Response Summary for Comments Received on

Indirect Discharge Permit ID-9-0043 Renewal

Agri-Mark, Inc. (dba Cabot Creamery)

December 8, 2015

The draft indirect discharge permit ID-9-0043 was placed on public notice from June 15, 2015 to July 14, 2015. During this period, the Agency of Natural Resources received comments and a number of requests for a public hearing. In response, the Agency held a public hearing on August 31, 2015. The public comment period was extended from the hearing date through September 10, 2015.

All of the written and verbal comments received during the comment periods and at the public hearing are provided below, along with the Agency's responses. The final decision and changes made to the draft permit are found at the end of this document.

COMMENTS RECEIVED PRIOR TO PUBLIC HEARING

Comment #1:

The following are comments submitted by The Johnson Company on behalf of the Permittee (Agri-Mark Inc, dba Cabot Creamery):

1. Under Part II, Section B2 (Nature of Indirect Discharge). In the second paragraph, clarification should be provided that the limitation to 1/2 inch per year is limited to *Year-Round* well-verified fields.

2. Under Part Ill, Section A8 (Quality Assurance/Quality Control Plan). Item A8 references the QA/QC plan dated November 16, 2005. For information purposes, an updated QA/QC plan dated April 2, 2015 was submitted via e-mail by The Johnson Co on behalf of Cabot to the Indirect Discharge Permit Section on April 2, 2015. It should be noted that the updated QA/QC plan contains updated lab certification information.

3. Under Part II, Section A5 (Modifications and Additions to Attachment A). The Johnson Company has investigated additional farm fields pursuant to the Land Application Guidelines for inclusion in the final Permit. The additional fields are located in Stowe, Hardwick, and Danville VT. Results of the field investigations are presented in the attached document "AgriMark Inc IDP 90043 Land Application Update #20".

Agri-Mark also has one additional manure pit in Morrisville that they wish to include in the final Permit, but are waiting on the information to provide to the Indirect Discharge Section. It is anticipated that this information will be available such that it will be submitted prior to the close of the Comment Period July 14th.

Response to Comment #1:

The language has been revised in the permit to make it clear that the 1/2 inch per year limit is for well-verified year-round fields.

In Part III of the permit, the April 2015 QA/QC Plan has been referenced.

The fields identified in Land Application Update #20 have been added to the authorized field list in Attachment A-1 and A-2. As a result, the available acreage in Part II, Condition D3 of the draft permit has been updated to include acreages of these fields.

Comment #2:

On behalf of members of Whey to Go, a group of citizens and farmers from North Central Vermont, I am requesting that you hold a public hearing with regard to the Agency's Draft Indirect Discharge Permit ID-9-0043 (Agri-Mark).

Among the issues we would like to address are heavy rainfall in recent years and the increased potential for wastewater runoff into rivers, lakes and streams, and the following permit-specific issues:

1. changes in monitoring the waste [e.g. in the 2011 permit, the depth to groundwater in the unlined storage ponds was measured at least once a month between March and May, but in 2015 these measurements are done only upon request of the Secretary;

2. omissions from the 2015 Draft Permit, which were in the 2011 permit, including:

•[2011], General, A-9 Summary of Alternative Disposal Methods: The previous permit stated that by March 31, 2015, "the permittee shall submit a report to the Secretary that will include any information that have been collected regarding alternative disposal methods investigated during the previous five years. The conclusions regarding the suitability of the methods shall be included in the report."

•[2011J General, A-10, Annual Meeting: "If the Secretary or designated representative determines it is necessary, a public informational meeting will be held regarding any modifications or additions to Attachment A, or any other sections of this Permit."

Response to Comment #2:

A public hearing was held on August 31, 2015.

Part II, Condition D1 of the draft permit did specifically prohibit the surface runoff of daily processing wastewater to waters of the State. That condition has been revised to also

prohibit land application during a heavy rain event or if standing water is present in the fields. Further restrictions have also been placed on winter time land application.

The requirement for monthly groundwater level measurements around the lagoons in the spring was removed because measurements done on a monthly basis are not very meaningful considering that groundwater levels can fluctuate quite a bit during the course of a month. The required weekly lagoon level measurements and volumes sprayed are much more useful information in determining whether there is any polished permeate leaking from the lagoons. If the Agency suspected that a leak was occurring, we would require the permittee to conduct groundwater sampling and take groundwater level measurements on a frequent basis.

The alternative disposal methods summary was submitted as required. The permit now requires the submittal of an Alternatives Analysis by December 31, 2016.

The permittee is required to submit an application for permit amendment for all proposed modifications or additions to Attachment A or any other section of the permit. Since all draft amendments are required to be placed on public notice, an annual public informational meeting would be duplicative and likely occur after the final decision has been made. The permit does require that the permittee provide each town clerk with a list of the fields that are within the town.

Comment #3:

In Colorado, from where I recently moved, we had help fighting for clean water from Copirg which is a student powered lobbying group.

In addition to run-off pollution I am concerned that we are not aware of "spray days," when dairy farmers who grow GMO (round-up ready) corn ARE NOT required to post a public notice stating when the fields are fumigated with chemicals.

There is consensus, I believe on the fact that such methods expose neighboring fields due to drift, and pollute ground water, pets, anyone such chemicals come into contact with; in Colorado I know that every suburban lawn application, which is a much smaller amount, is required to be marked with a warning sign to alert passersby that a toxic chemical has been applied on such a date. Maybe the struggle is for another day, but I am stating here that this is a source of locally applied glyphosate and other neurotoxins.

Response to Comment #3:

This comment is not relevant as the permittee does not fumigate corn fields.

Comment #4 (form letter signed by 3 parties):

We, the undersigned, call on the Agency of Natural Resources to hold a Public Hearing on a proposed indirect discharge permit of Agri-Mark Inc. DBA Cabot Creamery, Cabot Vermont.

In the past, many in our community have complained that there has been inadequate monitoring of the chemically-ladened wastewater and land applications of Cabot's wastewater -wastewater that contains toxic chemicals from cleaning fluids, many of which have a high concentration of phosphorous. The following towns are targetted for land application of wastewater if this permit request is approved: Albany, Barnet, Barton, Brookfield, Brownington, Cabot, Calais, Craftsbury, Danville, E. Montpelier, Elmore, Glover, Greensboro, Hardwick, Irasburg, Lyndon, Marshfield, Morristown, Peacham, Plainfield, Randolph, St. Johnsbury, Sheffield, Stannard, Walden, Wheelock and Wolcott.

We are deeply concerned that heavy rainfall in recent summers has caused excessive wastewater runoff into the Winooski and Lamoille Rivers and from there into Lake Champlain from rain-saturated fields in the 27 towns where wastewater is due to be land-applied. (In June, 2015, Montpelier experienced the heaviest rainfall in Vermont history; in 2011, a year of heavy rainfall and Tropical Storm Irene, Vermont Water Management Division reported that its overall phosphorus readings for Vermont in 2011 [due to runoff] were at an astronomical high.

We want to know what Cabot/Agri-Mark has done to limit the concentration of phosphorous in its waste-stream, given that the federal Environmental Protection Agency (EPA) has required the state of Vermont to curb phosphorous output in an effort to curb blue-green algae in Lake Champlain and elsewhere.

Lastly, we remain deeply concerned about the high incidence of cancers and ALS (Lou Gehrig's disease) in the very areas where the creamery's waste-water is being land applied. We reiterate our demand that the wastewater be treated in a wastewater treatment plant, as was originally ordered by Region 5 of the Vermont Act 250 Commission.

We wish to have a hearing to present our concerns.

Note: One commenter added the following hand written comment: 'All over America agencies established to protect our environment are failing to do their job because of special interests like Cabot. Hold hearing but act in behalf of water and land quality. Act in behalf of our common homeland and the taxpayers".

Response to Comment #4:

A public hearing was held on August 31, 2015.

Part II, Condition D1 of the draft permit did specifically prohibit the surface runoff of daily processing wastewater to waters of the State. That condition has been revised to also prohibit land application during a heavy rain event or if standing water is present in the fields. Further restrictions have also been placed on winter time land application.

Cobot does not do any phosphorus removal treatment of the washwater. Cabot has indicated to the Agency that they use cleaning agents with the least amount of phosphorus that still meet cleaning standards.

There is no evidence that the spraying of dairy processing wastewater is linked in any way to any elevated cancer or ALS incidences in north central Vermont. Recent testing of the dairy processing wastewater did not reveal the presence of any volatile organic compounds, semi volatile organic compounds, pesticides, herbicides and metals above reporting limits. These toxic scan results are consistent with previous toxic scan results of the wastewater. In addition, there are no direct exposure pathways between the washwater and human contact. Attached to this Response Summary is a letter from the Vermont Department of Health that indicates that there are not elevated levels of cancer or ALS in Washington, Caledonia, Orleans or Lamoille Counties.

As previous documented in past forums, discharge from a wastewater treatment plant large enough to treat all of Cabot Creamery's process wastewater would not be able meet the Vermont Water Quality Standards in the Upper Winooski River, which would be detrimental to fish and other aquatic life in the river. Diffuse disposal over hundreds of square miles of farmland where nutrients can be taken up by plants is a much more sound environmental practice in terms of nutrient removal than a direct discharge of wastewater with less treatment directly into the Upper Winooski River.

The Agency is committed to protecting our environment and is not in any way yielding to the special interests of Cabot or anyone else.

Comment #5 w/attachment:

Vermonters for a Clean Environment hereby formally requests a public hearing and extension of the public comment period prior to the re-issuance of ID-9-0043.

Vermont has entered a new era with respect to how we regard and address water quality concerns, especially in the Lake Champlain Basin. Since the 1980's, Cabot Creamery's only method of disposal of its industrial wastewater has been land application. The requirements of the permits allowing this practice have not changed significantly over the last 30 years, yet the volume of wastewater generated and disposed of by Cabot has grown exponentially.

If issued, ID-9-0043 will allow Cabot Creamery to dispose of over 425 million gallons of untreated, industrial wastewater and concentrated whey over the next five years. Disposal would consist of direct injection into 44 manure pits and direct

spraying onto 538 fields, including during the winter months. The vast majority of this disposal area is within the Lake Champlain Basin.

ID-9-0043 would require groundwater quality monitoring of only three out of the 538 fields and surface water quality monitoring of only two of the 305 streams receiving potential runoff. These streams include numerous named and unnamed waterbodies such as the Winooski, Lamoille and Willoughby Rivers.

We believe that the scale, scope and potential implications of the allowances in this 5-year permit warrant a public hearing and extended comment period.

Attachment

Vermonters for a Clean Environment has many concerns regarding the reissuance of ID-9-0043. Please take our comments into serious consideration.

Disproportional Scale and Scope of Land Application of Waste

Using whey, left over from milk processing, to in-turn fertilize farm fields that feed the milking herd is an ancient and beneficial farming practice. It allows nutrients to cycle through the local environment on a natural and proportional scale. This tradition is likely the root of Cabot Creamery's disposal of processing waste through land application.

Unfortunately, the volume and contents of waste spread through Cabot's current land application program has ballooned into anything but a local or natural cycling of nutrients. The creamery takes in millions of gallons of milk from 1,200 farms, all across the Northeast; from Orono, Maine to Ithaca, New York, to New Haven, Connecticut. The wastewater and concentrated whey resulting from the industrial processing of this huge volume of regional milk is then added to the already over-burdened nutrient load afflicting the very local and relatively tiny Lake Champlain Basin.

Lack of Sufficient Water Quality Monitoring

Cabot's processing waste consists of an annual average of 150,000 gallons per day of industrial wastewater plus 35,000 gallons per day of concentrated whey. All of this gets spread on 538 fields within a handful of towns in Northern Vermont. Spreading occurs throughout the year, including in the dead of winter when runoff is most likely to result. Ground and surface water quality monitoring is shockingly limited. Out of 538 spray sites, only three are monitored for ground water quality and only two are monitored for surface water quality. Monitoring sites are known to the permittee and stay the same every year. Frequency of sampling is also limited. Groundwater samples are collected three times per year and surface water samples are collected

four times per year. Thus, each year there are a total of 17 sampling events to monitor the land application of 85 million gallons of industrial waste into one watershed.

Outdated Science

The most recent guidelines for the land application of waste from a dairy processing plant, on which the terms of the proposed permit are based, were issued by the Vermont Agency of Agriculture on August 14, 1990.

Soil Health Should be Monitored and Fields Rested

This twenty-five year old document, *Guidelines for Land Application of Dairy Wastes,* issued by the Vermont Agency of Agriculture warns of the potential damage improperly handled dairy wastes can cause to soil and water.

"The nitrogen, phosphorus and potassium content in most dairy processing by-products should not be overlooked as a fertilizer amendment to the soil. However, excessive carbohydrates may result in a condition known as 'clogging', which restricts water percolation and may result in anaerobic soil conditions, preventing infiltration of the dairy processing waste."

"Overloading of the soil can exceed the soils renovative capability, increasing the potential for the waste constituents to migrate to the groundwater."

ID-9-0043 requires no soil monitoring, rotation of or rest for fields upon which dairy waste has continuously been land applied since the 1980's.

Groundwater as a Public Trust

In 2014, some parameters at all three monitoring sites showed some elevated pollutants in groundwater as a result of spraying. Based on the Groundwater as a Public Trust Law, analysis must be done when any impacts to groundwater occur. There is no language in the proposed permit indicating that a Public Trust analysis has been done.

Toxicology of Wastewater Has Not Been Adequately Addressed

ID-9-0043 does not adequately characterize the chemical components of the wastewater, and it does not contain mechanisms to evaluate potential routes of exposure for the environment or public health.

This situation mirrors that of Omya, which similarly has had a history of questionable waste management practices which were greatly improved through a collaborative process. If Cabot is open to working to develop good science upon which decisions can be made that bring the company's operations up to improved best available technologies, VCE would be pleased to lend our expertise. At this time, based on our review of the draft permit and background materials, it is not possible to evaluate the potential for environmental harm and human health.

Direct Injection to Manure Pits

Cabot Creamery uses 44 manure pits on area dairy operations to dispose of over 4 million gallons of untreated, industrial wastewater by direct injection each year. This wastewater mixes in with the other wastes in the pit and is presumably sprayed on unnamed, area fields. Impacts, including the addition of potentially toxic chemicals and their byproducts to these unnamed fields and surface waters are not accounted for in the proposed IDP. Chemical synergism is an area that warrants further scientific investigation.

Also, the Vermont Agency of Agriculture requires that no more than 10% of the contents of the dairy operations' manure pits consist of chemical wastewater. Is Cabot's wastewater contribution to these pits accounted for under this requirement?

Unlined Lagoons

Historically, Cabot's IDP required storage lagoons, used to hold concentrated whey were to be lined in order to protect groundwater quality. What was the justification for the removal of this provision? Is storage of concentrated whey in unlined lagoons considered to be the best practice?

Conclusion

Cabot Creamery has had a long history of struggling to dispose of its whey and wastewater. Cabot's first Act 250 permit application, submitted in 1986 said "*Waste disposal, an area of little concern in the early years of Cabot, is now a real problem.*"

Cabot's first Act 250 permit was granted in 1986, on the condition that the facility construct its own wastewater treatment plant to deal with the now large volume of wastewater and whey. Nearly 30 years later, that requirement has been long-ago dropped and irresponsible, outdated nutrient loading has been permitted to continue.

Given the volumes of waste, with potentially toxic components, threat to ground water, certain contribution to the eutrophication of surface waters, including to the

TMDL of Lake Champlain at this time when the citizens and government of our State are together, making huge sacrifices to work towards cleaner water, Vermonters for a Clean Environment recommends that ID-9-0043 be denied as written and Cabot Creamery be required to construct a waste water treatment facility.

Response to Comment #5:

A public hearing was held on August 31, 2015. The public comment period was extended until September 10, 2015.

The permittee does not spray concentrated whey on farm fields. The permit authorizes disposal of nearly 274 million gallons of daily processing wastewater on farm fields and into manure pits over a 5-year permit period, not 425 million gallons as stated in the comment. However, based on actual discharges over the last 10 years, which have been very consistent, the permittee discharges nearly 100,000 gallons per day, or roughly 182 million gallons over a 5-year period.

With the addition of the fields referenced in Comment #1 above, there are now 314 approved fields identified in Attachment A-1 for land application. Many of these fields are further subdivided into sub-fields to reflect seasonal spraying limits. As indicated in Attachment A-2, there are now 589 sub-fields.

There are approximately 75 receiving streams, including the receiving streams for the fields referenced in Comment #1 above. There are also 3 fields where groundwater discharges to ponds.

The monitoring requirements in the permit have been significantly increased to include groundwater and surface water sampling for 15 fields plus the Winooski River.

Soil sampling of 30 fields used regularly for land application has also been added to the permit requirements. The permit does not require rotation or resting of fields because land application does not occur on most fields on a year-round basis due to the annual spraying limit of one inch per year (27,152 gallons/acre/year).

The permit does require that Cabot comply with the Groundwater Protection Rule & Strategy. These rules are currently being revised to include public trust language.

Toxic scan analyses have been conducted on the washwater on numerous occasions which demonstrates that the waste is not hazardous. The permit also requires additional toxic scan analyses to be conducted during the term of the permit. Even if there were contaminants of concern, there are no direct pathways for exposure to humans.

Discharge of washwater to manure pits is required to be done in accordance with the Vermont Guidelines for Land Application of Dairy Processing Wastes. The disposal

limits in Attachment B of the permit are based on 10% of the manure pit capacities as per the Guidelines.

The lagoons are used for the storage of polished permeate during the winter months. They are not used for storing whey.

As previous stated, discharge from a wastewater treatment plant large enough to treat all of Cabot Creamery's process wastewater would likely not be able meet the Vermont Water Quality Standards in the Upper Winooski River, which would be detrimental to fish and other aquatic life in the river. Diffuse disposal over hundreds of square miles of farmland where nutrients can be taken up by plants is a much more sound environmental practice in terms of nutrient removal than a direct discharge of wastewater with less treatment directly into the Upper Winooski River.

Comment #6:

I have been following the matter for several years, and at one time even took a sample from the Cabot waste water lagoons and had it tested. The amount of this waste water that is currently sprayed - even through the winter where possible, such as my neighborhood off and on - if I understand it correctly will be considerably increased in volume for the coming years. From the Black River north and the Winooski, and other streams down to Randolph and west, including from the Middlebury plant, has raised serious concerns about drinking water contamination beyond what flows into Lake Champlain.

I have a 2-page list of industrial cleaning agents from the previous permit and would like to see such a list for the currently planned volumes and contents. Middlebury has had its own problems recently and should be carefully considered by the public as well.

Hence my voice raised with others to hold public hearings before a decision is made without public input. Time is running short for enough people to learn about this matter but perhaps you will receive the needed requests for hearings by July 14 next week to prepare for this most important decision this year because of its impacts on a vast area of Vermont.

Response to Comment #6:

A public hearing was held on August 31, 2015.

Attached to this Response Summary are a Summary of Cleaning SOPs and a list of cleaning and sanitizing agents, the ingredients and dilution rates which Cabot provided to the Agency on October 6, 2015.

Comment #7:

Thank you very much for providing the Fact Sheet for this Permit.

On page 7 we see that Total Dissolved Solids, Total Suspended Solids, Total Phosphorus and Total Dissolved Phosphorus, and Biochemical and Chemical Oxygen Demand values have wide ranges, and that the Means are unfortunately toward the high side.

On page 9 we see that *no water quality monitoring* is done in the receiving stream. This is unfortunate, given the State's and EPA's recent efforts to clean up Vermont's water quality. Testing water quality is a useful tool for keeping Agri-Mark accountable to their permit.

We cannot deny the inter-relatedness of land and water, of groundwater and surface water. Whatever we use on land near streams tends to enter the streams. What does this permit program require for buffer areas to protect streams?

Is there any relationship between the requirements of H.35 and Agri-Mark's operations? Given the concerns around water quality expressed in H.35, please incorporate the following into the permit:

1. urge measures to get lower TDS, TSS, TP, TDP and Oxygen demand factors in the wastewater;
2. require 30 foot mixed vegetation buffers to protect receiving streams (if not already required);
3. require water quality monitoring for receiving waters of the Winooski River, without making assumptions, given water quality problems downstream.

Thank you for this opportunity to comment on Agri-Mark's Permit for land-applying dairy wastes.

Response to Comment #7:

Previous indirect discharge permits did not contain sampling requirements for the Winooski River because it was assumed that land application of washwater on Field 40A would be in compliance with the Vermont Water Quality Standards in effect at that time. This assumption was based on plant uptake of the nutrients, attenuation and dilution provided by groundwater, and dilution provided by the River. The permit now contains chemical monitoring and biological assessment requirements for the Winooski River due to the adoption of the more recent Water Quality Standards, effective October 30, 2014.

In accordance with the permit and the Vermont Guidelines for Land Application of Dairy Processing Wastes, spraying of dairy processing wastewater cannot occur within 50 feet of surface water in summer and fall, and not within 100 feet in winter and spring. Further restrictions have been added to the permit to prevent runoff of washwater to waters of the State such as when the ground is frozen.

There is not a direct connection between the requirements of H.35 and Cabot's waste disposal activities, other than a new requirement in the permit that the drivers take a minimum of 8 hours of training to become certified land applicators. The permit contains many requirements relating to land application limits and restrictions to assure that there will not be any direct discharge to surface water and that the Vermont Water Quality Standards will be met. Further, Cabot is participating in a stakeholders process to evaluate possible alternative treatment and/or disposal options.

Comment #8:

Lake Champlain International requests the Agency of Natural Resources hold a public hearing on the pending indirect discharge permit (IDP) for Agri-Mark, Inc. DBA Cabot Creamery, Cabot, Vermont.

In light of the worsening nutrient loading trends in the Lake Champlain Basin, as acknowledged in the current TMDL process, we believe it both responsible and reasonable to review the science and definitions under which the past IDP was issued and by which a future permit may be granted to the satisfaction of the impacted neighboring and downstream parties.

Additionally, we request an extension of the comment period until after the hearing.

Thank you for your consideration.

