PFAS-contaminated hazardous waste.

After removal, the Applicant will conduct confirmatory PFAS sampling of soils utilized in composting area and any other locations from which material is removed and coordinate with NMED on next steps to comply with state requirements and protect public health.

Option 2.1.3: Demonstrate to NMED that an alternative management and disposal method is equivalent to or more stringent than 2.1.1 or 2.1.2.

The Removal Plan does include description of this option, as it is subject to future development and proposal by Highland Dairy to NMED.

ACTIONS TO BE TAKEN IF TESTING REVEALS THAT THE IMPACTED MATERIAL IS NOT HAZARDOUS:

Option 2.2.1: Permanent Disposal of Impacted Materials On-site

In the event that PFOA and/or PFOS levels in the composted material are below the screening level established by the NMED RCRA Risk Assessment Guidance, the Applicant may complete the task of permanently disposing of the composted material onsite.

At present, the NRCS has prohibited the burial of the PFAS contaminated carcass materials. However, this application and this Option (2.2.1) presumes that the composted material will test for PFAS at levels below the RCRA screening level. (Under separate instrument, the Applicant is appealing the February 2022 decision of the NRCS to disallow burial of the animals in their indeterminate state.)

Applicant notes that prior to this application and approval of the Removal Plan, the carcasses were left exposed to the elements (including the oxygen in the atmosphere) in order to accelerate the decomposition of the animal carcasses.

The move to permanent burial of the composted material would involve the introduction of a 'cap' that had not been implemented previously to the process, including during Phase 1. This will require securing a substantial amount of mixed clay, sand, manure, feed, feed scrape and other organic material to create a 2-to-3-foot layer of material on the top of the finished compost so that the composted material is encased.

This is sometimes referred to as involving the placement of "earthfill" material on top of the tomb of composted material, as presented in Figure 14 below:

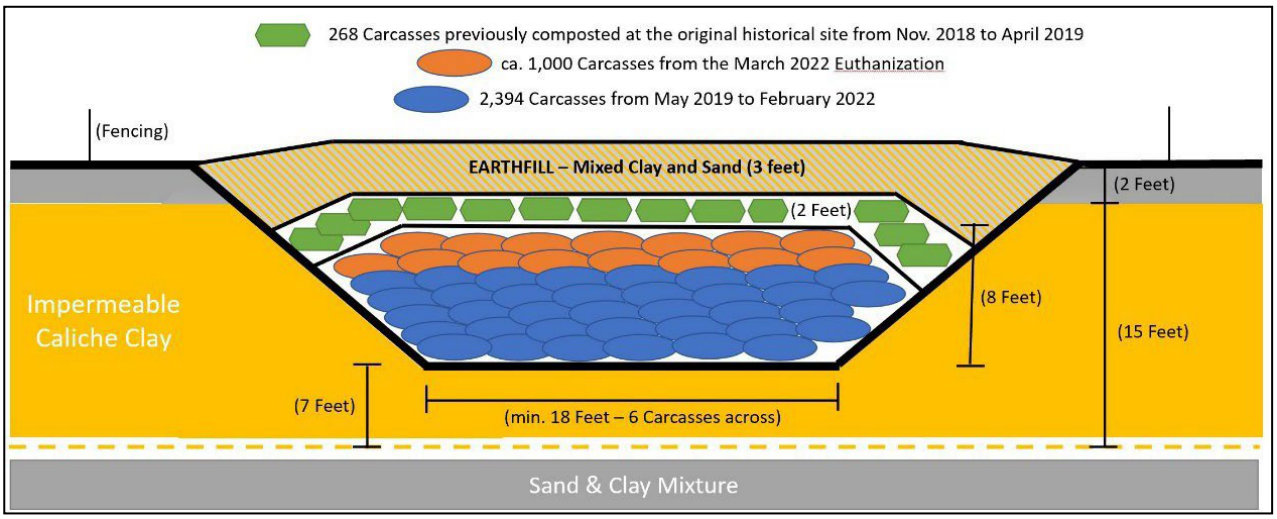


Figure 14: *Permanent Burial of Composted Material*

Option 2.2.2: Removal to Conventional Landfill

Any impacted material that is not hazardous based on results of PFAS analysis during Phase 2 may be transferred to a conventional solid waste landfill such as the Clovis Landfill, should they choose to accept the waste. Before implementing this option, Highland Dairy will consult directly with NMED's Solid Waste Bureau to ensure all requirements are met by the Dairy and the receiving landfill.

After removal, the Applicant will conduct confirmatory PFAS sampling of soils utilized in composting area and any other locations from which material is removed and coordinate with NMED on next steps to comply with state requirements and protect public health.

Option 2.2.3: Demonstrate to NMED that an alternative management and disposal method is equivalent to or more stringent than 2.2.1 or 2.2.2.