Response to Comment #8:

A public hearing was held on August 31, 2015 and the comment period was extended from the hearing date to September 10, 2015.

Comment #9:

As discussed in our e-mail last week (July 8, 2015) the following is an additional comment regarding Agri-Mark Inc's. (Cabot) Permit Renewal.

1. Under Part II Section D9A (Manure Pits) and Attachment B (Approved Manure Pits). Cabot wishes to add a new pit to their Indirect Discharge permit as follows: Dennis Morin Farm, 1082 Stancliffe Road, in Morrisville VT. This will be Cabot Pit ID *#671 X1*. The pit is a glass-lined steel cylindrical tank, which is 72 feet in diameter and 19 feet tall. Assuming the manure pit is operated to leave one foot of freeboard, the tank has a calculated capacity of 548,190 gallons. The Permit allows Cabot to utilize 10% of the calculated pit capacity (54,819 gallons) on an annual basis.

The signed Manure Pit Agreement and location map are provided with this email. Please do not hesitate to contact me with questions or comments, or if you need additional information.

Response to Comment #9:

The capacity of this manure pit has been verified and this pit has been added to the list of approved manure pits in Attachment B.

COMMENTS RECEIVED AT PUBLIC HEARING

Notes:

1. Outside traffic and other noise in the meeting hall obscured small segments of some comments during the hearing.
2. The commenters at the hearing expressed their desire to have their names included in the Response Summary.

David Dean Comments:

Good evening. I'm here representing the members of the Connecticut River Watershed Council. And before anyone starts tutoring as an , understand that a number of tributaries to the Connecticut River flow through or next to or near land where there is application. The Connecticut River is affected by the Long Island Sound TMDL. It is impaired for nitrogen. One thing I want to point out in terms of nutrient loading to the

river itself everyone's image of the river is something goes in, it may be bad at spot where it goes in Well, the Connecticut river is dammed from the second Connecticut Lake all the way down to Holyoke, Massachusetts. Thirteen generation dams, three water storage dams. It's a very long pond. And occasionally we too, have bouts of blue green algae. So, nutrient loading to the Connecticut River is a concern. When I read this permit, the thing that took my attention was the sheer volume; there are a lot of gallons of waste that are going to be land applied. So, in the interest in making sure that it's applied properly, I had some observations, not necessary questions, but observations. I do have one question but it's rhetorical. I'm not going to get to it this evening. Why is this permit in several sections, such as E6 thru E9, say upon request of the Secretary, that permittee shall, and now here I'm paraphrasing, do testing, do sampling and report sampling results and again its says "if requested by the Secretary or the Secretary's representative". In sections E3, 4 and 5, there are the parameters for which the permittee must sample, but there are no standards attached specifically to those parameters. I understand that the whole permit is tied to meeting the water quality standards and not impairing either surface or groundwater. But there is a separation. That link to the Water Quality Standards in section A4 between the groundwater standards. I'm talking about section E3, 4 and 5 so there is a disconnect and I would strongly suggest that you tie those parameters to the Water Quality Standards and how they to the Water Quality Standards . In my experience with permits, and I've now spent 17 years reviewing every NIMBY permit for the Connecticut River watershed. At first we had required plans, required monitoring, required testing and required reporting as part of that permit. And this is the rhetorical question and I look for an answer in the Responsiveness Summary. What is environmental protection purpose of this "if requested by the Secretary"? **Agency:** May I ask one clarification question? Are you talking about those E conditions in Part I or Part II? **Commenter:** No, Part I. **Agency:** So, sprayfield related. **Commenter:** Yes. As part of, and I believe this is, and I'm not sure which section this is, whether it's 1 or 2 of this, but you have operator certification. The permit must have an operator and an assist who's been properly trained etc, I have a question, particular in light of the recent passage of the Clean Water Act in terms of applicators. Are they considered custom applicators, and if so, should they be trained? In my opinion, they should. And with that, I hope I've given some good facts here.

Agency Response:

Although the commenter was referring to Part 1, Condition E7 related to receiving stream monitoring from the operation of the sprayfield, his comment also applies to the land application of washwater on Field 40A because Field 40A is upgradient of the sprayfield,

With regard to the comment that there is no link in the permit between the list of parameters that are required to be sampled and water quality standards, the draft permit in two places (Part 1, Condition D1 and Part 2, Condition D1) required the

permittee to comply with both the Water Quality Standards and the Groundwater Protection Rule & Strategy.

With regard to the comment that Cabot's truck drivers and sprayfield operators be trained and certified as custom applicators, the Agency agrees that this is a good idea. A condition has been added to the permit which requires the drivers to complete eight hours of training as a certified applicator once the Agency of Agriculture adopts a rule for custom applicators in accordance with the Vermont Clean Water Act.

Jessica Miller Comments:

I have a few questions, but the most critical questions are, the permit itself is divided into two separate waste streams; the land applied waste and the polished permeate, right. Now, the land applied waste has changed drastically in nature over the years, the nature of it. There's practically no whey as most of the whey is sent to Middlebury, and so the only thing that's really in there are the cleaning chemicals and the water. That's basically what's being applied to all the fields. Now, one of the responses, and I just wanted to talk about that part, the land applied waste. One of the responses years ago to that very question about the change in the nature was, "yes, the Vermont guidelines for land application of dairy processing waste are premised on the beneficial fertilizer amendment which occurs when dairy processing waste are applied to the soil. The return of nutrients such as phosphorus and nitrogen to farm fields is viewed as a recycling of these nutrients as opposed to passage to wastewater treatment facilities with a discharge to surface water. The guidelines do not set any standards as to the beneficial way which would make it acceptable to land application. In fact, and you'll love this, it could be argued the guidelines presume that the dairy processing waste contain such beneficial components belaboring on farm fields. Now, yes, these guidelines themselves say dairy processing waste. It doesn't mention whey. But those guidelines is based on the whey application guidelines, and that whey application guidelines, is made very clear. These are called Using Whey on Agricultural Land Disposal Alternatives. Because whey should be applied to soils at rates based on fertilizer content of the whey, it is not recommended that fixed irrigation systems get the proper In other words, the policy and practices, the practices of the application of the whey is based on the content of whey. Now, in the permit, you list the five: nitrogen, phosphorus, potassium; the major components of whey. The only phosphorus and nitrogen that you get from the cleaning chemicals of the washwater is phosphoric acid and nitric acid which are very acidic form of phosphorus and nitrogen, and if we can read the guidelines based on the component of the whey, determines how much you put on the fields, you apply to the fields, and as yet, as of this day I don't know how they determine how much they apply to the fields truck drivers get out to check the water to see if it drains to surface water. I've never seen that in the 26 years I've been here. So, I don't know how they determine that. OK, the second half of the permit deals with this polished permeate. The polished permeate as listed in the fact sheet

and the entire permit mentions only the disposal through land spray irrigation on their land. But that isn't what's happening now. Nowhere in that permit does it talk about the other recycling of the polished permeate. This ultimately winds up in municipal treatment facility. And in this potable water supply permit, it's not even referenced in the permit which deals with nothing; it has nothing to do with spray fields. So, how can this permit be valid when what you are disposing of in the land application program is not what you say it is and the polished permeate is not being used and applied and disposed of the way it says in the permit. **Agency:** Would you identify that document? **Commenter:** It's from a January 22, 2013 letter from Group Solutions, apparently the company that built the equipment for the recycling of the polished permeate, and I think, Agri-Mark's lawyer at the time.

Agency Response:

The amount of washwater applied to the fields is specified in the permit. Cabot employs an accounting system that informs the drivers every morning which fields can be land applied that day and how many loads can be sprayed on each of those fields.

In an October 6, 2015 letter, Cabot Creamery stated that they do not dispose of polished permeate or process washwater to the municipal wastewater treatment facility.

For a discussion of the applicability of the 1990 Guidelines, please refer to the Agency response to the commenter's written comments on page 61.

Ed Stanak Comments:

I'm Ed Stanak, a resident of Barre City. My comments are on behalf of the organization Vermonters for a Clean Environment and my comments have to do with the land application on 3,000 acres of fields located in 30 towns within the drainage basins of multiple rivers. I'm just going to go through my comments and questions.

#1. The content of the waste stream as has been pointed out, has changed since the late 1980s. Over time the applicant has represented in administrative proceedings that it has been successful in recovering most, if not all, of the whey content from the process that results in the various dairy products. The applicant has also indicated that there is a production cycle at the Cabot plant such that as the week progresses, product manufacture shifts from cheeses to yogurts to other products. Approximately 50 chemical clean-up agents are required to treat equipment, containment and conveyance surfaces and process areas between the production operations and the process events. It would seem that a significant component of the waste stream is now detergents and wash water with minimal dairy processing wastes, thus minimal nutrient content for the soils at the land application sites. In this context, does the 150,000 gallons per day waste stream for land application remain qualified for the exemption from the

regulations for indirect discharge permit regulations as set out in the Department's policy dated 1990?

#2. The proposed IDP includes several conditions intended to ensure compliance with the permit itself. This land application system involves sites located in several watershed areas across a large segment of northeast Vermont and depends upon a trucking system for land applications categorized by different seasons of the year and subject to a lot of site specific limitations for the land application. This establishes a pretty complicated means of waste disposal which is contingent on many variables. The courts in Vermont have held that permit conditions must be enforceable and not merely an administrative means to allow a commercial land use to proceed. The IDP permit has a lot of conditions in it, but it is difficult for a reasonable person to conclude that those conditions are sufficient to ensure compliance with the requirements for the land application system. Is the Department willing to revise the proposed IDP to include a monitoring system that utilizes GPS technology for the daily tracking of each truck's route and the specific sites used for the land applications?

#3. Many of the land application sites have been in use for several years, if not decades. These sites would appear to provide excellent opportunities to assess the long term and cumulative effects on the ability of the soils to provide effective treatment of the waste stream. Question, would the Department consider modifying the proposed IDP to include provisions for field testing of an appropriately broad sampling of these sites in order to evaluate the long term cumulative effects?

And finally, #4. Over the last few years, the Vermont legislature has placed increasing emphasis on the need to ensure the reduction of greenhouse gas emissions and carbon footprints in light of the increasingly detrimental effects of climate change. The applicant's land application program involves the hauling of wastes throughout a broad region of Vermont by diesel fueled trucks on a daily basis. Question, has the Department quantified and considered the carbon footprint of the applicant's trucking practices in preparing the proposed IDP?

Note: The commenter submitted essentially the same comments in writing at the hearing.

Agency Response:

Since these comments are similar to the commenter's written comments, please refer to the Agency's response to the written comments on page 58.

Kim Greenwood Comments:

I just have a few questions. I'm with the Vermont Natural Resources Council. My questions are specific to some of the permit conditions and requirements. The first is

the use of means for surface water reporting … surface water data and compliance with the Water Quality Standards, and Water Quality Standards don't rely on the mean value, they look at actual values and I'm curious why you chose to use mean values instead of an actual value. Do you want to response to that? **Agency:** I will respond in writing. I'm looking at one field here. One field, they did 20 sampling events for surface water quality for Field 75A. Yes, typically we do use the mean value. **Commenter:** I would say that my comment would be to ask you to revisit that decision because that's not how other programs do it, may not be what the Water Quality Standards require, in other words, you could have a violation that is instantaneous but when you combine it with the mean it can show compliance….

My second question is, I'm assuming that the TCLP analysis, the purpose of that analysis is to, among other things, to detect the cleaning agents that are used, is that correct? **Agency:** Yes. **Commenter:** And my last question is relates to groundwater and the public trust and the sodium standard. It looks like there is an exceedance or there has been an exceedance of the sodium standard for groundwater based on, I think it's based on the mean again, and my question is, how you are able to consider the public trust interest of the groundwater and how is it protected with the exceedance of the Groundwater Rule & Strategy? **Agency:** Yes, that is something we will address. You are correct, for Field 40A, there has been an exceedance of sodium in the downgradient monitoring wells. It exceeds an indicator parameter and the Agency has the right to require anything from no action to remedial action under the Groundwater Rules. There is also a provision in the draft indirect discharge permit for soil sampling and that ties into a comment I heard over here, and that would probably be a good site to do soil sampling because that site has been used for many years.

Agency Response:

Since these comments are similar to the commenter's written comments, please refer to the Agency's response to the written comments on page 68.

Mike Rapacz Comments:

I'm Mike Rapacz. Let me tell you a little bit about my work in the industry. Work experience. I've worked in Massachusetts for 20 years on water quality issues. I ran a a water program for the Department of Environmental Protection and I moved to Vermont … Conservation Law Foundation on water quality issues. The first question I have, and I dealt with and travelled all over the country and visited with other states And the first question I have is, why isn't a wastewater treatment plant here, why do you discharge these kind of things on the ground in the first place? That would be my question, the first question. **Agency:** Do you have other questions? **Commenter:** Yes, two other questions. **Agency:** Do you want me to answer that or do you want to continue? **Commenter:** Yes, please answer that. **Agency:** A wastewater treatment

plant was investigated extensively in the late 1980's for Cabot Creamery and it was determined that, due to the very low stream flow in the upper Winooski river valley and the amount of wastewater that would have to be treated and discharged to that stream that water quality standards would likely not be met in the stream. **Commenter:** That was 35 years ago and treatment technology has changed dramatically and I'm certain it could meet standards if the company was willing to build a treatment plant, a proper treatment plant. The second comment, in the permit, all of the numbers are based on concentrations, and I want to talk about loads. I looked at the numbers, for example, for nitrogen, when you add total kjeldahl, ammonia, nitrate-nitrogen, those numbers are high, those are high considering that we have a lake with a just have now a newly established TMDL that is severely overloaded when it comes to nitrogen and phosphorus. So, when you look at these from a concentration perspective, because a lot of water has been added to the polished permeate, it looks low. But when you add up the numbers, the gallons, the waste over the years, that's significant, and I think the Department should review it in that context, you should look the load, look at how much should be allocated to Cabot considering that the lake is in dire trouble. I think we should look at it that way. Another point is that some gentleman mentioned monitoring. I think the monitoring program needs to be beefed up considerable, both from a groundwater perspective and from a surface water perspective, and it should include biota, it should look at the animals and bugs that are in the stream. Some of these chemicals are pretty obnoxious. I don't see anywhere in the permit where you actually test for the chemicals that are applied to the land. You test for general parameters but not the constituents of the discharge that come from the hard core chemicals. I would ask that add that be added to the monitoring program, both groundwater and surface water. **Agency:** I will note that the permit requires two rounds of toxic scan analyses of the wastewater.

Agency Response:

The commenter is correct that wastewater treatment technologies have improved over the years. However, it remains very unlikely that a wastewater treatment facility could be permitted, constructed and operated in a manner that would allow a direct discharge to the Winooski River and be in compliance with Section 1-04(A) of the Vermont Water Quality Standards, even with highly treated wastewater. The Agency is unaware of any treatment technology that will reliably remove virtually 100% of the biochemical oxygen demand (BOD), total Kjeldahl nitrogen (TKN) and total phosphorus from the wastewater stream, which would be necessary given the volume of wastewater that Cabot generates, and the fact that the Town of Cabot's wastewater treatment facility used up all of the assimilative capacity of the River when that facility was permitted. For a complete discussion of the assimilative capacity of the upper Winooski River, see the Vermont Water Resources Board decision dated September 8, 2000 regarding the appeal of NPDES discharge permit #3-1440.

Besides the assimilative capacity issue, Section 1-04(A) of the Vermont Water Quality Standards also states that new discharges of wastes may be allowed only when …. "There is neither an alternative method of waste disposal, nor an alternative location for waste disposal, that would have a lesser impact on water quality including the quality of groundwater, or if there is such an alternative method or location, it would be clearly unreasonable to require its use". It is the Agency's opinion that diffuse disposal over hundreds of square miles of farmland where nutrients can be taken up by plants is a much more sound environmental practice in terms of nutrient removal than a direct discharge of wastewater with less treatment directly into the Upper Winooski River.

Because of continued public concern, Cabot is participating in a stakeholders process with other interested parties that may, among other objectives, look at modern treatment technologies. If treatment is deemed necessary to provide Cabot with more disposal alternatives, a wastewater treatment facility with land application of the treated effluent would be a much more realistic option due to the lack of available assimilative capacity in the Winooski River. Aside from the alternative method criteria of the Water Quality Standards, for Cabot Creamery to theoretically discharge some of their wastewater directly to the Winooski River would require very significant and reliable BOD, TKN and phosphorus removal at a treatment facility to meet Water Quality Standards and any Ultimate Oxygen Demand (UOD) limit established for the River, and that the Town of Cabot give up some of their assimilative capacity to the Creamery.

Measuring the discharge by load may be appropriate for a direct discharge system but for an indirect discharge system that relies on nutrient removal by plant uptake and adsorption by soils for treatment, it is not an accurate measure of performance. The monitoring requirements of the permit have been increased significantly. This includes provisions for performing biological site assessments and/or biomonitoring upon request of the Agency if water quality data suggests there is an increase in nutrients in the receiving stream due to the land application of washwater.

Shaira Kasper Comments:

I'm with the Toxic Action Center. We're a public health and environmental non-profit. We work with beekeepers across New England. We want to make people aware of Agri-Mark's practice of spraying their wastewater on Vermont's fields ….concerns of the wastewater composition. I should mention not much of the wastewater is actually whey and some figures include of these chemicals that Agri-Mark has in their wastewater are generally of concern. Nitric acid as mentioned by Jessica is used for fertilizer, to make explosives, it's used as dye in steel, it's toxic fuel. Inhaling it can cause breathing difficulties and can lead to pneumonia. Sodium hypochlorite is a bleach that is odorless.

And these are just a couple; there are a bunch more here as well. So, all the statistics are that there is a small amount of are these individuals is still cause for alarm. But, the total load of these chemicals on the land spreading of these small percentages of these toxins add up to a significant total and every year doctors are increasingly alarmed about the health impacts even on trace amounts of these toxic chemicals, particularly on our children. A lot of these chemicals have been treated so there no longer toxic but some of these treatment methods include dilution. We know that dilution is no longer a solution to pollution. And these… non-biodegradable chemicals are spread, the more you spread them, the more the risk. So, why isn't there a wastewater treatment plant? Why are they still spraying toxic chemicals on fields?

Agency Response:

See the response to Mr. Rapacz's comments above for a discussion of a wastewater treatment facility.

The Vermont Occupational Safety and Health Administration regulates exposure to toxic chemicals used in the workplace.

Jan Westervelf Comments:

I live right over here and I have been a neighbor of the Creamery for 43 years. And what I simply want to talk about is what it's like to be a neighbor. I find them to be extremely responsive ….In terms of the air pollution, they have cleaned up what used to be a rather obnoxious smell. In terms of light pollution, I had a problem with a light shining into my house. I went over and talked to the Creamery. A month later, they changed the lighting. Noise pollution. I don't know if you noticed, but there is a sign at the bottom of their driveway that says Don't Use Your Jack Brakes Unless Absolutely Necessary for Safety. We have lots of people in town that drive much more noisily than the people at the Creamery. So, my point is, it's a cruel thing to have these hearings,… I'm not a water expert, ... I also happen to be on the Human Service Board,… but the fact is you folks are doing the best you can, and I think…. and what I'm trying to say is I know the Creamery is going to respond positively to the things you ask them to do, and that's a good neighbor.

Agency Response:

No response necessary.

Pat Sagui Comments:

My name is Pat Sagui and I am the director of the Composting Association of Vermont and our interest in this permit is how it connects to a state-wide soils policy project that

we have. And it specifically asks the Agency help the lenses to review this permit, and I'll talk a little bit about that. One of the best tools we have to meet water quality is to increase the land capacity to store water. For every 1% organic matter you add to the soil, you increase the storage of one acre 15,000 - 20,000 gallons. If land application is to continue, we would like to see the permit provide some specific soil benchmarks this might also address some of the enforceability concerns that were raised earlier. Specifically, we would like to see a soils regiment, current infiltration rates, storage capacity and the biological activity that's necessary to break down the waste that's put on the land. We would also ask Cabot to work with stakeholders and soil scientists to establish a soil health standard with monitoring and testing until we know more about how the land is doing the job it's been asked to do. it does change composition of wastewater has changed and a couple of questions related to that. soil tests helps a little different than other people are talking about, whatever it is in the different parts of the wastewater stream, and is it no longer quality as a soil amendment, what does that mean for the permit? So, would Cabot be willing to work with the Agency of Ag to connect them with experts around the composting and other dairy processing wastewater and happy to help them however we can. Also designed to clean water.

Agency Response:

The permit has been revised to include soil testing of fields that have been used for land application for a number of years to determined long-term impacts to the soils.

The Agency cannot address the request that Cabot work with the Composting Association of Vermont to establish a soil health standard.

Lindsay Harris Comments:

Good evening, thank you. My name is Lindsay Harris. I'm a dairy farmer and an environmental scientist from Tunbridge. Tonight, I'm speaking on behalf of the Vermonters for a Clean Environment. First of all, thank you for the opportunity to voice our concerns about the permit renewal. Historically, using whey that's left over from the dairy processing farm fields that in turn feeds the milking herd has been successful and beneficial it has allowed the nutrients through the natural environment. And it's this tradition that seems to be the root of Cabot's wastewater spraying program. The volume of waste and content of the waste that is getting spread now has ballooned to anything but local or natural cycling of nutrients. So, the Creamery takes in millions of gallons of milk from producers from all across the northeast, from Orono, Maine to Ithaca, New York to New Haven, Connecticut, and then the resulting whey from processing all this milk from the entire northeast region is then added to the already overburdened nutrient load that . So, if issued, this permit will allow Cabot to spray over 425 million gallons, that's nearly half a billion gallons of untreated industrial wastewater and whey onto local fields over the next 5 years with almost no water quality

monitoring. So, they spray onto 538 local fields, only 3 of 538 fields get monitored for groundwater quality. There are 305 streams that are receiving potential runoff from these fields. Out of 305 streams, only two are monitored for water quality. The fields and streams that are being monitored under the permit, there always the same every year, and Cabot officials and drivers know which sites these are. The permit also doesn't require any soil testing. It doesn't require any rotation of fields, any rest for fields upon which dairy waste has continuously been sprayed since the 1980's. So, VCE has very serious concerns about the lack of soil testing. ANR issued a guidance document which serves as the scientific basis for this permit. The most recent version of this document was issued in 1990. So the science that ANR is relying on as part of this permit process is already 25 years old. And even in this 25 year old document, there is a warning that soils can become exhausted from too much spraying over time and lose their capacity at which point nutrients are more likely to run off. There is a quote in the document ANR's Guidelines for Land Application of Dairy Wastes. It says quote "excessive carbohydrates may result in a condition known as "clogging", which restricts water percolation and may result in anaerobic soil conditions, preventing infiltration of the dairy processing waste". So Cabot is required to look at the soil profile of the fields before adding them to the spraying program. But once the field is approved they are allowed to spray on it every year for decades without testing it again on the ability of the soils to continue to absorb the spray. So not only do we have concerns about the permit lacking sufficient soil and water quality monitoring, but we also feel the permit as written is unrealistic and unenforceable. For example, the permit prohibits spraying when runoff is occurring or when the water table is within 3 feet of the surface, so that makes sense. But Cabot only has the capacity to store wastewater for one day. So what if when in the middle of a tropical storm or spring snowmelt, they will be forced to violate because they have nothing else to do with their waste.

Cabot is an iconic Vermont brand and we all want them to stay and be a productive and responsible part of our community. They clearly want this too as they are a certified benefit corporation. They have voluntarily pledged to maintain the highest standards of social and environmental excellence. VCE is proposing that the permit be renewed as a provisional one-year permit, while Cabot strengthens its monitoring program and works with the local stakeholders in a collaborative process towards enacting solutions to these issues. Because as we all know, Vermont has recently entered a new era with water quality, especially in the Lake Champlain basin, so we want to work together to help Cabot do this responsibly.

Agency Response:

The permit authorizes a maximum disposal volume of 273,750,000 gallons of washwater over a 5-year permit period. Based on the actual washwater volumes generated by Cabot over the last 10 years, approximately 180,000,000 gallons would be land applied in the next 5 years at current generation rates.

As noted in the response to James Ehlers written comments, the actual number of receiving streams is approximately 75. There are also 3 fields where groundwater discharges to ponds.

The Agency agrees that soil testing is necessary. Soil testing requirements have been added to the permit to determine whether fields that have been used for many years have been overloaded by carbohydrates and salts.

The permit also has new restrictions on spraying washwater during heavy rain events and during the winter months on snow covered fields. These restrictions may force Cabot to pursue additional storage or dispose of their washwater in a different manner such as at an existing wastewater treatment plant.

James Ehlers Comments:

My name is James Ehlers. I'm the executive director of Lake Champlain International which represents some 24,000 people in and around Vermont on water quality issues. Thank you for honoring the public hearing tonight, that's most appreciated.

First, I'd like to say that my remarks are biased by the fact that the Agency of Natural Resources work to deliver drinkable, swimmable water by the EPA by July 1985. I will be providing a number of specific suggestions regarding what we consider to be a woeful compliance mechanism and I'd like to commend my colleagues Ms. Harris, Mr. Stanak, Ms. Sagui and Representative Deen; all of their comments are ones that we share but didn't think necessary to reiterate. With that said, I will repeat one thing that Ms. Harris said. 538 fields sprayed, 3 monitored. 305 potentially impacted receiving waters, 2 monitored. This is woefully deficient given the Agency of Natural Resource's responsibility to protect your interests, my interests, everyone's interests, including Cabot's in public waters. I also want also acknowledge Ms. Greenwood, I didn't realize she was still here, those were some outstanding comments. We, too, are concerned about the use of a mean; we don't understand that at all, quite frankly. The 538 fields, 80% of Vermont farms currently are not required to have nutrient management plans. We could extrapolate, I won't. I'm going to ask you to do the homework. Does that mean that 80% of these fields that are currently within this program, do we even know what the soil chemistry is receiving them? That notwithstanding, 100% of the streams monitored, all 2 of them, have shown an increase in nutrient solutions, by phosphorus or nitrites/nitrates. It's in the permit language, albeit a slight increase to the only 2 streams that are monitored. In light of the Agency Secretary request to the people of the state of Vermont that everyone be all in by reducing nutrient loads by some 30-80%, how the Secretary can go forward signing this permit as it stands today without looking for reductions is absolutely ludicrous. That said, what we're asking for right now, and if the Agency isn't willing to do it, we're willing to work with Cabot as such. What we're calling for a 2-year permit issuance out of deference to Cabot and the fact that they have been a good neighbor and we'd like them to continue to be a good neighbor to work with us

given that it doesn't appear to be in this permit as such that the Agency is concerned about 21st century solution for what is a 20th century issue. That said, we will at a minimum, be asking for 10% of the fields and streams be monitored during that 2-year period, so that we don't get 5 years down the road and find out like we have like other nutrient issues that we have this exorbitant uncontrollable monster on our hands like we do around may of Vermont's inlet waterways and the shores of Lake Champlain. Everything that winds up in the stream goes downstream. If it happens upstream, it doesn't stay upstream. We encourage you to work with us and my colleagues here tonight, with Cabot, to find something that is more sustainable for both their financial goals but most importantly, for the Agency's mission for the people of the State of Vermont.

Agency Response:

Please refer to the commenter's written comments on page 63 for the Agency's response regarding the number of land application fields and receiving streams, and a discussion of the water quality results for nutrients.

According to the UVM Extension Service, most phosphorus loss from farm fields occurs during field runoff events. Phosphorus lost in runoff is either sediment bound or dissolved in water. Since runoff from grass fields carries little sediment, phosphorus loss from vegetated farm fields occurs primarily in dissolved form. Therefore, prohibiting spraying on fields with standing water or when runoff is occurring is key in controlling phosphorus discharges to receiving streams. The permit has additional spraying restrictions for these situations. Soil testing will also reveal whether the soil is becoming saturated with phosphorus to the point in which it becomes mobile.

Charlotte Dennett Comments:

My name is Charlotte Dennett. I'm an attorney and an investigative journalist from Cambridge, Vermont. Over the past 5 years, I've represented two residents of Cabot in both Act 250 and ANR hearings, as well as attended many meetings with a group called Whey to Go in an effort to curtail or stop the pollution of Cabot Creamery, Agri-mark. To say this has been an exercise in futility has an understatement. Cabot Creamery, due to its iconic image as Vermont's premier cheese maker and ostensibly owned by family farms and cooperatives has become Vermont's sacred cow. It's untouchable, unaccountable, and parts of this permit are unenforceable. This has got to end. I'm heartened by the testimony tonight. Maybe it will. Maybe there will be changes that residents, for years, have been asking for and been very frustrating. They know that Cabot is a major polluter. They know it with their own eyes, they know it in their own bodies. Some are too sick to be here today. Jill Alexander, who is one of my clients and one of the most vocal critic, finally had to move away. I ended up writing a 28-page report out of sheer frustration to try to get the word out about what's happening here. I will refer to parts of it. What I want to draw your attention, especially the 1990

guidelines, the land application, I'm sorry, the 1990 guidelines for applying waste, and I'm going to quote. This was written by the head of the environmental conservation person, the Secretary of the Agency of Natural Resources, Tim Burke. In 1990 they knew dangers back then. I'll quote, "improper disposal can also lead to pollution of groundwater and drinking water. Overloading of the soil can exceed the soils renovative capability, increasing the potential for the waste constituents to migrate to the groundwater. Overloading of fields can result in runoff to surface water which can lead to oxygen deletion and fish kills. Furthermore, the nutrient content of dairy processing wastes can accelerate eutrophication in many surface waters". Eutrophication produces blue-green algae, and blue-green algae has been linked to nerve damage in humans, including the terrible degenerative disease called ALS or Lou Gehrig's disease, which has been researched by Dr. Elijah Stommel at Dartmouth and recent documented in a Vermont Public Radio report. There have been instances of ALS in Plainfield that he wrote about although it was an unpublished report. Anyway, going back to the 1990 document, the authors of that document though that land application would be temporary because there was going to be a wastewater treatment plant, but then that never happened, was never built. So, I'm going to point out some of the dangers that have happened since then. The overloading of the soil, as said previously there is no testing of the soil in the permit and so there is no evidence that the soils are overburdened, even though there has been testimony at previous hearings such as Karen Shaw, a local farmer who talks about a UVM researcher came through and found that the soil in her area was terribly compacted. And when the UVM researcher was queried later on by ANR, he suggested it would be a good thing to do to have in depth soil testing. That has never been done, why not?

Agri-Mark self-monitors its waste. When the Secretary of ANR, Deb Markowitz, although she has the right to sample the waste; she's been unresponsive to unannounced testing. called me a year ago, in August 2014 and he suggested that DEC that another unannounced visit should happen, which would establish a record of current performance before the next permit review. It never happened, far as I know. Two months ago, can you do unannounced testing, I asked, can you do the testing? I haven't heard back. Testing is crucial, it should go into the permit, it cannot be self-monitored. The reason why that's important because, in January 2012, when finally unannounced testing was done by the Department, a 7-page analysis was produced, documenting 224 separate chemicals were over twice the amount as claimed by Agri-Mark. Dr. Bernard Greenburg, a physical chemist, looked over the report and stated that the dissolved phosphorus, total phosphorus, total solids, suspended solids, ammonia and nitrogen were scandalously high. Also turning up were carcinogens toluene, benzene and barium with the highest haxavalent chromium, which caused multiple forms of cancer in the citizens of Hinkley, California made famous by Erin Brockovich. Interestingly, in the Vermont report, there was no data for hexavalent chromium quote "significant matrix interference in the report piping, but it's still unclear what this anomaly is all about. The hexavalent chromium is a toxic, all the more reason to have independent testing on the chemicals in the waste stream.

The new permit, sorry, with regard to truck drivers, they go out and spread the waste required to keep daily logs of when, where and how much. I asked for their reports and they weren't made available, weren't available at ANR, perhaps you can ask to have them turned over. They are also supposed to check the monitoring wells to confirm the 3 foot buffer zone from the groundwater to land surface, in other words, if there is water in the field they are not supposed to spray. In times of torrential rainfall of 2013 was the 5th highest rainfall in recorded history in Vermont. We all know this year's rainfall, in June and July they are spraying on wet fields, and it's been documented as said in hearings before. Even Bruce Banister who used to run the land application program actually complained about spraying on wet land. We don't know how often it happens, the person in charge of monitoring field spraying is Agri-Mark's lead, his name is Rejoin Pion and he also owns some of the fields and he's an assistant vehicle driver. So what happens I just wonder about the reliability of the reports. To me, it feels like the fox is guarding the henhouse. To this day, no alternative method of disposal has been found and this permit, the required efforts to find alternative methods has been dropped. Why is that? To this day, Cabot's own consultant renovating the three storage lagoons for the most toxic waste to store during the winter, so the lagoons should be polyethylene lined. That was a recommendation that was never followed and in other states that would be unthinkable that toxic waste be stored in a clay lined lagoon. So, I think the permit has to make that adjustment and that the lagoons should have the proper lining.

Agency Response:

Overloading of Fields: The Agency agrees that overloading fields can have a detrimental effect on groundwater, surface water and aquatic biota. That is why this permit, like previous permits, has numerous conditions including daily and annual land application limits. The permit now contains soil sampling requirements for the purpose of determining the long-term impact of land application of washwater on fields.

Unannounced Sampling: The Agency did not conduct another round of unannounced sampling as requested by the commenter due to budgetary concerns. However, the Agency has notified Cabot that unannounced sampling may take place and the cost associated with the sampling will be billed to Cabot as authorized by the Vermont Legislature.

The unannounced sampling that was done by the Agency in December 2012 and again in February 2012 may have tested for the presence of 224 contaminants, but that does not mean that Cabot uses 224 chemicals. The washwater was tested for hexavalent chromium and the result that was able to be obtained from the second sampling event indicated that it was not present above detection limits. Benzene was not detected in either sampling event.

Truck Log Books: The Agency has the authority to request copies of the log books and to review them in person during a site inspection. However, we will do this as part of our compliance review, not because a third party asks for them.

Heavy Rainfall: The Agency acknowledges that land application should not be occurring during heavy rain events or any other times that the likelihood of runoff is high. To address this, the permit has been revised to specifically prohibit land application during heavy rainfall events, when runoff is occurring or will occur due to spraying, and when the fields have standing water on them.

Lining of Lagoons: The lagoons do not contain toxic waste. Clay has an extremely low permeability and is a suitable lining material for the storage of polished permeate. There is no evidence that the lagoons are leaking.

Jerry Colby Comments:

Hi, I just have a few comments to make. The fact of the matter is, you know, the Lamoille River goes right through the whole county and I know in some of these documents that there was some concern that there was some spraying, quite a lot of spraying in Wolcott and I also understand that this is also affecting Morristown. It's on the list of document of towns that are affected. I'm vice chair of the Lamoille County democratic committee and I have to tell you that I'm here partly to gather this information including from Charlotte, Jim and others here and to take back to the county committee to discussion. I will also be meeting with the speaker of the House on this question. I didn't even think I'd be meeting with the speaker on this until tonight. So, I just want to bring you up to date that people are watching. They expect the Agency to do its job, they expect the Department to do its job, and we are all conscious of the fact that jobs, we're all conscious of tax revenues and we are all conscious of the reputation that Cabot has here and throughout the United States. I would like Agri-Mark to protect that reputation and I would like, of course, the Agency to fulfill its responsibilities to protect the people of Vermont.

Agency Response:

No response necessary.

Richard Hourihan Comments:

Hi, my name is Richard Hourihan. I'm a farmer. A lot of things that have been said tonight; oh, first of all, I have to say that Jill Alexander did not have to leave. She sold out to Cabot Creamery for big bucks and left town in the middle of the night. Oh, thanks for making her a lot of money. I plant one of the Creamery fields; well I plant two of them. I do soil samples every year. And every year I have to add phosphorus, nitrogen and potash to it. It's not the worse deal; I mean I'm still putting triple 20 on some others… Of, by the way, I'm practicing good agricultural practices. And their bleach you mention is edible. It's the only thing that they use that I know that I can wash my vegetables with. You can't use Clorox. So, this stuff I get from Cabot Creamery I can

wash my squash with and still I monitor what I have to put down in the spring, so yes, I monitor the soil and they go through USDA up in Berlin which looked at it and she says many times on the slopes, so I'm governed by the USDA. So, a lot of the stuff I've heard tonight, you don't know what you're talking about because you have no idea what the soil samples are. If the soil samples were as high as you think they are, shit, I'd be saving five grand a year on fertilizer. But that's what it's costing me. So before you put the horse in front of the cart, make sure it's got four shoes on. Thank you.

Oh, can I say one more thing. This gets me. We have a place up here where his manure was running straight down in the stream behind his field. We had a whole manure pit blow out down by the pond and down into the lake. You go down Route 2 and you see more manure that's this thick and the blow it right beside the river. So why does it have to be that Cabot Creamery is putting out the nitrogen and phosphorus when you drive down Route 2 and see all the cow manure spread along the river. It's not just them. If this is the case, then they should monitor all the cow farms to see how much manure they put on the fields, when they do it. **Facilitator:** I think… **Commenter:** Oh, no she was up here for 15 minutes. **Facilitator:** I think you're getting away from the main purpose **Commenter:** Oh, nutrients in the stream. But it's not just them. **Facilitator:** Well, somebody else's manure is a little far from our discussions here, to get input on the permit. **Commenter:** But they're using to monitor the stream, right? **Facilitator:** If you're talking about the whey and how much **Commenter:** No, about how much phosphorus, nitrogen and potash is in the brook. **Charlotte Dennett:** They're not even monitoring the stream which is something I was going to bring up; they're not even monitoring the stream.

Agency Response:

No response necessary.

Ellen Blachly Comments:

I live at the other end of the street, very much in the village. I would like to bring up a different aspect of this whey which has to do with the impact on town people who live right on the road when the red trucks are going by in groups of three. And they go, I don't know, I think they start about, I'm not sure, around four in the morning. A lot of times they are overweight trucks and they are very loud. Cabot does have one truck that I know of that goes out the other end that is quieter and I'd like to suggest that there is a such a thing as a red wastewater truck that is not so loud and that they should all be quiet like that because they are very loud and it's right on the road and some people say "it's stupid to live there" but villages, we need to reclaim villages and make them livable again, and the traffic is unregulated as far as I can tell. I know that the Selectboard signs a lot of overweight frost permits. I've been told that they do not ever not sign permits.

I noticed a couple of years ago the number of silos, the big silos, went from 5 to 9, and it seems to me you can't have, I may be stupid, but it seems to me if you can't go from 5 to 9 you and not have a heck of a lot more wastewater. Correct me if I'm being stupid, but I wonder is that totally unregulated, are they allowed to increase the amount of quantities infinite item because there are consequences for increasing the volume and more and more stuff that has gotten to be rid of. So, what I'd like to say is, by allowing them to turn to getting rid of things by truck you have simply shifted the impact, from what I'm hearing, from the water to the people living along the route who are exposed to an enormous amount of very noisy traffic. They not always respecting the speed limit; I know it's very difficult to say anything in this town that sounds like you don't approve of Cabot Creamery because a lot of us feel like that is not a good neighbor. I have been told by the community relations manager at Cabot that I should jot down any time I see a truck speeding past my house. Well, I took him seriously. Except the trucks are dark red and the numbers are black so I practically have to have binoculars to see what the number is. I took tract of it, and I called him up and he gave me a complete brushoff. What I'd like to know, when you came up with this scheme of trucking away all of this waste, did you consider the impact on the people who live along the route? Was that considered, and if it wasn't, why not? The environment is not just water. I'm not saying water isn't important, it is important, but this environment is not just water; it's also people who live on these routes. Have these factors been considered? So, that's my main point, is that the shifting of the impact. So, also I would say what's the point in testing; it's going to be sprayed anyways because there is no plan B. I didn't even realize, I've learned a lot tonight, I didn't realize that you looked into a wastewater plant and you canned it. And why are they allowed to put up four more silos? Thank you.

Agency Response:

The Agency acknowledges that truck traffic has a detrimental impact on neighborhood residents and the environment. However, the Indirect Discharge Program does not regulate truck traffic. Truck traffic is an Act 250 criterion.

Testing is required to demonstrate that Cabot is meeting applicable groundwater and water quality standards, not to mention the conditions of the indirect discharge permit.

The Agency cannot answer the question about the installation of four more silos as it does not pertain to the indirect discharge permit.

Annegret Pollard Comments:

I think they are a very exclusive group. I'm Annegret Pollard and I live in Walden. That's not even a town; it's a state of mind. And I think that other people that I know of in the villages around Walden and up to Craftsbury area, a lot of people have no clue about what is going on with the Creamery, what is going on with the trucks spraying summer, fall, winter and spring. The trucks are bigger now so they have more to drop

when they do that. I want to talk about how dangerous this is. I know a lot about this now having lived here a few years, but how dangerous this stuff is that they are spraying without any body having any accounting to do and how villagers do not know, but it is none of these things. On my road, Noyestar Road, we have two farmers left, one on the northeast end, the other on the south end, and in between that three organic growers. Oh, I should say four because I'm one too. And these people, two of them are not even on the spray list. All they have to do is call Cabot because they need some more water in their manure pits so they get it and it goes out. I have a neighbor with a very, very good organic operation, had their house sprayed when the wind blows, their cars damaged, and their pond is poisoned and they don't know what to do. So, I think some of these people should get help from the Creamery with testing waters upon, soils tests because that would be a very good thing to do so someone else may want to pay for it. So, I have very great concerns about my neighbors who are hit by this spraying, and I will mention one fantastic way of doing it. They tucked the truck under their porch so you really couldn't see it and the greenery covered up most of it and there are these enormous stream going out of the machine until this machine was empty but you know, packing under a porch is kind of cute and I think it's serious and awful and you need more information so people do better with their gardening and their production of crops and no body get sick.

Agency Response:

Cabot is not allowed to discharge washwater to a manure pit without prior authorization from the Agency.

Anyone who feels that they have been impacted by the spraying of washwater from Cabot should file a complaint with the Agency's Compliance and Enforcement Division at http://www.anr.state.vt.us/dec/co/enf/cfm/enf-sendviolationcomplaint.cfm so that it can be investigated.

Jack Daniels Comments:

I would just say my name is Jack Daniels. I'm chair of the Cabot Selectboard. I would just say from the perspective of the Selectboard, Cabot Creamery has been a very good citizen, and I think from time to time people complain about traffic, about noise, or whatever. We've put just across the road, speeding signs. It has been my experience that Cabot Creamery trucks have not been an issue in this town. When we've had matters to discuss with Cabot, or they've had questions on zoning, permitting or whatever, they are very conscientious about following the rules, the regulations. We don't have issues with them. We can go to them. From my perspective, and I've been chair for three years now, and I couldn't ask for a better company to work with. I just needed to say that. Thank you.

Agency Response:

No response necessary.

Michael Colby Comments:

My name is Michael Colby. I'm the executive director of Food and Water, a national non-profit that operates out of Walden. I want to address the good neighborhood issue, the stories that have proved that they really aren't good neighbors. Way back you may remember bovine growth hormones. My organization was involved with educating people about the dangers of that. Cabot told us, oh, we're not using it, we not using it, trust us, we're not using it. We're Cabot. Then one day I got this phone call from someone saying I think I have a document you'd like to see. I work at Cabot. I can't give you my name but I'd like you to see it. I said fine, you can drop it off in a mailbox. We had an old schoolhouse up in Walden. It was an inside memo from Cabot executives talking about how much they're using growth hormones and how long they could get away with it. Well, we took it to them. We had a campaign against Cabot to get them to stop using bovine hormones. They tried to put us out of business. They tried getting our funders to stop funding us. We were neighbors. For years we tried to get them to stop using growth hormones. Years. Decades. They finally stopped. You know who asked them? Walmart. When Walmart asked them to stop using bovine growth hormones, Cabot said ok. After decades, 12-13 years of your neighbors asking you to stop using it; that's not a good neighbor Cabot Creamery.