The Removal Plan does include description of this option, as it is subject to future development and proposal by Highland Dairy to NMED.

Removal Plan Conclusion

This Removal Plan is consistent with applicable federal and state law as of the date of approval. In addition, the Removal Plan furthers the public policy objectives of protecting public health through proper management of PFAS contamination. Highland Dairy agrees to work in close coordination with NMED throughout implementation of this Removal Plan. At any point during implementation, NMED may seek agreement from Highland Dairy to enter into a legally binding consent order that will reflect the provisions of the Removal Plan and support the prompt gathering of new data and deliberate regulatory decision-making throughout the process.

10. 12/21 DIPP Regulation Benefits for the Highland Cow Buy-Out:

This Application Narrative contains the Applicant's "Removal Plan" for live animals that are still on the dairy which remain subject to the November 2018 quarantine. It is further designed to supplement the information that is required of the Applicant pursuant to USDA Form FSA 373 B which was published by the USDA Farm Service Agency on April 1, 2022.

That FSA application form ("COW DEPOPULATION AND DISPOSAL APPLICATION – DAIRY INDEMNITY PAYMENT PROGRAM") contains two sections – "Section One" addresses animals that are to be depopulated and removed, and "Section Two" addresses animals that have passed away prior to the time of the application. The Applicant has been working closely with FSA in the run-up to the publication of this application form during the five months since the Regulation was adopted giving rise to this Cow Buy-Out benefit) and was lately advised by the USDA FSA that Highland Dairy would be eligible to recover for those animals that have already died (through a Section 2 application).

a. Application 001 – Animals Deceased between November 1, 2018 and April 10, 2022:

Therefore, on April 12, 2022, the Applicant did apply to the FSA for the death indemnity benefit for the predeceased animals. The calculation included the gross number of 2,759 animals that had died through April 10, 2022, with a subtraction for the number of adult dairy cows that were within the normal mortality rate for farms in the State of New Mexico (totaling 131) during the relevant 42 month time period, totaling 131 head of cattle. This gave rise to a net number of 2,628 deceased cattle for which the Applicant was eligible for an indemnity payment, with a LIP value of $4,264,100.36, based on the 2018 LIP Fact Sheet figures.[12] There were no heifers or calves included in these figures.
The Applicant contends that the DIPP program must recognize the date of loss as triggered by the NMDA letter of November 5, 2018 withdrawing the Grade A milk permit and the contemporaneous USDA, FSIS and FDA letters referenced above and found here that obliterated the marketing opportunities for milk and beef. The Applicant sought a 100% benefit payment for these predeceased animals. There is no reason or basis for a 50% distribution upon acceptance of the application with a 50% reconciliation payment to be made at a later date.

The Applicant notes that the New Mexico FSA State Committee-approved mortality rate for dairy cattle in New Mexico is 1.5%[13] for adult cows and those non-adults weighing more than 400 lbs. The state FSA approved rate for cows weighing less than 400 lbs is 5.0%. (We note that Highland achieved an actual on-dairy mortality rate of approximately half this figure – 0.8% over its more recent years of operation prior to the PFAS contamination.) Moreover, all of the animals that are the subject of all of the DIPP Cow Buy Out applications are adult cows. (A copy of the Applicant's normal mortality rate calculations

[12] Section Two of FSA Form 373 B provides that LIP Fair Market Value figures that correspond to the year of the animals' death would be imposed upon these qualifying deaths. The applicant noted in its application cover letter to the FSA that this would deprive Highland Dairy of more than $800,000 in benefits because the LIP fact sheets in intervening years dropped the Fair Market Value figure from $1,622.50 to $1,300.00 over time, while once condemned, and placed in quarantine, the animals that remained on the dairy imposed a cost of more than $8.1 million for feed and care during the time that it took the agency to develop this regulatory response. The Applicant participated in a study during 2019 to assist the USDA Food Safety & Inspection Service determine the viability of rehabilitation efforts on these dairy cows, and continued to keep the animals alive throughout the administration of Sec. Perdue and for the first year of Sec. Vilsack's term in office in the Biden cabinet with the uncertainty that the animals – if deceased – would be disqualified for any benefits under this newly launched regulatory program.
[13] Information provided by Mr. Dustin Cox, N.M.S.U. and N.M.D.A. as of December 10, 2021.

against the adult herd population is incorporated into Appendix B of the April 12, 2022 Section Two application.)

This Removal Plan (and Application Narrative) is required for an application pertaining to Section One – and relates to the 617 animals that remain alive as of today's date.

The Applicant expect to submit a follow-up Section Two application pertaining to those animals that will have died prior to the acceptance of the Section One application with the Removal Plan. We are presently losing about 10 animals per day, and on April 15, 2022, some 230 animals were culled as mercy killings.