I disagree with my fellow environmentalists in this room who are saying give them a year conditional permit, a two-year conditional permit. Time's up Cabot. If we're going to give them any time, let's give them the time to do what they should be doing, and your agency should be enforcing them to do, which is to build a wastewater treatment plant, period. We know what these chemicals are doing; we know what industrial agriculture is doing, extracting our recourse, making money and shipping that money out to Massachusetts and leaving us with the garbage, with the junk, with the villages that are dying, the farms that are dying, with the animals that are abused. Time's up Cabot. If you want more time, build a wastewater plant or leave. Thank you.

Agency Response:

As part of a stakeholders process, Cabot will be looking at an alternatives analysis, which may include the viability of a treatment plant. Given that it is highly unlikely that disposal could occur directly into the Winooski River due to the likelihood that Water Quality Standards would not be met and the fact that the assimilative capacity of the River has already been taken by the Cabot municipal treatment facility, disposal would still likely occur on farm fields. It is important to note that contaminant removal at a typical wastewater treatment plant occurs when contaminants adhere to organic

particles of sewage, which is then precipitated out, removing metals and organic compounds. If a treatment facility was constructed, it would likely not include sewage.

Jessica Miller Comments:

I'd like to go to page 6, excuse me, page 15, no excuse me, page 6 of the new permit. At the bottom, it says "the permittee has indicated that the list of chemicals in the March 2011 Fact Sheet is up to date and accurate, and represents all the chemicals used at the facility". OK, you see that, it's the fact sheet? **Agency:** Are you reading the original fact sheet or the revised fact sheet? **Commenter:** The permit renewal fact sheet. **Agency:** What's the date on that? **Commenter:** June 2015. **Agency:** That particular paragraph has been revised. That section got moved to a different location. **Commenter:** Anyways, I think it says the same thing. **Agency:** The revised one is on the website now, so please check that out. **Commenter:** OK, so what they refer to is the fact sheet 2011. That actually lists a total of 65 chemicals, that's in 2011. There was that analysis done by Endyne that says 2012 they listed over 200 chemicals. That's a year after this so-called sheet that they're referring to, a total list of chemicals. Now, I have a letter response from Ed Pcolar about TCLP. By the way, I've always understood that TCLP, Toxicity Characteristic Leaching Procedure to be performed on soil, not water, and through the entire permit you talk about testing water using TCLP method. That's ridiculous, it's tested on soil. And that is a bad thing. And it says here, this is from Ed Pcolar, "however, acknowledging the gap between the Vermont groundwater enforcement standards and the much higher TCLP criteria, Cabot has used the raw data from the analytical tests to determine the presence of chemicals at concentrations much lower than the TCLP limits. Based on our evaluation of this full list analysis, over 200 separate chemicals, from volatiles, semi-volatiles and herbicides, no compounds were detected at concentrations exceeding drinking water standards. So, they're admitting it's over 200 chemicals, they're saying there's only 65 in the present permit. There's so many problems with this whole chemistry a lot which I understand and a lot which I don't. I don't think a lot of people understand that stainless steel equipment is used throughout the plant, the tanks, the pipes, because the stainless steel creates an oxide film on the surface. The oxide film is removed by some of the chemicals, the harsh chemicals that they use, and when that happens, they have to reactive they call it, that film with nitric acid, phosphoric acid and water. And every time a batch of milk is put through the system, every time a batch is put through, they have to clean it up. Those chemicals are in there all day long, going in there.

And another concern of mine is, in light of all the chemicals going on, the factory explosions in China. For 26 years I have been requesting from the ANR and from Agri-Mark, a list of their chemicals. I've never gotten it. We don't know how many they get a year, we don't know how much they store there, and the other frightening element is that when you go to the Fire Department, which is right across the street from the plant, they do not have a list of all the chemicals and they say it's not necessary. And the new

fuel oil they have, they replaced the fuel oil with compressed natural gas which is highly volatile. This is right in the center of town. To me, this is creepy, and something's got to be done. We've got to find out how much they have, the Fire Department has to know, and why on the trucks, these disposal trucks, and I wish they'd stop saying whey. There is no whey in this wastewater. There is no whey in the wastewater. It is chemicals and washwater. That's it. I wish they would even have, on freight trains, you've got numbers for the chemicals, you've got numbers on top of the trains to tell you want's in there, so in an accident, emergency response knows what to do. These trucks don't have numbers on them. Why, because they don't want to admit it's just chemicals and water, and various chemicals that range from mildly toxic to carcinogenic.

Agency Response:

Chemical Analysis: The 2012 surprise sampling results list over 200 contaminants that were tested for, but that does not mean that Cabot uses over 200 chemicals. With regard to the TCLP analysis, water samples can be used instead of a TCLP extract if the waste contains less than 0.5% filterable solids. See Section 7-208(a) of the Vermont Hazardous Waste Management Regulations. Cabot has indicated that the washwater samples themselves were analyzed for toxicity.

Chemical List: The August 2015 Fact Sheet contained a list of chemicals that Cabot uses for cleaning and sanitizing. A few changes have since been made to that list. On October 6, 2015, Cabot submitted a Summary of Cleaning SOPs and an updated chemical list. This document is attached to this Response Summary. The Indirect Discharge Program does not regulate the storage or transportation of chemicals and compressed natural gas.

Mike Rapacz Comments:

I have a comment and a question. I understand there is limited storage for wastewater at the Cabot facility. And I wonder, since the ground freezes sometime in October and remains frozen until April, where does all that water go during that time period. And then post-April, when the water table is naturally high without having artificial additives, I'm sure, in many, many cases, that there's not three feet of separation between the water table and the land surface. And how is that gauged? Do people look at that every time before they apply to a field? I'm guessing they don't, and I'm guessing the permit requirements are frequently ignored. I think they have to be because there doesn't seem to be anywhere else to put it. So, I wish you would explore that issue a little bit.

Agency Response:

The indirect discharge permit allows Cabot to spray year-round on particular fields that meet certain siting criteria. For land application conducted from November 16th to May

31st, the slopes must be less than 5%, the soils cannot consist of clay material, and the fields must be at least 100 feet from any surface water. The permit prohibits the disposal of waste on any field where seasonal runoff is occurring or will occur due to spraying, such as on frozen ground without adequate snow cover (in Vermont, the ground does not freeze in October and remain frozen until April as the commenter stated). In addition, the maximum application rate is 0.13 inches per day, or 3,530 gallons/day/acre, during the fall, winter and spring months.

When a field is first investigated for inclusion in the land application program, soil borings are required to determine the depth to the seasonal high groundwater table. Fields that don't exhibit any redox features in the upper three feet of the soil profile are not required to have groundwater levels measured when spraying occurs. Fields that have redox features within the upper three feet are required to have monitoring wells installed and the depth to groundwater measured prior to spraying to determine whether the three foot separation is met. These fields are denoted as well-verified fields.

Charlotte Dennett Comments:

Yeah, I'd like to respond to that. They spread all year-round. Well, first of all, with regard to the three feet of separation, the truckers are required to go to certain fields to monitor, to look at the depths of the water. And they are supposed to report that there's always three feet. That's the answer, there's no monitoring. It's all self-monitoring. As I said earlier, even the former head of the land distribution, the land application program, was very concerned that there should be independent monitoring. You cannot rely on the truck drivers to go every day to check the wells, it doesn't happen, as first-hand testimony. I just have to say a couple other things. Regarding Jill Alexander; Jill Alexander's farm is terribly polluted, both her parents died. It's hard to link the deaths, it's hard to link any deaths in this area, but when I first met Jill Alexander, it was a campaign event; she was up there challenging Governor Shumlin, why aren't you doing anything about what's happening in Cabot? I went up to her afterwards, she broke out in tears. She said, one parent was dying, the other was sick. She was telling me about the sicknesses in the region. And one day, she and I drove down through the center of Cabot and I asked her and another person who's too sick to be here, and tell me where the cancers are. And they said "that house, that house, this house, that house". And I ask you, all of you who are residents of Cabot, ask your neighbors if they have cancer. I know instances where cancer is in the same family, from an uncle, to fathers, husbands, and they're afraid to speak out. Part of it is because Cabot's such a good neighbor. Cabot provides money, it provides jobs, they don't want to challenge Cabot. And I've actually been told not to mention names because they are afraid of offending Cabot. So that's a good neighbor. I'll give you an example. Jill Alexander's field, her parent's field, which was subsequently bought up by Cabot has the worse violations of water quality and it's consistent, it's every year, and it says "Field 40A has excessive nitrates, and excessive phosphorus and it exceeds preventative action limits". And

normally if it exceeds preventative action limits, then there is supposed to be some remedial action taken, but apparently in this case it isn't. Maybe because it's Cabot that now owns the fields. But the other thing I found really interesting is when you ask about the receiving stream and whether its tested, here is their response, and this is in the June 2015 fact sheet, no receiving stream, and this is page 9, "no receiving stream monitoring was required in the permit as the receiving stream is the Winooski River and no effects on the water quality of the River due to land application on Field 40A, that's the Alexander field, were expected based on the size of the receiving stream relative to the volume of dairy processing wastewater applied annually. So, what they're saying is, on one hand, it's saying the field has more problems, and on the other hand, they're not going to monitor the Winooski River because there's no impact from Field 40A. Could you explain that? Anyways, that would be one question, and why the receiving stream is not being monitored at all, particularly because they feed into the Lake Champlain watershed. In this rainy time in which I'm beginning to say summer is becoming the rainy season in Vermont, otherwise runoff is a serious concern here.

Agency Response:

Groundwater Level Measurements: Cabot does report depths to groundwater in their monthly disposal reports for fields that are designated as well-verified fields. The Agency expects groundwater to be measured at well-verified fields every day that disposal takes place as is required, and acknowledges that this is one area of the compliance program that needs to be beefed up.

Sicknesses: Numerous toxic scan results over the years have shown that the washwater is not a hazardous waste. In fact, nearly all of the metals, volatile organic compounds, semi-volatile organic compounds, pesticides and herbicides tested for were non-detect.

Attached to this Response Summary is a November 13, 2015 letter from the Vermont Department of Health that indicates that there are not elevated levels of cancer or ALS in Washington, Caledonia, Orleans or Lamoille Counties.

Monitoring of Winooski River: See the response to the commenter's written comments on page 52.

Richard Hourihan Comments:

Yeah, that's the Alexander field. And may I live as long as Jill's mother. She died at 87. And both their parents worked for Cabot Creamery. **Charlotte Dennett:** That's right. **Commenter:** And her mother died at 87, they said they had to throw her out. And I can give you a soil sample and went up to the government, they have those. And it is not impacted with super amounts of nitrates, super amounts of phosphorus, I don't know where you're getting your figures but I have those. **Charlotte Dennett:** What soils are

you talking about? **Commenter:** The ones from the Alexander field. **Charlotte Dennett:** The Alexander field? **Commenter:** That's the one you mentioned. **Charlotte Dennett:** OK, that's the one where we have soil testing? **Commenter:** Yes. **Charlotte Dennett:** I'd like to see those. **Agency:** If I could respond to that, I have the results right here. **Commenter:** You ended up with them? **Agency:** Well, we have all the results on file. I have a summary in the fact sheet here. For Field 40A, the nitrite/nitrate combined the mean value was 2.74 mg/l in the downgradient monitoring wells in the land application area. The enforcement standard is 10 mg/l, the preventative action limit is 5, so the mean value is about half of the preventative action limit for that field**. Charlotte Dennett:** Look that may be for the most recent, by the way, I noticed you said the mean value and that is really a good point. You should be looking into this mean value business because I can remember seeing in previous reports where consistently Field 40A exceeded the limits, but oh, the rest of the field it's not quite so bad, so overall, we don't have a problem. But, I've got it here. Since 2009, nitrites above their respective primary GWES on her field, 40A. Total dissolved solids were above secondary preventative action limit in 2011, same thing. Field 40A, monitoring well 402 quote "continued to show the effect of the land application of dairy processing water". Wastewater had significantly higher concentrations of chlorides and dissolved solids. Wells 402 and 403, that's on Field 40A, also showed a significant increase in nitrite concentrations.

Agency Response:

The Groundwater Protection Rule & Strategy enforcement standard for nitrite/nitrate is 10 mg/L. No lab result from the downgradient monitoring wells of Field 40A exceeded this standard, including the 2015 results. Concentrations in monitoring well MW-403 have steadily increased in the last 6 years up to the enforcement standard. Exceedances of the enforcement standard occurred downgradient of the polished permeate sprayfield in 2010 and 2011 at one monitoring well location, but concentrations steadily decreased from 2010 to 2014 to about half of the preventative action limit of 5 mg/L before increasing in 2015.

Total dissolved solids (TDS) exceeded its preventative action limit of 250 mg/L downgradient of Field 40A on one occasion in 2014 and once in 2015. The enforcement standard was not exceeded on either occasion. Downgradient of the sprayfield, TDS concentrations exceeded the preventative action limit on a number of occasions and the enforcement standard once. Based on the polished permeate lab results, the exceedances of the preventative action limit downgradient of the sprayfield are not attributed to the spraying of polished permeate. Land application on Field 40A upgradient of the sprayfield is likely the cause of the elevated levels of TDS. Field 40A has been removed for the list of authorized fields for land application.

James Ehlers Comments:

James Ehlers, Lake Champlain International. I just want to know if the permit does indicate that dairy processing wastewater uses the soil benefits practical for the purpose to improve performance of the fields due to its high nitrogen, phosphorus and organic content that's on page 2. That said, again, if we're not going to look into reduction of nutrients by this IDP and the farm community can further pass on nutrient reduction from their other sources, particularly in light of the fact that this spreading occurs 150,000 gallons per day average year-round, which there's no ability for the soil, to the best of my knowledge to take up the nutrients. So, again, I would point out the Agency's responsibility to protect the public interest, public waters and monitor the surface water and not excuse it in a permit as Mrs. Dennett correctly noted, based on assumptions when we know already that the Lake Champlain basin is impaired by phosphorus and likely nitrogen but nobody's taken a look at nitrogen data. Thank you.

Agency Response:

The permit authorizes up to 150,000 gallons per day to be land applied. As documented in the August 2015 Fact Sheet, the actual amount land applied over the last 5 years has been approximately 100,000 gallons per day.

The Agency is not aware of any evidence that indicates that the soils of the fields that receive washwater do not have the ability to retain nutrients for plant uptake. Soil testing requirements have been added to the permit. The results of these tests will indicate whether the soils are depleted and unable to take up nutrients as the commenter is implying.

Kim Greenwood Comments:

Can I ask a follow-up question? I'm Kim Greenwood of Vermont Natural Resources Council. This raises a question in my mind about whether the allocations and the discharges in the permit were allocated in the Lake Champlain TMDL and how they were allocated. **Agency:** No, they were not.

Agency Response:

The proposed TMDL only applies to point and non-point discharges regulated by NPDES permits. Indirect discharge permits are not NPDES permits, therefore indirect discharge permittees are not subject to load allocations.

Mike Rapacz Comments:

I would caution people about trying to compare nitrogen numbers, total nitrogen number of 10 mg/l which is the drinking water MCL, comparing that to the concentration in surface water bodies. Surface water bodies are significantly more sensitive, so using that 10 figure is not really accurate. Just pointing that out.

Agency Response:

The Water Quality Standard for nitrate is 5.0 mg/L for Class B waters.

Jessica Miller Comments:

With much of their cheese making being done in Middlebury, and possibly some cheddar being made in Cabot, I don't know that but I think so, I would like to know exactly what is being made here. And it states here, that they've increased their trucks to 5,000 gallons of capacity, that's 6 trucks, 5,000 gallons capacity. They're not making as much cheese anymore, but what is causing this increase in waste? What is causing the need for more storage? What is causing the need for more town water? OK, one of my conclusions, not just a cranky hair-brain thing, is that they are trucking in waste from other plants, I've asked this question many times, from their other plants. Why, because those other plants have waste treatment facilities. But those facilities have pollutant and volume constraints, and when they get too polluted or too much, where are they going to send it? They're going to send it to the toilet in Vermont. So, I would like to know, they say no but really nothing else explains the volume that's occurring here, if they're making some dips, some yogurt, some sour cream, and maybe one type of cheddar. What is causing this huge increase of waste?

Agency Response:

Cabot has indicated to the Agency that they manufacture cheese 7 days a week. They also make cottage cheese, dip, sour cream and yogurt less frequently.

The volume of washwater generated in the last 10 years has not increased. It has remained at approximately 100,000 gallons per day over that span. The annual totals were documented in the March 2011 and August 2015 Fact Sheets. Cabot has indicated in writing that they do not transport waste from other facilities to Cabot for disposal.

The Agency cannot speak about the volume of town water used by Cabot.

Richard Hourihan Comments:

Fields in the wintertime do not freeze. They're insulated with snow. If a field froze, that means the septic system also would be frozen and we'd be all out of luck. You shake your head no, but go out to a field in the winter. Also, probably most start to freeze in November or December; they don't start in October. But go out to the fields. I do, and I start plowing in April. But a lot of the fields in March, February and January and go through four feet of snow and sink a shovel. Fields do not freeze in the winter normally. They do not freeze three, four, five feet.

Agency Response:

No response necessary.

Jessica Miller Comments:

I have one other comment if that's OK. I requested an actual list of, a disposal rate list from you and I got it. And there's two things on here. One, is that there are fields listed on here that didn't receive any waste this time of the year from a farmer who hasn't been in the program for 15 years. And I know from the permit that you're supposed to file a removal amendment each time a farmer is removed and I think that's rarely done. I've never even seen one of those, but in 2008, one of Agri-Mark's lawyers, John Ponsetto, after my request sent me a list of the fields that were removed, ok, and along with the reasons why they were removed. And one of the reasons, the one from the farmer was, "fertilizer is of no valve and leaches nitrogen" which means its leaching nitrogen to the surface, which sort of defeats the whole purpose. **Agency:** I will address the first part of your comment. As part of the application for renewal, I did ask Cabot for an updated list of all of the fields and they provided a list of the changes that needed to be made including name changes, so that's reflected in the attachments A-1 and A-2. **Commenter:** So, why is he on there now? That farmer hasn't received waste for 15 years. **Agency:** I'm not sure which farm you're referring to. **Commenter:** So, why is it still on the approved list? **Agency:** Which farm are you referring to? **Commenter:** 1, Bothfeld Farm. **Agency:** Field 1? **Commenter**: Yes.

Agency Response:

The Bothfeld fields were last used for disposal in July 2009. In a submittal dated April 28, 2015, Cabot provided a list of the changes in the fields in the land application program. The Cabot submittal did not indicate that the Bothfeld fields were removed from the program.

COMMENTS RECEIVED AFTER PUBLIC HEARING

David Deen Comments:

Following are the comments of the Connecticut River Watershed Council on permit 9-0043.

CRWC feels we need to put our comments into context relative to the Connecticut River. The River is the largest source of fresh water entering Long Island Sound (LIS). LIS is impaired for nitrogen and although Vermont is not a party to the EPA approved TMDL for LIS, the TMDL does have an impact in Vermont. EPA has required nitrogen reduction plans as part of all NPDES permits that renew in the CT River watershed, anticipating EPA requirements to reduce N discharge to the CT River. N is part of the waste that is permitted to be land spread and could be adding N to our river and LIS.

With that as background, CRWC is concerned at the sheer volume of the wastes permitted for land application under the terms of this draft permit. The concentration levels of N within the polished permeate is low but the permit allows for large amounts of the waste to be land applied. A small percentage of a large volume still represents a significant amount of N being land applied. Consequently, the wastewater needs to be applied in the most environmentally responsible manner possible.

The draft permit does not require testing at the edge of field for runoff. The permit does not require testing of the surface waters. The permit does not require testing of the ground water effects of the N that is land applied. In fact, the permit as written does not require a sampling plan of the applicant to determine the impacts on the surface and ground water let alone implementation of such a plan. All of these usual steps one sees in most permits controlling waste are only activated at the request of the Secretary of ANR if the Secretary feels it is necessary at some future date, not as a condition of operating right now.

CRWC feels the permit should require the applicant to develop a sampling plan for all surface waters potentially affected by the land application and implement it as a condition of the permit. The results of the sampling should be reported on a yearly basis not at the end of the permit in 2020 as it is now written.

Lastly, the draft permit requires a certified operator to supervise all aspects of the land application activities. CRWC feels the permit should go one-step further to protect the tributaries to our River. Under the newly passed VT Clean Water Act, custom

applicators of manure and other agricultural land applications must be trained and certified to prevent them from misapplying nutrients too close to the waters of Vermont or at inappropriate times. Again because of the huge amount of permeate and whey that will be land applied; the drivers of the vehicles and operators of the field spray system should receive the same training and be certified. This training is a preventative step to insure no N is released to the waters of Vermont.

Thank you for holding the public meeting in Cabot and for the chance to comment on this draft permit. Appropriate conditions in the permit will mean a great deal to health of the Connecticut River and Long Island Sound.

Agency Response:

Monitoring Requirements: The comments relating to the lack of surface water monitoring pertain to Part I of the indirect discharge permit which is associated with the operation of the polished permeate sprayfield. The permit does contain groundwater monitoring requirements, as did all previous permits, for the purpose of determining impacts to groundwater quality from the operation of the sprayfield and the land application of washwater on Field 40A located upgradient of the sprayfield. The Winooski River was not included in the sampling program because it was assumed that Water Quality Standards in effect at the time would be met in the river due to 1) uptake of nutrients by vegetation in the sprayfield and the land application of washwater on Field 40A, 2) the dilution provide by mixing polished permeate/washwater with groundwater, 3) the attenuation of the polished permeate/washwater in groundwater over a horizontal distance of more than 2,000 feet from the sprayfield to the river, and 4) the dilution provided by the river itself.

Part II of the indirect discharge permit contains the monitoring requirements associated with the land application of washwater to agricultural fields. This portion of the permit has always had groundwater and surface water monitoring requirements. The monitoring requirements have been increased significantly from previous permits.

Sampling Plan: As required by this permit and all previous permits, Cabot is required to submit all sampling results to the Agency by the second month following the date of sampling. These results are public records and are available upon request. The Fact Sheet summarizes the previous 5 years' worth of data as part of a permit renewal evaluation.

Custom Applicators: With regard to the comment that Cabot's truck drivers and sprayfield operators be trained and certified as custom applicators, the Agency agrees that this is a good idea. A condition has been added to the permit which requires the

drivers to complete eight hours of training once the Agency of Agriculture adopts a rule for custom applicators in accordance with the Vermont Clean Water Act.

Bram Towbin Comments:

In addition to my comments below I am enclosing an editorial which ran in the Times Argus on Aug 26.

All institutions, whether public or private, REQUIRE oversight in order to prevent adverse behavior that endangers their mission. Teachers take attendance and give tests in order to insure that the students master the material. Bosses have procedures in order to guard against workers neglecting their duties through unauthorized behavior or unexcused absence.

Government Agencies require proof of adherence to regulations in order to ensure that citizens or companies comply with rules. No need to have a degree to sociology in order to imagine the results of giving people 'free reign'. Actually Vermont's leniency in terms of managing embezzlement has led to the State having the ignominious distinction of being the riskiest state for this crime in 3 of the last 6 years. (http://www.burlingtonfreepress.com/story/news/local/ 2015/04/08/study-vermont-soft-embezzlement/25490017/)

The current regime of allowing Cabot Creamery to essentially self-police in the dispersal of 850 million gallons of waste water is a recipe for mismanagement. I have met the people at Cabot Creamery and they are a first rate group of community minded individuals. I have met your staff and I believe you want to enforce regulations that protect people. The problem is that neither the company or ANR can match basic human nature. The permit relies on the goodwill of the individuals to report mistakes. The bottom line is that there is no way for the agency, given the woeful lack of monitoring, to know whether the refuse material is being dispersed properly.

The following terms must be added to any new permit in order to protect residents, towns and taxpayers:

1. All contracts with farmers must indemnify property owners, residents and towns where the material is being sprayed. This includes not only clean up costs but possible health issues. If this practice is as safe as you say - this should not be a problem.

2. The State needs to put a clear date on when this “temporary” practice will cease. If not, then ANR needs to inform residents in writing that this will go on in perpetuity.
3. If any mistakes are discovered the penalties must be severe. This is an institution that makes $10 million annually. You need to assess a fine that ensures that the people at headquarters realize that this is a serious matter.
4. Part of this permit should include a fee assessed for the study of treatment plant. That study needs to be undertaken by a third party. This should be a springboard for the state to enter into talks with the company to solve this problem by coming up with alternative to the current practice.

On this last point I put the company in touch with Prof John Todd, the world renowned hazardous waste expert, during the last renewal. (Prof. Todd’s bio: http://www.uvm.edu/giee/? Page=todd.html) There were a few emails back and forth with Cabot Creamery showing willingness to explore the waste-water plant solution. As soon as ANR granted the permit - all talked ceased. You have an opportunity to steer the company in the right direction. As a local official I will be monitoring progress.

Times Argus editorial:

Article published Aug 26, 2015

Pay your whey

Should property owners, farmers and municipalities bear the risk of a wealthy private corporation’s waste disposal practices? Cabot Creamery, a subsidiary of the AgriMark Corporation, currently spreads its wastewater on the fields of over 30 Vermont towns, including Plainfield, where I am chair of the select board.

The state’s Agency of Natural Resources has sanctioned this decades old practice in which teams of drivers travel to assigned locations and individually spray fields with waste products that are, according to the company, food grade. ANR readily admits they do not have the manpower to oversee the operation and rely on Cabot Creamery being a good citizen. The company states that building a conventional wastewater treatment facility is impossible for geographical restrictions. This is a factually accurate statement but hides a larger truth, as cutting edge technology might handle the problem.

During Cabot Creamery’s last permit hearing I arranged a discussion between the company and a world renowned expert on water treatment, who happens to be a University of Vermont faculty member, Dr. John Todd. His company designs facilities in difficult locations such as Cabot. There were a few emails but Cabot Creamery lost

interest after ANR granted its permit. On Monday, Aug. 31, there is a hearing regarding another permit renewal for Cabot Creamery's antiquated discharge practices. It is an opportunity for the state to do its job and shield the taxpayer while ensuring the longterm safety of its residents and protection of the environment.

The result of past hearings has been to marginalize groups that feel the current disposal regime is unsafe. An ANR expert challenges the science behind the group's concerns. Whether or not specific parts per million of a certain chemical are dangerous misses the point entirely. There are numerous examples of companies dumping substances deemed safe that end up costing taxpayers millions of dollars. One case in Vermont is the VAG asbestos mine near Eden and Lowell. Furthermore, it doesn't take much imagination to see safety issues related to having unsupervised individuals spraying over fields. The state gives Cabot Creamery no incentive for change as there is little desire to challenge a major economic engine in the local economy.

Jobs matter and financial considerations need to be taken into account in any fix. Regulators must insure that the plant can absorb new costs. Simply giving Cabot Creamery a never ending license to spray wastewater over dozens of towns presents grave liabilities for taxpayers. That must be addressed immediately by incentivizing the corporation to act. Cabot Creamery says all material discharged on fields is safe and there is no risk. Then there should be no problem with them accepting full liability, in writing, for cleanup or citizen's health problems related to the practice should they occur in the future. Perhaps AgriMark, which has made over $10 million annually for the last three years, will renew efforts to investigate alternatives to spraying. Regulators have let this fester too long. The problem is that the current disposal practice is handled in an unacceptably casual manner. Stop acrimonious discussion about minutia and address the root problem. Here is the question: Should the state allow a company to spray waste products willynilly over various plots of farmland? If the answer to that question is "yes" then Cabot Creamery's cost calculation must factor in full liability for any future problems. The taxpayers of Vermont have enough on their plate with paying for AgriMark's waste.

Agency Response:

Oversight: Cabot does not have free reign disposal practices. Cabot is required to submit monthly disposal reports to the Agency. These reports include summaries of the fields used on a daily basis, the volumes sprayed by each truck/driver, and even the truck routes taken. These reports are reviewed monthly by the Agency for any violations of permit conditions. The Agency issues Notice of Alleged Violation letters to Cabot when any violation occurs, action that often leads to enforcement and penalties.

Proposed Terms: The Agency is not going to require Cabot to indemnify land owners, residents or towns where spraying takes place. As a policy, the Agency does not interfere with private negotiations or contracts between a permittee and a property owner. Landowners where spraying occurs have the right to opt out of the contract at any time.

Duration of Land Application: As an outcome of the public comment and the stakeholder process that is now underway, Cabot is a party in the stakeholders process that will investigate alternative treatment and/or disposal options.

Penalties: The Agency has imposed penalties in accordance with State statute on a number of occasions over the years for spraying violations. The most recent Assurance of Discontinuance, signed by the court on March 31, 2015, included a penalty of $11,250 for exceeding daily and annual spraying limits.

Treatment Plant Study: The Agency is not going to collect fees for the study of a treatment plant. As noted above, Cabot is participating in a stakeholders process to evaluate alternative treatment and/or disposal options.

Charlotte Dennett Comments:

Below is a summation of comments I made at the August 31 hearing in Cabot on IDP 9-0043, with a few additions, As you both know, I have represented two Cabot residents with regard to permit matters and hearings before the District 5 Act 250 commission and ANR. In the process I have had to do some historical research which is reflected in my comments.

As far back as 1990, Timothy Burke, Commissioner of the Department of Environmental Conservation, and Jonathan Lash, Secretary of the Agency of Natural Resources, warned about the danger of improper disposal of dairy wastewater when they drafted Guidelines for Land Application of Dairy Processing Wastes - Guidelines which are still relied on today and are cited in the current draft permit.

They wrote: "Improper disposal can lead to pollution of groundwater and drinking water..... Overloading of fields ...can result in runoff to surface water which can lead to oxygen depletion and fish kill. Furthermore, the nutrient content of dairy processing wastes can accelerate eutrophication in many surface waters. " Eutrophication causes blue green algae which in turn can has proven harmful to animals and humans. ANR records obtained through public records requests show ample evidence of improper disposal.

My concern, shared by many who testified at the August 31 hearing; is that we live in a time of climate change in which heavy tropical downpours are becoming the norm in Ve1mont springs and summers. As shown below in ANR's own documents, heavy rainfall increases the likelihood of overloaded fields and runoff of Cabot's phosphorous and chemical-ladened wastewater into the receiving streams which feed into Lake Champlain.

This permit is woefully inept in dealing with this phenomenon and needs to be amended to address it head on. Apart from the need to document Agri-Mark's efforts to find an alternative methods of wastewater (surprisingly omitted from the current permit), the following suggestions are offered for amending the permit:

1. Soil Testing is Needed

As with its predecessors, ID-9-0043 does not appear to contain any provision for testing the absorptive capacity of fields where land applications have repeatedly occurred. This appears to be a serious oversight given the above warnings.

Suggested Amendment to the Permit: I concur with James Ehlers of Lake International, Lindsay Harris of Vermonters for a Clean Environment and Pat Sagui of Composting Association of Vermont that there should be mandatory soil testing of all receiving fields on an annual basis during the spring and summer.

2. Truck Drivers Must be Better Monitored and Held Accountable for violating spraying conditions.

ANR records are replete with complaints from nearby citizens that trucks are spraying waste on fields with standing water, in violation of permit restrictions that no spraying shall occur if there is less than a three foot distance between the ground surface and ground water. There is clear evidence in the records -including memos from Bruce Bannister, who worked as the head of Agri-Mark's land application program from 1999 to 2007 -- that drivers are not checking the monitoring wells to be sure the three feet separation exists before spraying.

The Johnson Company, in its annual inspections of Cabot's land application of wastewater, has repeatedly recommended that "drivers record more frequently their observations including standing water, surface run-off and other specified in Section #7 of the permit. In 2012, Johnson Company reported in 2012 (p. 8) that "No notes were made (by drivers) in the journals regarding the significant rain event associated with Hurricane Irene." Judging from 2011 land application reports, spraying occurred as usual on the usual fields in the immediate aftermath of Irene with no consideration of

standing water, let alone flooding. In the 2013, The Johnson Co. reported, p. 5, *"No notes were made in the journals regarding significant rain events."* In the 2014 and 2015 Johnson reports, no mention of significant rain is made although there was clearly significant rain in the summer of 2013 (fifth rainiest summer in Vermont's recorded history) and in May and June of 2015, it rained almost every day.[Emphasis added].

According to the current draft permit, ANR is content to take the drivers' word that they are testing the monitoring wells. This is unacceptable.

Suggested Amendments to the Permit: ANR should introduce stricter groundwater well monitoring by truckers into the permit and random, unannounced testing should occur. The drivers' daily logs, which currently are in the custody of Agri-Mark, should be readily available for inspection -- not just by ANR but also the public.

I also concur with Ed Stanak of Vermonters for a Clean Environment that Agri-Mark should use GPS technology for tracking each truck's routes.

3. Recurrent High Nitrate and TDS Concentrations at Field 40A need further scrutiny and recommendations from an outside consultant.

The nutrient content of Agri-Mark's wastewater has been shown to be elevated in Field 40A (the so-called Alexander field, owned by Agri-Mark, which is located next to the sprayfields) year after year. For example:

In 2009, The Johnson Company reported on groundwater sampling of the "Alexander Field 40A and Sprayfield" as showing "nitrate above its respective primary VGES in one well; and total dissolved solids ...in two wells above its secondary Preventative Action limit [PAL] of 250 m/L."

Two years later, in 2011, an IDP Fact sheet revealed that "For Field 40A, both applied down monitoring wells #402 and 403 continued to reflect the effects of the land application of dairy processing wastewater on groundwater quality. " Both wells had "significantly higher concentrations of chlorides and total dissolved solids ...Wells #402 and 403 also show a significant increase in nitrate concentration ..."·

The June 2015 Fact sheet states .that "for Field 40A, both downgradient monitoring wells 402 and 403 continued to *reflect the effect of the land application* of dairy processing wastewater on groundwater quality ....Both wells have higher concentrations of total dissolved solids [and], nitrite/nitrate nitrogen." [Emphasis added]

Question: What accounts for the high nitrate concentrations found in Field 40A? My understanding of Preventative Action is that it requires steps to remedy the situation. What are the remedies to high nitrate and TDS levels in the monitored fields?

Question: Shouldn't fields chosen for monitoring wastewater be devoid of manure and fertilizer which, in the March 2015 water quality evaluation covering the previous permit, were offered as reasons for the high levels of nitrate and TDS in Field 40A?

Question: A look on the maps provided in the 2015 Water Quality Evaluation shows Field 40A to be directly adjacent to the sprayfields. Could the toxicity of the sprayed polished permeate account for the high levels of nitrate and TDS in the Field? Field 40A and the sprayfields are also shown to be less than half a mile from the Winooski River.

Suggested Amendment: An outside consultant (other than the Johnson Company) shall be hired with input from the public to analyze the wastewater in Field 40A and provide answers and possible remedies to the exceedances found in this field. An additional field will be added with new monitoring wells so that any future evaluations of wastewater will focus on the contents of the wastewater alone and not be corrupted by manure or fertilizer spreading.

4. <u>The Winooski River Needs to be Monitored</u>

The current draft permit (as noted on the June 2015 fact sheet, page 9) states, with regard to the previous permitting period, "no receiving stream monitoring was required in the permit as the receiving stream is the Winooski River and *no effects* of the water quality of the River *due to land application on Field 40A* were expected based on the size of the receiving water relative to the volume of dairy processing wastewater applied annually." [Emphasis added]

This conclusion directly contradicts the 2011 and 2015 water quality reporting about Field 40a, which state MWs 402 and 403 [in Field 40A] "continued to reflect the effects of the land application of dairy processing wastewater on ground water quality. "

Suggested Amendment: As the draft permit points out (B1, page 6), " The indirect discharge from the polished permeate sprayfield is located on the Winooski River." The Winooski River feeds into Lake Champlain. Given the above-limit concentrations of nitrates in Field 40A (and sprayfield, according to the Johnson Company in. 2009) and the warnings of Secretaries Lash and Burke about eutrophication and runoff, shouldn't the permit require monitoring of the Winooski River?

5. Findings reported by the permittee or its hired consultants (The Johnson Company; Stone Environmental) should not be generalized or averaged out, nor should significant exceedances of PAL' s be ignored.

Kim Greenwood at the Vermont Natural Resources Council testified at the recent hearing, that water quality results should not be averaged out. If there is a problem, it should be remedied.

On page (9) of the 2015 Fact Sheet accompanying the permit, there is an acknowledgement that the concentrations of total dissolved solids, nitrite/nitrate, sodium and chloride are higher in wells (402 and 403) downgradient of the land application area, and the average concentrations of total dissolved solids (etc.) are Below the Groundwater Protection Rule and Preventative Action Limits."

In The Johnson Company's September 2011 groundwater monitoring report, (based on samples from groundwater wells on September 20 and 29, approx. 3-4 weeks after Irene) nitrates were reported to be "slightly in excess of the Vermont Primary GW Enforcement standard at one of the sprayfields," and total dissolved solids in the same sprayfield were "slightly in excess", but there is no mention in the report of the high phosphorous count in Monitoring Well 751 (7.0 mg/L) in MW 753 (3.3) and in MW 754 (16), as opposed to (for example) phosphorous counts of 0.006 and 0.013 in other wells.

Suggested Amendment: Excessive phosphorous levels in the wastewater should be addressed head-on, reasons shall be given for the high levels, and a continued effort to reduce phosphorous levels in cleaning agents should be documented.

6. The unlined lagoons which store polished permeate must be renovated

Section Al of Part One makes reference to the polished permeate wastewater being "stored in three ponds during the winter period December - March." The 1986 Act 250 permit stated that the three lagoons were to be "high density polyethylene lined" and "will be renovated by mid-1987 and the effluent will be sufficiently treated -particularly at lower BOD levels." The ponds were never renovated and are merely clay lined and the effluent is not treated.

Suggested amendment: Given the toxicity of the permeate and the fact that it the sprayfields are adjacent to the Winooski River, the draft permit should be amended requiring the renovation of the lagoons during the first year of the permit. [1]

Footnote 1. The draft permit now states that under E6(A), the requirement to " Collect and analyze groundwater monitoring samples around ponds" is "upon request," as is the requirement in E6(B) to "Measure and record the depths to groundwater in monitoring wells around ponds." Lynn Henning of the Sierra Club, who participated in 2010 in a conference at Vermont Law School, used a specially- designed computer program (used in court cases throughout the United States) to zoom in on the Agri-Mark lagoons. She warned that (a) the unlined lagoons are substandard in build, (b) there is an extensive "dead zone" of contamination where no life can subsist in this area and (c) she was visibly able to see that this area is a wetlands .and that federal law prohibits spraying, storing and dumping on wetlands.

7. The permit should require stringent monitoring of the lagoons.

Similarly, the E7(A) requirement to "Collect and analyze receiving stream samples and the E7(B) requirement to plan for biological monitoring are "upon request" and the water quality evaluation of the polished permeate does not occur until 2020.

Suggested Amendment: Given the dangers of runoff and leaching into the Winooski River, more stringent testing requirements should be put in place requiring analysis of the pond and steam samples in April, June, and August of each year.

8. There is no acknowledgement in the draft permit of changes in annual precipitation.

The draft permit states (Sec A-1) that "Spraying [on the sprayfields] may not take place during spring run-off or if the water table is less than one (1) foot below the surface. Annual precipitation minus evaporation adds an average of 2,850 gpd to the ponds during the course of the year . . .The application rate [shall be]2 inches per 7-day period."

Question: Has ANR determined changes in annual precipitation in recent years and if so, shouldn't these changes be taken into account when determining the amount of application rates and the timing of the application instead of relying on Groundwater Applications Rules that are over 25 years old?

The annual inspection reports of the lagoons and sprayfields are based on a one-time sampling which does not necessarily reflect heavy rain events. For example, with the samples taken in 2011 (the year of Irene) and 2012 (the year after Irene), samples were taken in May (Irene occurred in late August, 2011) and June, 2012.

Suggested Amendment: The permit should be revised to require sampling of the sprayfields and the lagoons and receiving streams after periods of high rainfall.

9. The draft permit allows the Secretary (A-5, page 32) to do biological monitoring, to inspect manure pits at disposal sites, to sample any discharge of waste, groundwater or surface water; and to inspect pollution management at the facility. Yet when asked, the Secretary has been unresponsive to requests to have unannounced testing of chemicals in the waste stream.

The EPAs Stephen Perkins, in a letter to the writer on August 14, 2014, stated that he suggested to the DEC that another unannounced inspection and sampling visit "would help establish a record of current performance before the next permit review." That has not happened; nor has unannounced testing occurred when requested by this writer two months ago.

Suggested amendment: The wording of this section needs to be strengthened, along the lines: "The Secretary shall be responsive to reasonable requests from the public for monitoring and sampling of the wastewater, fields, manure pits and streams and shall cause independent, unannounced testing of the wastewater to occur at least twice during the terms of this permit."

10. The draft permit omits the requirement from the previous permit that alternative methods of treating the waste should be explored and reported on.

Year after year, residents have asked why there is no wastewater treatment plant as originally required. Agri-Mark and ANR have answered that the Winooski River cannot adequately assimilate directly discharged treated waste, but the records indicate that the “high cost of building a plant ($4-5 million) was a major reason for not pursuing it. There are now new technologies available.

Suggested amendment: Agri-Mark will aggressively pursue alternatives to its land application program and report on its investigation of alternative waste treatment methods on an annual basis.

Agency Response:

Soil Testing: The Agency agrees that soil testing needs to be part of the monitoring program for Cabot Creamery. Soil monitoring requirements have been added to the permit.

Truck Driver Monitoring: The Agency agrees that there needs to be further restrictions on spraying during heavy rain events when runoff could occur. The permit

has been revised to include further limitations on spraying during heavy rain events, spraying which could cause runoff to streams such as when the ground is frozen without adequate snow cover, and spraying on fields that have standing water.

With regard to compliance with the three foot separation to groundwater, the Agency will be asking for copies of the truck logbooks and/or Driver Checklist for Approved Fields more frequently and with no advance warning to determine whether groundwater levels are being measured when required.

The monthly disposal reports currently submitted by Cabot indicate which routes are used by the trucks as they leave and return to the facility. Requiring Cabot to use GPS technology won't reveal whether any of the spraying restrictions are compiled with.

Field 40A: The elevated nitrate concentrations found in the downgradient monitoring wells at Field 40A are most likely the result of the land application of washwater on Field 40A. Test results of the washwater shows that it has elevated levels of ammonia and nitrate, and to a lesser degree nitrite. Ammonia is likely being converted to nitrite and then nitrate by nitrification after the washwater is land applied. Based on the groundwater concentrations of nitrate, it is assumed that denitrification is also taking place.

It would be ideal to monitor groundwater at fields that don't have manure or commercial fertilizer applied as a comparison, but farmers typically need to fertilize fields to enhance hay or crop production. The Indirect Discharge Program does not regulate farm activities and therefore has no jurisdiction as to whether a field gets fertilized or not.

The sprayfield is located downgradient of Field 40A, therefore has no bearing on groundwater quality of Field 40A. The concentrations of nitrite/nitrate and total dissolved solids cited in the August 2015 Fact Sheet are from the downgradient monitoring wells of Field 40A, which also serve as the upgradient monitoring wells for the sprayfield.

For a discussion of remedial action, please refer to the Agency's response to Kim Greenwood's written comments on page 68.