Nevertheless, it is true that in a broader sense, ALL of the animals that have died on Highland Dairy are receiving equal treatment as to the three-phase removal plan.

Once this Removal Plan and Application Narrative is accepted by **Dr. Ralph Zimmerman**, the New Mexico state veterinarian, and **Secretary James Kenney** of the New Mexico Environment Department, the Applicant will submit this application to the Deputy Director of the Farm Service Agency (or the Curry County FSA Office as he may be directed) in order to qualify for compensation afforded by 7 CFR § 760 providing for the payment of figures approximating the fair market value for the cattle that are to be depopulated on Highland Dairy.

The Applicant submits this application in two parts – first for those animals already deceased which have commenced the 'removal' process by being placed in compost positions over the past three years, and second, for those that require depopulation and then will follow the remaining two-part removal plan.

b. Application 002 – Animals for Depopulation and Removal:

The Applicant contends that the segment of the herd which has survived to date – 617 still-living adult cows – are likewise to be properly valued as of the date of their condemnation as a result of the actions of the FDA and the NM Department of Agriculture – November 5, 2018.

The applicant therefore hereby asserts that it should be entitled to the following formula for benefits, assuming that the 2018 LIP Fact Sheet is referenced as of the time that the application is accepted:

Dairy Cow:	Count:	2018 LIP FMV Rate:	50% Initial Payment:	50% Reconciliation Payment:	Total:
Adult	617 (less other intervening deaths)	$ 1,622.50	$ 500,541.30 (ibid)	$500,541.30 (ibid)	$1,001,082.50 (ibid)

The total requested for application number two (Section One of the form) is said to be $1,001,082.50, with half of this amount (50%) to be paid upon the Deputy Director's approval of the application and the balance (50%) to be delivered to the Applicant upon the completion of the depopulation exercise and the placement of these affected animals in the Disposal Trenches in advance of their eventual disposition pursuant to the criteria in this Removal Plan. The applicant notes that the normal mortality figure to be imposed for a reduction in the herd is to be limited to that of one, two or three head,

depending on the time that it takes for the Removal Plan to be approved by the State Veterinarian and the NMED. There are no heifers or other juvenile animals to be included in this Application 002.

Moreover, from the total of 617 live animals that are the subjects of this application as of the current date, this figure (and corresponding value of this segment of the herd) is expected to decrease at an approximate rate of 10 animals per day (i.e. $16,225 per day) through the natural attrition in the herd which is at the end of its life. Those animals that die henceforth (outside of the depopulation exercise) will be added to the 290 head that are referenced in Application 003 described below.

c. Application 003 – Animals Deceased between April 11, 2022 and final Depopulation:

The Applicant will submit a final DIPP Cow Buy-Out application on Form 373 B (Section Two) to address the DIPP Cow Buy-Out indemnity payment related to those animals that have died on Highland Dairy since April 10, 2022 and will have died up until the time of this final application and the depopulation exercise. The date of the final application is anticipated to be that of the Depopulation exercise and will exclude those head that are the subject of Application 001 and Application 002.

To date the deaths have been as follows:

April 11, 2022:	7 head of adult cows
April 12, 2022:	11 head of adult cows
April 13, 2022:	6 head of adult cows
April 14, 2022:	8 head of adult cows
April 15, 2022:	230 head euthanized
April 16, 2022:	9 head of adult cows
April 17, 2022:	8 head of adult cows
April 18, 2022:	7 head of adult cows
April 19, 2022:	4 head of adult cows
Total to date:	290 head of adult cows

This number shall be supplemented with all deaths that occur prior to the depopulation date. There will be no heifers or other juvenile animals to be included in Application 003.

11. Soil Removal

Section 3 of the Applicant's three-part Removal Plan relates to the disposition of potentially contaminated soils which are underlying the historic disposal area and Disposal Trenches 2(C) and potentially 2(B) as applicable.

The Applicant asserts that the disposition of the soils (including any stained soil that may have harbored some residual PFOS contamination) will only come into play in the event that the animal carcasses, testing positive for residual PFOS in or about September 2022 (or later), are then removed from the trenches. Should stained soil be removed, photographic evidence will be collected before and after work is completed. Representative sampling of all disposal trenches will be performed in accordance with U.S. Environmental Protection Agency SW-846 Test Method 1311: TCLP for RCRA testing to ensure no remaining PFAS concentrations are present above the NMED RCRA Screening guidance.

Additionally, a record would be made of the total volume of non-organic soil removed and final disposition at a permitted RCRA Subtitle C (Hazardous Waste) landfill.

In such an event, the procedure to be followed will be consistent with the NRCS guidelines pertaining to soils, which we believe will be published in the coming six to 12 months.

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