Winooski River Monitoring: The Winooski River was not included in the sampling program because it was assumed that Water Quality Standards in effect at the time would be met in the river due to 1) uptake of nutrients by vegetation in the sprayfield and the land application of washwater on Field 40A, 2) the dilution provide by mixing polished permeate/washwater with groundwater, 3) the attenuation of the polished permeate/washwater in groundwater over a horizontal distance of more than 2,000 feet

from the sprayfield to the river, and 4) the dilution provided by the river itself. To test this assumption, a mass balance equation was used to calculate the theoretical impact to the Winooski under a worse-case scenario. Using the highest nitrite/nitrate, total dissolved phosphorus and chloride results obtained from the monitoring wells downgradient of the sprayfield for 2010 - 2014, and assuming no groundwater attenuation, river flow at summer low flow conditions (low median monthly flow), and spraying and land application at the maximum daily volumes allowed, the mass balance equation calculated a theoretical increase of 0.444 mg/l for nitrite/nitrate, 0.004 mg/l increase in total dissolved phosphorus, and a 0.384 mg/l increase in chloride. Based on limited water quality data from above the Route 215 bridge south of Cabot village and above the discharge zone, these theoretical increases would likely not have caused a violation of the 2008 and 2011 Water Quality Standards, the standards in effect during the 2010 – 2014 permit period, under a worse-case scenario. Actual discharge concentrations to the river would be expected to be much less. In addition, water quality data obtained in 2007 – 2010 from sampling stations above and below the discharge zone showed no distinguishable different in water quality at that time, indicating no impact from the indirect discharge.

Given the recent adoption of the Water Quality Standards, effective October 30, 2014, now with more restrictive standards for phosphorus, sampling of the Winooski River has been added to the permit.

Use of Mean Value: For a discussion of the use of a mean value, please refer to the Agency's response to Kim Greenwood's written comments on page 68.

Renovation of Lagoons: Whether or not the lagoons were renovated in 1987 has no bearing on the current indirect discharge permit. Inspections of the lagoons have been conducted annually, and there is no evidence that the lagoons are leaking. Clay has an extremely low permeability and is commonly used as a liner material for ponds, etc.

Polished permeate is the water fraction of filtered whey and is not toxic. The lagoons are not located adjacent to the Winooski River. In addition, the lagoons do not fall under the jurisdiction of the Vermont Wetlands Program.

Monitoring of Lagoons: The purpose of Conditions E6(A) and (B) is to monitor groundwater quality and levels in the event that a leak in one of the lagoons is suspected. If that were the case, frequent monitoring would be required.

The permit now requires chemical monitoring of the Winooski River due to the recent adoption of the latest version of the Water Quality Standards.

Annual Precipitation: The Agency has not determined changes in precipitation in recent years. Precipitation graphs from the two National Atmospheric Deposition Program stations in Vermont do show an increase in precipitation since the mid-1980's. However, the volume of polished permeate sprayed has decreased significantly since 2010 due to Cabot's practice of reusing polished permeate as a first rinse of their equipment, saving water. In addition, the sprayfield capacity greatly exceeds the volume of polished permeate that is being generated. The sprayfield application rate of 2" per week has nothing to do with the application rates in the Guidelines for Land Application of Dairy Processing Wastes that the commenter is apparently alluding to.

Annual inspections are not sampling events. Sampling of the sprayfield and lagoons after heavy rainfall would be inconclusive because groundwater levels would likely be such that spraying would not be allowed. Sampling surface water within 24 hours of a storm event affecting the stream's watershed is prohibited because the turbid water in the stream would be loaded with sediment and nutrients from many upstream sources, especially from streambank erosion, and the results would be meaningless for determining Cabot's impact on compliance with the Water Quality Standards.

Unannounced Sampling: Due to budgetary concerns, the Agency has not done another round of unannounced sampling. The previous round of unannounced sampling cost roughly $3,200 for the lab analyses. This does not include the cost of staff time preparing for and conducting the sampling. However, the Agency has bill-back authority and has discussed this possibility with Cabot Creamery. The Agency reserves the right to conduct unannounced sampling of process wastewater if/when it deems it is warranted, and not every time the public requests it be done.

Alternatives Analysis: As part of the stakeholders process that is now going on, treatment and disposal alternatives to the current practice of land application will be explored. The permit has been revised to include submittal of an alternatives analysis by December 31, 2016.

David Covell Comments:

As a Cabot resident, I fully support this waste water permit application.

I believe Cabot/Agrimark understands the responsibility surrounding proper wash water disposal. This is an important part of our economy and it needs to continue to be supported without any compromise impacting the people and ecology of the area.

Agency Response:

No response necessary.

Ed Stanak Comments:

I provided you at the August 31, 2015 Department public meeting with a written copy of the comments I made at the meeting. Attached to this email you will find a revised version of my comments which have been supplemented with the inclusion of new items # 5 and 6. I file these revised comments for the consideration of the Department prior to tomorrow's deadline for the filing of written comments.

The following are comments provided on behalf of Vermonters for a Clean Environment with respect to the proposed renewal of an Indirect Discharge Permit by the Department of Environmental Conservation authorizing the disposal of wastewater from the Agri Mark Inc. dairy products plant in the Town of Cabot by means of both a spray field at the plant site and land applications involving more than 3,000 acres of fields located in more than 30 towns within the drainage basins of multiple rivers.

1. The content of the waste stream from the Agri Mark facility in Cabot has changed since the late 1980s when the land application process first came under the regulatory review of the District 5 Environmental Commission and then the Department of Environmental Conservation. For example, over time the applicant has represented in administrative proceedings that it has been successful in recovering most, if not all, of the whey content from the process that results in the various dairy products. The applicant has also indicated that there is a production cycle at the Cabot plant such that as the week progresses, product manufacture shifts from cheeses to yogurts to other products. Approximately 50 chemical clean-up agents are required to treat equipment, containment and conveyance surfaces and process areas between the production operations/process events. It would seem that a significant component of the waste stream is now detergents and wash water with minimal dairy processing wastes and thus minimal nutrient content for the soils at the land application sites. In this context, does the 150,000 gpd waste stream for land applications remain qualified for the exemption from the regulations for indirect discharges as set out in the Department's policy statement dated 1990 and entitled " Vermont Guidelines for Land Application of Dairy Processing Wastes" ?

2. The proposed IDP includes several conditions intended to ensure compliance with applicable Department regulations. The land application system involves sites

located in several watershed areas across a large segment of northeast Vermont and depends upon a trucking system for land applications categorized by different seasons of the year and subject to site specific limitations for the land applications. This establishes a complicated means of waste disposal which is contingent on many variables. The courts have held that permit conditions must be enforceable and not merely an administrative means to allow a commercial land use to proceed. While the proposed IDP (as did predecessor IDPs) designates five fields for purposes of ongoing groundwater and receiving stream monitoring, these fields are a very small cross section of the total fields involved in the wastewater disposal program. It is difficult for a reasonable person to conclude that the scope of the conditions in the IDP (e.g. daily · trucker journals, monthly written reports by the permittee to the Department, a single annual toxic scan on samples of wash water and so on) are sufficient to ensure compliance with the requirements for the land application system. Is the Department willing to revise the proposed IDP to include a monitoring system that utilizes GPS technology for the daily tracking of each truck's route and the specific sites used for the land applications? Such an automated system - in recognition of staffing deficiencies at the Department - could include a methodology whereby inappropriate uses of land application sites (i.e. by season, excessive loading rates, etc) would be more easily identified.

3. Many of the land application sites have been in use for several years, if not decades. These sites would appear to provide excellent opportunities to assess the long term and cumulative effects on the ability of the soils to provide effective treatment of the waste stream. Would the Department consider modifying the proposed IDP to include provisions for field testing of an appropriately broad sampling of these sites in order to evaluate long term and cumulative effects?

4. Over the last few years, the Vermont legislature has placed increasing emphasis on the need to ensure the reduction of greenhouse gas emissions/carbon footprints in light of the increasingly detrimental effects of climate change. The applicant's land application program involves the hauling of wastes throughout a broad region of Vermont by diesel fueled trucks on a daily basis. Has the Department quantified and considered the carbon footprint of the applicant's trucking practices in preparing the proposed IDP?

5. At the Department's August 31, 2015 public meeting on the proposed renewal of the IDP, a resident of Cabot alleged that only small amounts of cheese are produced at the Cabot plant. The Department should consider requesting information on production levels at the Cabot plant in order to confirm this allegation. If this information reveals

that the level of cheese production at the plant is less than substantial (i.e. the production of other dairy products exceeds that of cheese), then a threshold jurisdictional issue would appear to arise under the provisions of 10 VSA Chapter 47. Specifically, if cheese production is no longer the dominant factor at the plant, then does the waste stream no longer qualify for the exemption for rinse or process water from a cheese manufacturing process as set out in the provisions of 10 VSA 1251(12)?

6. It is understood that the Vermont legislature has granted the Department "bill back" authority for the costs of testing and analysis performed by independent third entities with respect to ensuring compliance under the statutory and regulatory provisions administered by the Department. The costs for such testing and analysis would be assumed by the applicant/permittee. In this context, will the Department consider retaining a qualified third party to design and implement the recommendations made in items # 2 and 3 above in this memorandum?

Agency Response:

Waste Stream: Although the waste stream has changed since the late 1980's with the removal of whey, the washwater is still beneficial for vegetative growth because it still contains sufficient amounts of nutrients such as nitrogen and phosphorus to be used as a fertilizer amendment.

Cabot has provided the Agency with a list of chemicals that they use on a daily basis for cleaning and sanitizing. A tally of the daily usage indicates that Cabot uses approximately 200 gallons of liquid chemicals and about 55 pounds of powder chemicals per day in their facility. These chemicals include both acids and bases, so when combined in the washwater, the chemicals are neutralized to some degree depending on the ratio and pH of the acids and bases, forming water and a salt, and further buffered and diluted by the approximately 100,000 gallons of polished permeate and water used for cleaning and sanitizing purposes each day.

Compliance: Cabot is required to submit monthly disposal reports to the Agency. These reports include summaries of the fields used on a daily basis, the volumes sprayed by each truck/driver, and even the truck routes taken. These reports are reviewed monthly by the Agency for any violations of permit conditions. The Agency issues Notice of Alleged Violation letters to Cabot when any violation occurs, and in some instances, these NOAVs have led to enforcement action and penalties.

Soil Testing: The Agency has added soil testing requirements to the permit for the purpose of determining the long-term effect of spraying on farm fields. If testing reveals that soils are becoming clogged or minerals are leaching from the soil to groundwater due to excessive soluble salts, those fields will be removed from the approved disposal program.

Carbon Footprint: The Agency has not quantified the carbon footprint of Cabot's disposal practices. There are no criteria in the Indirect Discharge Rules for considering greenhouse gas emissions. That said, the Agency agrees that greenhouse gas emissions should be reduced as much as possible, and would hope that Cabot takes the initiative to reduce its carbon footprint as a part of the re-evaluation of its disposal practices.

Production: Cabot Creamery has indicated to the Agency that they make cheese seven days a week. They also manufacture cottage cheese, yogurt, dip and sour cream on a less frequent basis.

Third Party Testing: The Agency has made Cabot aware that we intend to perform surprise sampling of the process wastewater and the cost of such testing and analyses will be borne by the permittee. The surprise sampling event or events would also include an inspection of land application sites being utilized on that date to determine compliance with all applicable land application limits and requirements.

Jessica Miller Comments:

Why Agri-Mark's Indirect Discharge Renewal Permit is Invalid

The Agency of Natural Resources has completely abrogated its responsibility as a regulatory authority in defense of Agri-Mark. The multiple misrepresentations in the most recent Indirect Discharge Permit are enough to warrant revocation of this permit. And the gross deceptions concerning the nature of the wastestream that is being land applied and the uses and disposition of the wastestream that is being recycled throughout the plant should demand accountability from both the Agency and Agri-Mark.

The Indirect Discharge Permit - ID-9-0043 - authorizes the disposition of Agri-Mark' s two separate wastestreams; land application of its Cabot plant's "dairy processing wastewater" onto farmer's fields in 33 towns in Vermont and spray irrigation of its so-called polished permeate onto fields behind the plant. The problem is Cabot's "dairy

processing wastewater" has little if any dairy component and is essentially chemically laden washwater hiding behind the broad definition of "dairy processing wastewater".

Agri-Mark's assertion that "The Guidelines for Land Application of Dairy Processing Wastes do not set minimum standards as to the content of the beneficial component in a dairy waste which would make it acceptable for land application" ignores the fact that those guidelines are premised on whey being the predominant component of its land applied waste with its concomitant fertilizing properties. And all of the rules, restrictions, application rates, etc. of that effluent is "based on the fertilizer content of whey.

Realizing that Cabot's cheese production would be moving to the Middlebury plant, thus eliminating the presence of whey, Agri-Mark, prior to its final purchase of the Cabot plant in 1992, wrote to the then CEO of Cabot, Bill Davis, demanding that, among other conditions, the definition of Cabot's waste be changed from "non-sewage dairy waste" to "non-sewage dairy processing wastes". Agri-Mark knew then that it had to come up with a vague and very broad definition of its land applied waste in order to conceal the true nature of the stuff which is simply washwater containing over 200 cleaning chemicals.

The other waste stream at the Cabot plant is the liquid that is left over from separating whey from the water before being sent to Middlebury for further processing into other products. What has been referred to in the past as pure, benign, low BOD washwater, this so-called polished permeate was pumped underground to 3 storage lagoons and then pumped uphill to be spray-irrigated onto fields behind the plant. And this is how this washwater is characterized in the current permit. However, unknown to the Chief of the Indirect Discharge Permit Section, Bryan Harrington, was that this polished permeate, now called pasteurized polished permeate, is being diverted to different uses inside the plant and ultimately discharged into the town's municipal waste treatment facility and no longer spray irrigated onto its own land. Interestingly enough, nowhere in the current ID permit is there any reference to this change of use and the attendant Wastewater System and Potable Water Supply Permit -WW-5-5980-R authorizing this use. To further muddy the waters, so to speak, is Agri-Mark's claim that it has added a third reverse osmosis machine and ultra-violet sterilizer to render the permeate pasteurized. What was originally referred to as pure water after separating the whey is now being purified further and euphemistically characterized as recycling. It appears that Agri-Mark has found a clever solution to the disposition of what is, most likely, its most aggressive chemicals. Two years after implementing this new "recycling" of its polished permeate, the membranes to the filtration system of the town of Cabot's waste treatment facility

had to be replaced, at a cost of tens of thousands of dollars, due clogging from an unexplained source.

The gross misrepresentations and deceptions inherent in this permit should render it invalid. And the Agency's unwashed hands in assisting with its contents clearly demonstrates not only its inability to regulate Agri-Mark, but its willingness to help cover up that industry's shady operation.

Agency Response:

The process wastewater that Cabot generates is a dairy processing waste because it is waste that is generated from the manufacturing of dairy products. The 1990 Guidelines referenced above were developed subsequent to previous versions of the guidelines which focused on the land application of whey. Significant changes were made to the original 1979 guidelines in 1985 and again in 1990. As a result, the 1990 guidelines apply to the land application of dairy processing wastes and no longer solely for the land application of whey. Even though Cabot no longer land applies whey except on occasion for whey spillage, the process wastewater is still beneficial for crop growth as it contains nutrients necessary for plant growth such as nitrogen and phosphorus.

The polished permeate is indeed used as the first rinse of Cabot’s equipment. This recycling of the polished permeate saves a significant amount of water and has reduced the volume of polished permeate that is sprayed in the sprayfield. The recycled polished permeate is then land applied with the rest of the washwater. None of it is discharged to the municipal sewer system.

The Wastewater System and Potable Water Supply Permit WW-5-5980 authorizes domestic wastewater disposal for a maximum of 274 visitors and 259 employees with a design flow of 4,800 gallons per day. The WW-5-5980-R permit is a revision of the WW-5-5980 permit which incorporated a few water withdrawal and nomenclature changes to the permit but did not authorize the disposal of polished permeate to the municipal wastewater treatment facility.

James Ehlers Comments:

It is our professional opinion that neither the previously authorized Indirect Discharge Permits (IDP) nor the currently proposed Renewal IDP have been nor are sufficient to safeguard the Public Trust in our State's waters based on the limited but disturbing data offered in the past and the limited oversight scheduled going forward.

Specifically, of highest concern, is that of the only streams monitored of the potentially 305 impacted, 100 percent of them (or both)--Cold Brook and Flagg Brook----showed increases in nutrient loading at the downstream monitoring locations. It is likely well known to you that the Vermont Water Quality Standards contain the following General Antidegradation Policy in §1-03(B): "All waters shall be managed in accordance with these rules to protect, maintain, and improve water quality." At a minimum, from the limited monitoring conducted, it is apparent that these two brooks are not being managed so as to improve water quality in direct contradiction to Vermont Water Quality Standards. This alone is basis for not re-issuing the permit utilizing the protocols of the past.

Furthermore, there is not sufficient biological data to be able to objectively determine the cumulative impacts to the aquatic ecosystems of these streams-the macroinvertebrate and fisheries populations-and obviously no other streams within the discharge area given the absence of Department oversight since this practice was first permitted several decades ago.

According to the permit itself, stated on page 2, "Dairy processing wastewater is used as a soil amendment for agricultural purposes to approved disposal fields due to its high nitrogen, phosphorus, and organic content." The issues surrounding the Agriculture Industry's use of soil amendments and their role in the eutrophication and steady decline of Lake Champlain water quality are now well known due to the lawsuit that required the U.S. Environmental Protection Agency to revoke the previous State TMDL and itself author the new TMDL for the Lake Champlain Basin, in which many of these receiving fields and waters are located. This new TMDL will require agricultural load reductions of 30 to 80 percent throughout the Basin. It would appear, through the Draft IDP, that it is the State's and the permittee' s intent to shift the entire burden for identifying load reductions to Cabot's own member farms if they are to continue to receive this "high nitrogen, phosphorus, and organic content" industry waste. If that is not the case, it would stand to reason, that any IDP renewal would require at a minimum a 30 percent reduction in loading from the applicant. Regardless, there is no "reasonable assurance" being offered to our fellow Vermonters that the Agency has a plan for reducing these loads.

Additionally, given the one- to perhaps two-day storage capacity of the permittee to maintain waste onsite during extended periods of inclement weather, the permit is technically unenforceable. It is our expectation that there are numerous instances during a five-year period when fields are not capable of infiltrating land- applied wastes

without incurring surface runoff. If there is data to the contrary, we would appreciate it being shared.

In light of all of the aforementioned, if you are still so inclined to continue to the permit the arcane practice of land-applied industrial waste, we request that you amend tl1e proposed Renewal IDP to reflect VWQS in the following manner until such time that it can be empirically demonstrated that the waters of the State are not being degraded by this practice but are in fact improved:

- The permit be limited to a one-year period
- Increase in-stream monitoring locations to 10 percent of those impacted or 31 total identified in concert with public stakeholders
- Mandatory bi-weekly chemical monitoring and monthly biological monitoring of the Winooski River year-round
- Mandatory bi-weekly chemical monitoring and monthly biological of the 31 identified and agreed upon impacted streams year-round
- Mandate a minimum of two week's onsite storage capacity to ensure no application occurs during extended periods of wet weather/frozen soil.
- Require reporting of how waste is handled during days when more than one inch of rain is received in less than one hour or when more than two inches of rain is received during a 24-hour period in any town of fields receiving waste
- Mandatory soil testing of all receiving fields in April and November to ensure fields' present and continued viability for receiving liquid soil amendments.
- Remove the provision for year-round spreading and, instead, prohibit application when frost is present at any depth prior to application that day.
- Permit shall reflect individual sample values for chemical analysis, rather than the current mean concentration protocol.
- An annual report either conducted by the Agency or an independent water quality specialist submitted two months prior to the permit expiration such that future determinations can made without extension of any practices continuing shown to be not improving Vermont waters or, at a minimum, not degrading them, especially when conducted in concert with other Agency of Agriculture-approved land applications of nutrients, milkhouse wastewater, or surplus milk.

Thank you for your work "to preserve, enhance, restore, and conserve Vermont's natural resources, and protect human health for the benefit of this and future generations." The people of the State of Vermont and our children are counting on you to safeguard all of our interest in safe, clean, healthy waters and soils.

Agency Response:

Receiving Streams: With the addition of the fields referenced in Comment #1 above, there are now 314 approved fields identified in Attachment A-1 for land application. Many of these fields are further subdivided into sub-fields to reflect seasonal spraying limits. As indicated in Attachment A-2, there are now 589 sub-fields.

The actual number of receiving streams is approximately 75. There are also 3 fields where groundwater discharges to ponds. Apparently, the commenter counted many of the receiving streams identified in Attachment A-1 multiple times.

The commenter's statement that 100% of the streams monitored showed an increase in nutrients is misleading. For Cold Brook, the downstream concentrations of nitrite/nitrate, TKN and ammonia were lower at the downstream sampling location, and more than 50% of the total phosphorus results were lower downstream. For Flagg Brook, the mean values for total phosphorus and total dissolved phosphorus were significantly lower at the downstream sampling location, and TKN was lower downstream as well. Although nitrite/nitrate concentrations in Flagg Brook were slightly higher downstream, they were still low and significantly less than the Water Quality Standard of 5.0 mg/L. Despite some apparent erroneous field measurements and possible sample mislabeling or lab reporting errors, the 2010 - 2015 water quality results indicate that the Water Quality Standards are being met in Cold Brook and Flagg Brook.

Reducing Nutrient Load: The proposed TMDL only applies to point and non-point discharges regulated by NPDES permits. Indirect discharge permits are not NPDES permits, therefore indirect discharge permittees are not subject to load reductions. That said, the Agency acknowledges that a reduction in nutrient loading is always preferred and would no doubt add another level of protection for the Champlain Basin.

It is important to note that the majority of the fields in the land application program are not used on a year-round basis due to seasonal spraying prohibitions, daily and annual disposal limits and limited field capacities. It is presumed that these fields also receive manure and/or commercial fertilizer which can contribute to nutrient loading of the receiving streams.

Enforceability of Permit: The Agency disagrees that the permit is unenforceable during periods of inclement weather. The permit contains conditions that apply regardless of the weather, such as not allowing surface runoff to waters of the State. Condition Part II - D1 of the draft permit has been expanded to specifically prohibit land

application during heavy rain events. The Agency will also conduct surprise inspections during heavy rain events to assure that these conditions are being met.

Proposed Conditions: The Agency has considered the commenter's proposed conditions and has the following responses:

- The Agency seriously considered issuing a permit for a two-year period but ultimately a decision was made to issue a 5-year permit. The permit does contain a condition that Cabot needs to apply for a permit amendment, if required, in response to the outcome of the stakeholder's process.
- Stream monitoring has been increased significantly from 2 to 15 streams throughout the land application area, plus the Winooski River. Stream monitoring will be focused around the summer low flow season when any potential impact would be most evident, with emphasis on streams that are at or near the minimum 10:1 dilution ratio. The 15 streams represent 20 percent of the roughly 75 summer receiving streams.
- The permit now requires two rounds of sampling of the Winooski River in August and September each year, and a biological site assessment in 2016.
- The permit requires monthly chemical monitoring of the streams during the summer low flow season. Biological site assessments and/or biomonitoring will only be required if water quality results indicate that the stream may be impacted by the discharge.
- At this time, the permit does not have additional requirement for two weeks' worth of storage, although the additional spraying restrictions imposed in the permit may force Cabot to pursue additional storage capacity or other disposal options. Additional storage may be necessary in the future depending upon the outcome of the stakeholders process.
- The permit now prohibits land application during heavy rain events. Cabot does have the option of disposing of their washwater to approved manure pits during these events.
- Soil testing requirements have been added to the permit.
- The permit does not prohibit winter-time land application, although disposal is limited to 3,530 gallons per acre per day on fields with a maximum slope of 5 percent.
- The permit does not discuss mean value concentrations. The commenter is referring to the August 2015 Fact Sheet.
- A water quality evaluation is required by March 31, 2020 to coincide with an application for permit renewal.

Kim Greenwood Comments:

VNRC has several concerns related to surface water and groundwater protection that we hope can be addressed within the context of the permit.

The first concern we have is with the use of "mean" water quality values as reported in the Fact Sheet accompanying the draft permit. Neither the Vermont Water Quality Standards for surface water, the Groundwater Protection Rule and Strategy (GPRS) Enforcement Standards or Preventative Action Limits consider the use of mean values. Reporting and considering mean values could mask exceedances of the standards that could provide useful information to the permittee, Agency and general public. We believe that unless the guiding document explicitly states that the use of a mean value is required, the permit should rely on actual and not mean values. All raw data should be submitted and included in the permit. In addition, this data should be made available on the Agency's website as it is submitted, rather than at the end of a five year period. Similarly, compliance with the permit conditions should rely on compliance with the actual standards, not with an artificial mean value. We suggest amending the draft permit accordingly.

Next, we believe the monitoring and reporting requirements should be increased. Basic groundwater and surface water monitoring benefit the permittee by providing documentation of compliance with water standards and the public by quantifying any exceedances. Monitoring data also provides valuable information for the Agency to ensure that the permit is effectively protecting the environment. Without additional data beyond what is required in the draft permit, it's difficult to determine whether or not this discharge is having an impact on Vermont's waters. This leads to speculation rather than discussions around facts. While the inorganic parameters appear reasonable, the quantity and frequency of sampling is sparse for a discharge of this size. Given that water standard violations could occur on any field, all receiving groundwater and surface waters should be monitored. As a reasonable compromise, we recommend requiring groundwater monitoring in at least 20% of fields and surface water monitoring of 20% of receiving waters - with sampling locations rotating on an annual basis so that all discharges are actually monitored for one year over the five year permit period. We also recommend more frequent TCLP analysis be required on a larger number of fields. Also, the permit should contain a monitoring plan, reporting plans and a corrective action plan for this data.

Our next concern relates to the alleged lack of storage capacity and apparent inability to accurately monitor all field conditions prior to wastewater discharge. Given that serious water quality violations could occur with misapplied polished permeate or dairy

processing wastewater, it's important to have a realistic, workable plan in place for events like high seasonable groundwater and frozen ground. As drafted, the draft permit and alleged site constraints (i.e. a lack of long-term storage facilities for the water to be discharged) appear both unrealistic and unenforceable, forcing the applicant to apply water even when field conditions don't allow for spreading. We suggest that the Agency work with the applicant to create a written plan that documents, for example, how draft permit condition D2 will be complied with. If the groundwater table is closer than one foot to the ground surface, or if it is between April 1st and November 30th then how does the applicant plan to deal with the waste? The applicant should be required to provide a monitoring plan for each field that allows the applicator to measure the depth to groundwater and a methodology to record and report this data. These plans should be incorporated into the draft permit.

The Agency should consider requiring alternative means of disposal, such as trucking the waste to existing municipal wastewater facilities, when field conditions would create an undue risk to water quality - such as during periods of high seasonal groundwater.

Another concern relates to the Agency's decision to renew and expand this permit in the face of what appears to be existing conditions that violate the Groundwater Protection Rule and Strategy. The draft permit Section Dl. states "....shall be operated at all times in a manner that will . ...(2) not result in a violation of the....Groundwater Protection Rule and Strategy..."• Yet, with comments about using a mean value momentarily put aside, it appears that the existing groundwater quality has been compromised: for example, sodium on Field 40A exceeds the allowable indicator parameter standard of 10 mg/L. The GPRS states that if an exeedance of the Indicator Parameter occurs, "the Secretary may determine that groundwater quality has been degraded and require a response (Sections 12-705 and 12-803 of the GPRS dated 2/25/05).

The GPRS also states that if groundwater monitoring concentrations of a waste in groundwater exceed an action level (including Indicator Parameters) then the applicant must notify the Agency in writing within at least five days and include a preliminary analysis of the cause and significance of the concentration. At that point, the Secretary is required to make an assessment as to whether the exceedance has the potential for an increased risk to groundwater via a violation of an enforcement standard at the compliance point (12-803(c)). The Secretary is then required to specify the responses required (if any) which may include, among other things, increased monitoring, a change in operation (i.e. not spraying on that particular field), an alternative method of waste treatment or disposal, or prohibition of the activity (i.e. spraying). The Secretary

may also determine that no remedial action is necessary if the enforcement standards won't be exceeded at a compliance point.

It is unclear if the applicant filed the report required in the GPRS. It is unclear if the Secretary has made all assessment as to whether the exceedance of the indicator parameter has the potential for an increased risk to groundwater. It is unclear what, if any, response was required as a result of the exceedance. It is unclear whether the Secretary decided that remedial action is not required. It is our opinion that the draft permit should not have been issued and cannot be finalized until these process required in the GPRS have been addressed. VNRC requests written documentation of this analysis.

Related to groundwater protection, VNRC has concerns with a lack of determination that the discharge will uphold the public trust doctrine. The draft permit is silent on this issue. We request affirmative findings be included in the final permit to demonstrate that such an analysis has occurred.

Our last concern may be beyond the purview of the draft permit, but is within the purview of the Agency. We'd like to understand why a discharge load that is known, quantifiable and permitted isn't allocated for in the Lake Champlain (or any other) TMDL. Drastic pollution reductions are called upon by other sectors in the same watersheds, often on the same properties, yet this permit allows an increase in the loading of nutrients in the watershed. An explanation as to why would be helpful to us.

Thank you for your consideration of these comments and for your work to protect Vermont's water resources.

Agency Response:

Use of Mean Value: The Groundwater Protection Rule and Strategy (GWPR&S) does not indicate whether a mean value can or cannot be used in determining whether an enforcement or preventative action limit standard has been met or exceeded. The GWPR&S states that the Secretary may utilize or require the use of generally accepted statistical methods which provide a statistical 95% level of confidence that the standard has or has not been reached or exceeded, or that a statistically significant change in the concentration has occurred. The GWPR&S also states that if there are not enough data for a statistical analysis, the Secretary may require more sampling or to consider the existing results as an indication of whether a preventative action limit or enforcement standard has been met or exceeded. In general, it is the discretion of Agency programs whether to rely on a single result or the raw data in determining whether a groundwater standard has been met or exceeded.

In this case, a review of the 2010 – 2014 groundwater quality data from the downgradient monitoring wells shows that, for Field 40A, every nitrite/nitrate result was at or below enforcement standards, and all chloride and total dissolved solid results were below preventative action limits. A statistical analysis of the 2010 – 2014 downgradient nitrite/nitrate results indicate that, with 95% confidence, the true mean is within a range of 1.74 mg/L to 2.78 mg/L, which is below the preventative action limit of 5.0 mg/L. That said, the results do show that nitrite/nitrate concentrations are steadily increasing in downgradient monitoring well MW-403. For Fields 75A and 99A, it is clear that no groundwater standards have been exceeded because every nitrite/nitrate, chloride and total dissolved solid result was below preventative action limits (and thus enforcement standards).

Because many months have passed since the submittal of the February 25, 2015 water quality evaluation and subsequent Agency review, analysis and preparation of the August 2015 Fact Sheet, the 2015 groundwater water quality data have been added to the data set. For Field 40A, the water quality data from 2015 is consistent with previous data, with all sodium results above the maximum increase allowed as an indicator parameter. For Field 40A with 95% confidence, the true mean for nitrite/nitrate is within a range of 1.99 mg/L to 3.09 mg/L, which is below the preventative action limit of 5.0 mg/L. For Fields 75A and 99A, the 2015 results were consistent with previous year's results with no exceedances of any groundwater preventative action limit or enforcement standard. The 2015 data has been incorporated into the December 2015 revised Fact Sheet.

With regard to the Vermont Water Quality Standards, the use of a mean value is specified for determining compliance with certain lake criteria but not identified as a means for determining compliance with the nutrient criteria of Class B waters. However, according to the Agency's Watershed Management Division, if a number of samples were collected at or near low median monthly flow conditions, then the use of a mean value would be appropriate in determining compliance with the nutrient criteria of the Water Quality Standards. Unlike the contaminants in Appendix C of the Water Quality Standards, a single nitrate or total phosphorus concentration above standards is not going to have an immediate effect on the aquatic biota.

A first glance of the stream results from 2010 – 2014 indicates that some individual total phosphorus results from both Cold Brook and Flagg Brook appear to exceed the numeric standard for a small high gradient stream in Table 5 of the Water Quality Standards, although neither stream truly fits that category (Cold Brook is really a high-low gradient stream for which no criteria has been developed, and Flagg Brook doesn't

have the biology of a small high gradient stream). These apparent exceedances occurred both upstream and downstream of the discharges. However, since the total phosphorus criteria in Table 5 of the Water Quality Standards are based on concentrations at low median monthly flow, compliance cannot be determined without using linear regression for reported concentrations on any sampling date in which stream flows exceeded low median monthly flow. An evaluation of the water quality data, including the 2015 results, by the Watershed Management Division concluded that Water Quality Standards were met even though some of the field measurement values were erroneous and that a couple of lab reporting or sample labeling errors may have occurred (e.g. reversed total phosphorus and total dissolved phosphorus results).

The Agency generally does not include all the raw data in the Fact Sheet (the comment said permit) due to the sheer volume of the results. A Fact Sheet is a summation of monitoring results and compliance record over the previous permit period. The August 2015 revised Fact Sheet has been revised to include all the 2015 data in the 2010 - 2014 disposal and water quality summaries, now incorporated into the December 2015 revised Fact Sheet. All of the laboratory results are available to the public upon request.

Increase Monitoring: The Agency agrees that additional monitoring is necessary. The permit requires a significant increase in groundwater and surface water sampling, especially during summer low flow season. The sampling locations will not be rotated because the Agency wants Cabot to maximize disposal on the fields where the stream low median monthly flow to daily disposal limit ratio is at or close to the minimum required 10:1 dilution ratio to simulate a worse-case scenario. The permit requires Cabot to submit a revised quality assurance/quality control monitoring plan to the Agency for review and approval in accordance with the increase groundwater and surface water sampling requirements in the permit.

Storage Capacity: It appears that the commenter is mixing up the requirements for the spraying of polished permeate in the sprayfield and the land application of process wastewater on approved agricultural fields (the permit conditions have been renumbered to eliminate duplication of condition numbers). For the polished permeate, there are three storage lagoons available for storage when any of the conditions in Part I, Condition D2 cannot be met. For the washwater, the permit does not have requirements for additional storage, although the Agency acknowledges that additional storage may be necessary given the new restrictions on land application during periods of heavy rainfall events or field saturation.

In accordance with Part II, Condition D3 (now I3) of the permit, Cabot Creamery is required to have 120% of the farm area necessary for disposal of their washwater in each season. The available acreage listed in the table in Condition I3 shows that Cabot has significantly more acreage available for land application during each season than what is required, which is important given that a notable portion of the available acreage consists of well-verified fields where groundwater depths have to be measured and complied with before land application occurs.

Compliance with Groundwater Rules: The Johnson Company has conducted groundwater and surface water sampling for Cabot Creamery for many years. In their cover letters with the laboratory results, they have noted any exceedance of preventative action limits and/or enforcement standards for the groundwater results.

The Agency has not required action from Cabot every time a lab result has been received with a reported concentration above preventative action limits or enforcement standards. It is the Agency's practice not to rely on one result in determining compliance because of false positives such as lab notation errors or poor sampling methods, unless the exceedance is for a contaminant that may pose an immediate threat to public health and safety, such as an exceedance of e-coli in a stream where swimming takes place.

The Johnson Company submitted a water quality evaluation to the Agency on February 25, 2015. This evaluation was required as part of a complete application for permit renewal. In the evaluation, the Johnson Company noted that nitrates in monitoring well MW-S-3 exceeded groundwater enforcement standards from February 2010 through September 2011, and that nitrates were detected above preventative action limits in monitoring well MW-403 on seven occasions from June 2013 through September 2014. As part of the application review process, the Agency conducted its own water quality evaluation and brought to The Johnson Company and Cabot's attention that sodium had also exceeded the GWPR&S maximum acceptable change as an indicator parameter. The Agency requested that Cabot provide an assessment of whether any water supplies could potentially be impacted by the elevated nitrate or sodium concentrations in the groundwater downgradient of Field 40A, and if so, what measures would be taken to assure that drinking water quality would not be impacted. The Johnson Company responded to the Agency's concerns in an April 27, 2015 letter and a site visit was conducted with Agency personnel on May 18, 2015. However, because of the upward trend in nitrate concentrations and the exceedances of the sodium acceptable change, the Agency is removing Field 40A from the list of authorized fields for the land application of washwater in conformance with the GWPR&S.

Public Trust Doctrine: The GWPR&S are currently undergoing an extensive rule review and revision process. The proposed GWPR&S contain a new chapter devoted to public trust of groundwater resources. Once these Rules have been finalize and adopted, the Agency will be required to make positive findings that the Presumption of Compliance standards in the GWPR&S are met before we can issue any subsequent indirect discharge permits to Cabot Creamery. Given the significant increase in groundwater and surface water monitoring being required by this permit coupled with more process water analyses, the Agency will have much more information available to make that determination when the permit expires.

TMDL: The draft indirect discharge permit is not authorizing an increase in nutrient loading in the Lake Champlain watershed because the total volume of wastewater authorized for disposal under the indirect discharge permit has not increased. The addition of a few more fields simply provides Cabot Creamery with alternative disposal locations.

The proposed TMDL only applies to point and non-point discharges regulated by NPDES permits. For non-point sources, this includes stormwater and concentrated animals feeding operations (CAFO) discharge permits. Indirect discharge permits are not NPDES permits, therefore indirect discharge permittees are not subject to wasteload allocations. In addition, the Indirect Discharge Program is not a federally delegated program.

Larry Gaudette Comments:

It is my personal opinion that the "Cabot Creamery" should be made to operate under the same rules as the farmers in the State of Vermont in regards to the disposal of waste and should be closely monitored to insure that those guidelines are strictly adhered too. I'm a native Vermonter who has lived here for 65 of my 68 years, 3 of which were spent on military assignments outside of Vermont. I'm a husband, father and grandfather that would like to see Vermont and Lake Champlain back to a state of health that will make it pleasant for my family to enjoy the state for all of its beauty. One of my grandsons swam in Niquettes Bay, swallowed a little water, next day had stomach cramps! A friend of mine was eradicating some Eurasian milfoil that had grown behind his boat which is docked in Malletts Bay, swallowed a little water, shortly after became nauseous, chilled and developed a 103 degree fever which lasted overnight. Is this the way we want Lake Champlain to be? I hope not! I am also a hunter, fisherman and sportsman that enjoys the outdoors and the lake so I'm begging you to do all that you

can to clean up Lake Champlain, if that means having to apply for discharge permits annually so be it!

Agency Response:

The Agency agrees. It is also our desire to see Lake Champlain restored to a clean, healthy body of water that people can enjoy. In response to the public input associated with this permitting process, Cabot is taking significant steps toward re-evaluating their disposal practices with the input of stakeholders who are dedicated to improving the quality of Vermont's waters. This public sentiment has also made the Agency re-evaluate the Cabot draft permit as written, resulting in a number of additional conditions, restrictions and limitations to the previous permit to further reduce the likelihood of any impacts to surface water in the same manner that farmers are being asked to do their part to eliminate the impairment of surface water.

Pat Sagui Comments:

The Composting Association of Vermont's interest in Cabot's indirect discharge permit is tied to our statewide Soil Policy Project. We ask the ANR to consider reviewing this permit through the lens of soil health.

Act 64 is also asking us to 'up our game' regarding water quality and one of the best, proven tools we have to do that is increasing the land's capacity to store water.

For every 1% increase in organic matter, one acre can store an additional ~20,000 gal.

If land application of Cabot wastewater is to continue, we would like to see the permit provide specific soil health benchmarks. These recommendations can also respond to permit enforceability concerns others have raised.

CAV recommends adding a soil health regimen for all receiving land that would include:

- Assessment of current infiltration rates, storage capacity, and biological activity essential for breaking down nutrients and chemicals in the wastewater.
- Cabot working with stakeholders and soil scientists to establish a soil health standard, with more frequent monitoring and testing, until we know more about how the land is doing the job its being asked to do, especially those soils that have been in the spray program a long time.

It is our understanding that the composition of the wastewater has changed over time; that its fertilizer value is variable. This raises a couple questions we ask the ANR to consider, again through the lens of soil health:

- Should the permit include different requirements depending on the content of the waste water?
- If significant volumes of waste water no longer qualify as a 'soil amendment' what changes need to be made to the permit?

CAV could link Cabot to experts in the use of compost-based filters used elsewhere to treat dairy processing wastewater, and to assess the options for using the soil more effectively to store and filter wastewater.

In considering what is possible, we ask the ANR to consider the plight of the salmon industry in Western Washington state 15 years ago: At the time, the salmon fishery was in steep decline. It was largely saved from collapse by restoring and enhancing soil function throughout the Puget Sound watershed. Healthy soil will give you clean water. (see Soils for Salmon.org)

Agency Response:

Soil Testing: The permit has been revised to include soil testing of fields that have been used for land application for a number of years to determined long-term impacts to the soils. If testing indicates that infiltration is now inhibited or that the soil is no longer able to retain nutrients for plant uptake, then the field will be removed from the approved list of land application sites.

Soil Health Standard: Cabot is now working with stakeholders to evaluate treatment and/or disposal alternatives, but the development of a soil health standard would also be beneficial for this and other similar indirect discharges.

Content of Wastewater: The washwater still contains nutrients such as nitrogen and phosphorus that makes it desirable as a fertilizer amendment; therefore no special conditions have been added to the permit. If the washwater had no redeeming value as a fertilizer amendment, an indirect discharge permit could not be issued for the land application of it.

Soils for Salmon: The Soils for Salmon website provides good information but it is primarily for stormwater management.

Sylvia Knight Comments:

As an advocate for Earth Community here in Vermont, I want to express my whole-hearted support for the comments submitted by James Ehlers of Lake Champlain International, and for the recommendations he has put forth to protect Vermont's waters, a public trust resource.

How can the Agency not see the roaring disconnect between this permit and crucial, challenging, ongoing efforts to deal with the new TMDL for the Lake Champlain watershed? How does this permit and its attendant processes comply with the Vermont's Clean Water Act so hard-won in our legislature? What kind of precedent does it create for the complex rule- making required for VAAFM?

We find ourselves in a time where old paradigms of "what we can get away with" are not useful and even dangerous, and new respect for the land and water are needed to heal the land and waters of Vermont.

Will the Agency seriously regard and adopt Mr. Ehler's recommendations as a pathway to a more respectful relationship between Cabot/Agrimark and the land and waters they inhabit, as residents of the Champlain Basin?

Agency Response:

The proposed TMDL only applies to point and non-point discharges regulated by NPDES permits. Indirect discharge permits are not NPDES permits, therefore indirect discharge permittees are not subject to the terms of the recently passed Clean Water Act. That said, the Indirect Discharge Program fully supports the efforts being made by many parties to clean up Lake Champlain. This permit authorizes land application of wastewater over a wide area, dispersing the waste on fields where nutrients can be taken up by plants rather than being discharged via a pipe into a single receiving stream where Water Quality Standards may not be achieved.

Many additional requirements have been added to this permit to assure that Water Quality Standards in the various receiving streams will be met, and therefore protecting Lake Champlain and other basins.

Dave Palumbo Comments:

I want Vermont's ANR to stop permitting the spreading of industrial dairy waste on fields.

Agency Response:

At the present time, Cabot Creamery has no other sustainable disposal options. However, Cabot Creamery is now an active party with other interested stakeholders to evaluate their current disposal practices. The stakeholders group will evaluate the feasibility of other treatment and/or disposal options.

ACTIONS TAKEN AS A RESULT OF PUBLIC COMMENT:

After consideration of all the public comments, the Agency is issuing an indirect discharge permit renewal to Cabot Creamery. Major changes in the permit include the addition of soil sampling at 30 fields, an increase in stream sampling from 2 to 15 streams plus the Winooski River, an increase in groundwater sampling, and prohibition of land application during heavy rain events.

Specific changes made to the draft indirect discharge permit that was placed on public notice are as follows:

Part I:

- The descriptions on page 2 have been incorporated into the Nature of Indirect Discharge sections in Part I and Part II and the previous page 2 has been deleted.
- The low median monthly flow of the Winooski River has been revised to reflect recent changes in flow data, resulting in a new dilution ratio of 60 to 1.
- Condition D5 has been revised to include verification of the integrity of the polished permeate holding ponds as part of the annual inspection.
- Condition E1 has been changed to require sampling and analysis in accordance with the April 2015 QA/QC Plan, as revised and approved, and the conditions of the permit.
- Condition E5(A) has been revised to require groundwater sampling in May, August and September rather than in June, August and September to be consistent with other groundwater monitoring requirements in the permit.
- Condition E5(B) has been changed to require groundwater level measurements each day prior to spraying of polished permeate if groundwater levels are within 3 feet of ground surface, instead of weekly.
- Condition E7 has been revised to require submittal of a revised QA/QC Plan by June 30, 2016, sampling of the Winooski River in August and September each year, conduct a biological site assessment of the Winooski River by August 1,

2016, and, if warranted, conduct biological monitoring in August-September 2016.

Part II:

- Conditions have been renumbered in Part II to eliminate duplication of condition numbers throughout the permit.
- The summaries in Condition A1 (now F1) have been incorporated into Condition B2 (now G2), Nature of Indirect Discharge.
- Condition A5 (now F5) has been expanded to include the removal of fields from the land application program that exhibit clogging or excessive leaching of cations to groundwater.
- Condition B2 (now G2) has been revised to make it clear that the maximum application of 0.5 inches per year is for well verified year-round fields.
- Condition D1 (now I1) has been renamed Land Application Prohibitions and has been broken out to specifically prohibit land application under 7 circumstances, including during heavy rain events.
- Condition D2 (now I2) has been broken out into annual limits and daily limits.
- Condition D3 (now I3) has been revised to reflect the addition of new fields and the removal of Field 40A from the land application program.
- Condition D5 (now I5) has been changed to require truck driver training as certified applicators.
- Condition D6 (now I6) has been revised to specify the acceptable hours for land application during the winter months.
- Condition D7 (now I7) has been revised to acknowledge the possibility of other disposal options.
- Condition D11 (now I11) has been revised to allow the drivers to fill out a comprehensive one-page checklist instead of a logbook entry for every load, providing that a Driver Checklist for Approved Fields form is approved by the Agency prior to use and that the forms are collected at the end of each day, scanned and made available electronically upon request.
- Condition D13 (now I13) has been expanded to include an annual report identifying the fields and manure pits that have been added or removed from the disposal program.
- Condition D14 (now I14) has been revised to reflect the submittal of a list of chemicals used by the permittee.
- Condition I15 has been added which requires the submittal of an alternatives analysis by December 31, 2016.

- Condition I16 has been added which requires Cabot to apply for a permit amendment by June 30, 2017 for approval for any new treatment and/or disposal option.
- Condition E1 (now J1) has been changed to require sampling and analysis in accordance with the April 2015 QA/QC Plan, as revised and approved, and the conditions of the permit.
- Condition E2 (now J2) has been replaced with a requirement that the permittee submit a revised QA/QC Plan to the Agency by June 30, 2016 to increase groundwater and receiving stream monitoring at a minimum of 15 fields that are regularly used for land application, that exhibit signs of soil clogging or leaching, or where the receiving stream dilution ratio is at or near the minimum 10:1 dilution ratio. This condition also includes provisions for biological site assessments and biological monitoring, and specifies a sequence for land application on fields that will be monitored.
- Condition E4 (now J4) has been revised to require groundwater monitoring in May, August and September instead of in February, May and August to be consistent with other groundwater and surface water monitoring requirements, and to eliminate February monitoring when some monitoring wells are typically frozen.
- Condition E5 (now J5) has been revised to reference an approved QA/QC Plan, reduces monitoring to August and September, and adds turbidity and conductivity to the parameter list.
- Condition E7 (now J7) has been replaced with new requirements that the permittee submit a proposed list of fields for soil sampling by March 31, 2016, submit soil sampling results from a minimum of 30 fields for a revised set of parameters by June 30, 2016, and submit an evaluation by a soil specialist of field conditions by June 30, 2016.
- Condition E9 (now J9) now requires washwater sampling to be conducted in December 2016, June 2018 and December 2019 and the results of the toxic scan analyses to be submitted within 90 days of sampling.

Part III:

- Conditions have been renumbered in Part III to eliminate duplication of condition numbers throughout the permit.
- Condition A4 (now K4) has been expanded to state that the Agency reserves the right to reopen and amend the permit to include additional monitoring requirements based on the results of monitoring required by the permit.

- Condition A8 (now K8) has been renamed Laboratory Performance and the date of the QA/QC Plan has been changed to April 2015 or as revised.

Attachments:

- Field 40A has been removed from the approved land application list.
- Fields 154A – 156D have been added to the approved land application list.
- Manure pit 671 X1 has been added to the approved list in Attachment B.
- Field 596 Z3 has been added to the approved Z-field list in Attachment C.
- The receiving stream information for Field 75A has been revised to reflect an indirect discharge to Cold Brook rather than to the Winooski River.

FINAL ACTION APPEAL:

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Court within 30 days of the date of the decision. The appellant must attach the applicable filing fee to the Notice of Appeal, made payable to the State of Vermont.

The Notice of Appeal must specify the parties making the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Court; and must be signed by the appellant or their attorney. In addition, the appeal must give the address or location and description of the property, project or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal.

The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings.

For further information, see the Vermont Rules for Environmental Court Proceedings, available online at www.vermontjudiciary.org. The address for the Court is Vermont Superior Court – Environmental Division, 32 Cherry Street, Suite 303, Burlington, VT 05401 (Tel. # 802-951-1740).

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Summary of Cleaning SOPs

Trucks

Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail. Follow manual parts cleaning procedure. Rinse with cold water.

Pre-rinse: Using the post-rinse water from the previous CIP.

Wash: Alkaline wash with Ultra 1030 with chlorine. Ultra 1030 concentration is 0.4-0.6 ozs/gal and chlorine concentration is 40-180 ppm.

Post-rinse: With fresh water. Post-rinse water is held in tank and used for next CIP pre-rinse.

Sanitizer: Sustain No. 464. Concentration is 90-140 ppm. When finished, push sanitizer through the line with air to empty the pipes.

Cheddar Cookers

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail. Manually brush under the top, lid, ports, and exterior last. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

Pre-rinse:

Wash: Alkaline wash with chlorine added. Ultra 1030 concentration is 0.8-1.2 ozs/gal and chlorine concentration is 40-180 ppm. Run for 10-20 minutes at 155-170°F.

Post-rinse: Fresh water back to caustic tank until pH drops below 8.5 and chlorine is below 1 ppm. Move to Weekly Acid Wash step.

Weekly Acid Wash: MPA No. 168 concentration 0.3-0.8 ozs/gal. 10-20 minutes at 135-165°F.

Post-rinse: With fresh water until pH is above 4.5.

Sanitizer: Hydroxysan No. 480 concentration 1 oz per 6 gallons. 2 minute contact time.

Curd Line- Cheddar CIP

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail. Clean outside and valves with Score No. 312 mixture. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

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Alkaline Wash: Ultra 1030 with chlorine added. Ultra 1030 concentration is 0.8-1.2 ozs/gal and chlorine concentration is 40-180 ppm. Run for 10-20 minutes at 155-170°F.

Post-rinse: Fresh water back to caustic tank until pH drops below 8.5 and chlorine is below 1 ppm. Move to Weekly Acid Wash step.

Acid Wash: MPA No. 168 concentration 0.3-0.8 ozs/gal. 10-20 minutes at 135-165°F.

Post-rinse: With fresh water until pH is above 4.5.

Sanitizer: Sustain No. 464 concentration 1 oz per 6 gallons. When finished, push sanitizer through the line with air to empty the pipes.

Cheese Tables

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail and follow manual parts cleaning procedures. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

Alkaline Wash: Ultra 1030 with chlorine added. Ultra 1030 concentration is 0.7-0.9 ozs/gal and chlorine concentration is 40-180 ppm. Run for 10-20 minutes at 155-170°F.

Post-rinse: Fresh water back to caustic tank until pH drops below 8.5 and chlorine is below 1 ppm. Move to Weekly Acid Wash step.

Acid Wash: MPA No. 168 concentration 0.7-0.9 ozs/gal. 10-20 minutes at 135-165°F.

Post-rinse: With fresh water until pH is above 4.5.

Sanitizer: Sustain No. 464 concentration 1 oz per 6 gallons. When finished, push sanitizer through the line with air to empty the pipes.

Silos

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail and follow manual parts cleaning procedures. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

Alkaline Wash: Ultra 1030 with chlorine added. Ultra 1030 concentration is 0.8-1.2 ozs/gal and chlorine concentration is 40-180 ppm. Run for 10-20 minutes at 155-170°F.

Post-rinse: Fresh water back to caustic tank until pH drops below 8.5 and chlorine is below 1 ppm. Move to Weekly Acid Wash step.

Acid Wash: MPA No. 168 concentration 0.3-0.8 ozs/gal. 10-20 minutes at 135-165°F.

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Post-rinse: With fresh water until pH is above 4.5.

Sanitizer: Sustain No. 464 concentration 1 oz per 6 gallons. When finished, push sanitizer through the line with air to empty the pipes.

HTST

Wash #1: Establish circulation and heat water to 170-180°F. Add 5 gallons caustic at 0.6-0.9% alkalinity. Add 42 ounces of Defoamer No. 553. Recirculate for 10-30 minutes at 170-185°F.

Rinse: Fresh water until pH is below 8.5.

Wash #2: Establish circulation and heat water to 170-180°F and add 12 gallons caustic at 1.2-1.6% alkalinity. Add 42 ounces Defoamer No. 553. Recirculate for 45-90 minutes at 170-180°F.

Post-rinse: Fresh water until pH is below 8.5.

Wash #3: Establish circulation and heat water to 160-180°F. Add 4 gallons of MPA No. 168 for 1.2-1.6 oz/gal and circulate for 15-45 minutes at 160-180°F. Check pH after 10 minutes and add MPA No. 168 if it is above 1.5.

Post-rinse: Fresh water until pH is greater than 6.0 and temperature is below 75°F.

Optional Start-up Sanitizer: Add 60 ounces of Sustain slowly to the balance tank while post-rinsing to the vats.

Chlorinated Alkaline Foaming: Enrich No. 299 2 ozs/gal in 125°F water.

Post-rinse: Fresh water until chemicals are removed.

Acid Foaming: Once per week. Cling No. 153 at 2 ozs/gal.

Whey Silo

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail and follow manual parts cleaning procedures. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

Alkaline Wash: Ultra 1030 with chlorine added. Ultra 1030 concentration is 0.8-1.2 ozs/gal and chlorine concentration is 40-180 ppm. Run for 10-20 minutes at 155-170°F.

Post-rinse: Fresh water back to caustic tank until pH drops below 8.5 and chlorine is below 1 ppm.

Acid Wash: MPA No. 168 concentration 0.3-0.8 ozs/gal. 10-20 minutes at 135-165°F.

Post-rinse: With fresh water until pH is above 4.5.

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Sanitizer: Sustain No. 464 concentration 1 oz per 6 gallons. When finished, push sanitizer through the line with air to empty the pipes.

General Plant Environmentals

CIP Preparation: Prepare a solution of Score No. 312 at 1 oz. per 4 gallons of 125°F water in a clean pail and follow manual parts cleaning procedures. Rinse with cold water. Any parts should be placed into a sanitize solution of 1 oz of Iodosan No. 485 per 4 gallons of water (12.5-25 ppm).

Chlorinated Alkaline Foaming: Enrich No. 299 concentration target 2.5-5 oz/gal in <125°F water. Chlorine target is 40-180 ppm.

Post-rinse: Rinse until bubbles are no longer visible and chlorine level is less than 1 ppm.

Acid Foaming: Cling No. 153 2.5-5 oz/gal in <125°F water.

Post-rinse: Rinse with fresh water.

Sanitizing: Chlorine 200-300 ppm.

Floor Scrubbers

Wash: Alkaline degreaser Grease X No.367 at 2-4 ounces per gallon. Add 1 ounce of MultiQuat No.455 to each 2 gallons. This should provide 300-600 PPM of active quat.

Post Rinse: Use the floor scrubber to remove as much of the alkaline wash residue as possible.

Wash: Sterilex Treatment. Sterilex Ultra Powder at 6-10 ounces per gallon.

Dry Footbath

Sterilex Ultra Powder used straight from container into dry footbath.

Floor Foamers

Sanitizing**: Multiquat No. 455** is add by aspiration: 1.0 – 3.0 ozs per 4 gallons of water.

Cut & Wrap: Sanitizing

Sanitizing food contact surfaces: Multiquat No. 455 target concentration is 1.0 ozs (minimum) to 4 gallons of solution.

Sanitizing non-food contact surfaces: Multiquat No. 455 target concentration is 1.4 – 3.0 ozs to 4 gallons of solution.

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Cut & Wrap: Line Equipment:

Prep equipment by preparing a solution of Score No. 312 at 2 - 4 ozs per 1 gallon of (warm - hot) water in a clean pail. Manually by brush washing all parts interiors and exteriors with the Score No. 312 solution.

Rinse with cold water until all Score No. 312 wash solution is removed. Follow with a rinse with sanitizing solution.

Pre-wash all equipment from 3-Way Block Cutter to Infeed Belt.

Foam all pre-washed equipment with Enrich No. 299 foam exteriors including all connecting ancillary equipment connected to the system. 2-4 ozs per 1 gallon. Rollers, guide rails, and conveyors are in C.O.P. tank or soaking tank with Enrich No.299 at 2 - 4 ozs ounces per 1 gallon. Soak or mechanically agitate. Do not exceed 145°.

Manual and soaking by preparing a solution of Score No. 312 at 2 - 4 ozs per gallon of (warm - hot) water in a clean pail. Manually by brush (White) washing all food contact surfaces with the Score No. 312 solution.

Rinse all the foamed or soaked equipment thoroughly.

Monthly or as needed: Foam all pre-washed equipment with Cling No. 153 foam with including all connected ancillary equipment. 2-4 ozs per 1 gallon.

Rinse all the foamed equipment thoroughly.

Sterilex Treatment: Sterilex Ultra Powder 6-10 ounces per gallon.

Rinse the contact surfaces just before sanitizing for start-up.

Sanitize with: Non-Contact surfaces first with Multiquat No. 455 1.0 to 3.0 Oz. per 4 gallons, 400-900 ppm. Contact Surfaces after everything else is completed, with Multiquat No. 455 1.0 to 3.0 Oz. per 4 gallons, 150-400 ppm

Use sanitary plant air to blow off all water from equipment surfaces.

Cut & Wrap: COP Tank:

Prep a solution of Score No. 312 at 2 - 4 ozs per 1 gallon of (warm - hot) water in a clean pail. Follow manual parts cleaning procedure.

Alkaline Degreasing Wash: Grease X No.367 concentration target is: 180-360 2 – 4 ozs/gal at 140°Ffor 15 minutes.

Post Rinse: Drain the COP Vat, rinse parts with a fresh water hose and drain. Refill COP Vat.

Sanitizing: Multiquat No. 455 is add 40 ounces, 1.0 – 3.0 ozs to 4 gallons 150 - 400 PPM.

Product Name	Ingredients	Chemical Family/ Dilution Rate
Eclipse No. 285	Sodium Hydroxide; Tetrasodium EDTA, Proprietary	Alkaline Cleaner 2.5 ounces per gallon 7 days/week
Defoamer No. 553	Exthoxylated Propoxylated Alcohols, C6-10; Sodium Cumenesulfonate; Poly(oxy-1,2-ethanediyl),alpha-(nonylphenyl)-omega-hydroxy-,	Surfactant Solution 2 ounces per 25 gallons 6 days/week
Enrich No. 299	Sodium hydroxide; Sodium Hypochlorite	Chlorinated Alkaline Cleaner 3 – 5 ounces per gallon 6 days/week
Enzyterge No. 400	Ethoxylated Alcohols, C9-11; Dimethyldodecylamine Oxide; Triethanolamine; sodium bisulfite; Protease Enzyme Protein	Not Listed in MSDS 0.2 – 0.5 ounces per gallon 6 days/week
Hydriflux NP No. 366	Sodium hydroxide, Tetrasodium EDTA	Alkaline Cleaner 0.3 - 0.5 ounces per gallon 6 days/week
Hydrisoak No. 180	Citric Acid; Lactic Acid; C(10-16)-Alkylbenzenesulfonic Acid; Sulfuric Acid	Acid Cleaner 0.3 - 0.5 ounces per gallon 6 days/week
Multiquat No. 455	Alkyl (50%C14,40%C12,10%C16) dimethylbenzylammonium chloride; Octyl decyl dimethyl ammonium chloride; Ethyl Alcohol; Didecyl dimethyl ammonium chloride; Dioctyl dimethyl ammonium chloride	Sanitizer/Disinfectant 1.5 ounces per gallon 6 days/week
MPA No. 168	Nitric Acid, Phosphoric Acid	Acid Cleaner 0.5 – 0.75 ounces per gallon 6 days/week
Orbit No. 363	Sodium Lauryl Ether Sulfate; Denatured Ethyl Alcohol; Isopropyl Alcohol; Sodium Xylene Sulfonate	Detergent 1 ounce per gallon 6 days/week
Score No. 312	Sodium carbonate; Sodium Dodecylbenzene Sulfonate; Tetrasodium EDTA; Sodium Dichloroisocyanurate; Poly(oxy-1,2-ethanediyl), alpha-(nonylphenyl)-omega-hydroxy-,	Chlorinated Alkaline Cleaner 1 ounce per gallon 6 days/week
Sustain No. 464	Hydrogen Peroxide; Nitric Acid; Acetic Acid; Peracetic Acid; Water	Not Listed in MSDS 0.167 – 0.2 ounces per gallon 6 days/week

Product Name	Ingredients	Chemical Family/ Dilution Rate
Hydroxysan PA No. 480	Hydrogen Peroxide; Acetic Acid; Peracetic Acid; Water	Sanitizer/Disinfectant 1 ounce per 10 gallons 6 days/week
Chlor Bac No. 416	Sodium Sulfate; Sodium Dichloro-S-Triazinetrione Dihydrate; Sodium Tripolyphosphate	Inorganic Cleaner 1 ounce per 10 gallons 7 days/week
Alpet	Isopropyl Alcohol	Hand Sanitizer 7 days/week
Phosphoric Acid	Phosphoric Acid	Acid Cleaner 6 days/week 0.03 ounces per gallon 6 days/week
Sodium Hypochlorite	Sodium Hypochlorite	Sanitizer 1 ounce per 3 gallons 7 days/week
Caustic Soda 50 Chelate 2FCC	Sodium hydroxide	Alkaline Cleaner 0.03 ounces per gallon 6 days/week
Sterilex Ultra Powder	Sodium carbonate, sodium percarbonate, n-alkyl (C1495%,C123%,C162%) dimethylbenzylammonium chloride, EDTA sodium salt	Alkaline Disinfectant 4 ounces per gallon Sprinkled when used dry 1 day/week
D-Scale No. 556	Tetrasodium EDTA, Sodium Hydroxite	Not listed on MSDS 4 ounces per 100 gallons 7 day/week
Detbuild No. 394	Potassium 4-Dodecylbenzene Sulfonate, Triethanolamine Dodecylbenzene Sulfonate, Triethanolamine	Not listed on MSDS .035 ounces per gallon 7 days/week
Ultra 1030	Sodium Hydroxide	Alkaline Cleaner 0.3 to 0.8 ounces per gallon 7 days/week
Traffic Aid No. 315	Urea	Amide Blend sprinkled on the floor in high traffic areas
Security Floor Treatment	Sodium Carbonate peroxyhydrate, sodium dichloroisocyanuarte dihydrite	Alkalai-Peroxide Powder in dry footbaths as needed
Sentinel	Phosphoric Acid, Alkyl dimethyl benzyl ammonium chloride, Octly decyl dimethyl ammonium chloride, poly alpha omega hydroxy, ethyl alcohol, didecyl dimethyl ammonium, dioctyl dimethyl ammonium	Acid Sanitizer 1 to 2 ounces per 4 gallons of water used daily

VERMONT

State of Vermont
Department of Health
Division of Health Surveillance
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Agency of Human Services

November 13, 2015

Bryan Harrington
ANR – DEC – Drinking Water & Groundwater Protection Division
Indirect Discharge Program
1 National Life Drive, Main 2
Montpelier VT 05620-3521

Dear Mr. Harrington,

The Vermont Department of Health was contacted in 2008 by a concerned resident from Cabot and again in 2010 by the Vermont Agency of Natural Resources, Waste Water Management Division regarding public comments related to concerns about elevated rates of cancer in the community and the permitting of Agri-Mark Inc. (Cabot Creamery) to dispose of dairy processing wastewater generated from their production processes.

You have indicated that public comments during this current permit cycle continue to reflect concerns about elevated rates of cancer as well as new concerns about amyotrophic lateral sclerosis (ALS) in the communities and I hope I can address those concerns.

The discharge for this current permit cycle describes non-sewage and non-pathogenic wastewater that are applied on fields that are approved in the application. The disposal occurs in 32 communities in Washington, Caledonia, Orleans and Lamoille counties and includes the towns of: Albany, Barnet, Barton, Brookfield, Brownington, Cabot, Calais, Craftsbury, Danville, East Montpelier, Elmore, Glover, Greensboro, Hardwick, Irasburg, Lyndon, Marshfield, Morristown, Peacham, Plainfield, Randolph, St. Johnsbury, Sheffield, Stannard, Walden, Wheelock, and Wolcott. Land application is being proposed in Stowe.

In 2008 and again in 2010 the Vermont Cancer Registry looked at incidence (number of new cases) and did not see an elevated number of cancers diagnosed in Washington County. The most recent statistics 2008-2012 are consistent with what was observed at that time, and elevated rates of cancer are not observed in Washington, Caledonia, Orleans, or Lamoille Counties.

ALS is not a reportable disease; however, we looked at mortality (number of deaths) from ALS between 2003-2012. ALS has a poor prognosis, and mortality is a good estimate for the burden of disease in the community. Elevated mortality rates were not observed in Washington, Caledonia, Orleans, or Lamoille Counties, compared to the Vermont rate.

Sincerely,

Jennifer Kachajian

Jennifer Kachajian, MA, MPH
Public Health Analyst III