

APPLICATION FOR A COASTAL ZONE ACT PERMIT

**State of Delaware
Department of Natural Resources & Environmental Control
Office of the Secretary**

May 18, 2017
Processing Plant Expansion
Mountaire Farms of Delaware, Inc.
11416.EA

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Permit Application Instructions

1. Complete all parts of the application. For sections which are not applicable to your project, do not leave blank; present a statement that clearly states why the section is not applicable to your project.
2. Because all applicants' projects are different, this word document template will provide you flexibility for needed space to answer the questions. Please insert additional lines for text where needed for your application. If appropriate, attach extra pages referencing each answer by the corresponding section and question number.
3. Submit eight complete hard copies of the permit application to:

Office of the Secretary
Department of Natural Resources & Environmental Control
State of Delaware
89 Kings Highway
Dover, DE 19901

In addition to the eight hard copies, submit a complete electronic "pdf" copy of the permit application and a copy of the Offset Matrix in Microsoft Word format on cd-rom.

4. Comply, if required, or as requested by the DNREC Secretary, with [7 Delaware Code, Chapter 79, Section 7902](#). If requested, but not completed, your application will not be considered administratively complete until this form is reviewed.
5. Be sure to include your permit application fee of \$3,000; otherwise the application will not be considered administratively complete. Make checks payable to the "State of Delaware."
6. Be advised that the application for a Delaware Coastal Zone Act Permit is a public document, which may be displayed at DNREC offices, public libraries, and the web, among others. If this application requires you to place confidential information or data in the application to make it administratively complete, note the Delaware Freedom of Information Act ([29 Delaware Code, Chapter 100](#)) and [DNREC's Freedom of Information Act Regulation](#), Section 6 (Requests for Confidentiality), for the proper procedure in requesting confidentiality.

Note: This application template was last revised by DNREC on January 30, 2008. Please discard any previous versions.

PART 1

CERTIFICATION BY APPLICANT

Under the penalty of perjury pursuant to 11 Delaware Code §1221-1235, I hereby certify that all the information contained in this Delaware Coastal Zone Act Permit Application and in any attachments, is true and complete to the best of my belief.

I hereby acknowledge that any falsification or withholding of information will be grounds for denial of a Coastal Zone Permit.

I also hereby acknowledge that all information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Paul Downes

PAUL DOWNES

Print Name of Applicant

Paul Downes

Signature of Applicant

PRESIDENT AND CEO

Title

May 18, 2017

Date

PART 2

APPLICANT INFORMATION AND SITE IDENTIFICATION

2.1 Identification of the applicant:

Company Name: Mountaire Farms of Delaware, Inc.
Address: 29005 John J. Williams Highway, Millsboro, DE
Telephone: (302) 934-3092
Fax: (302) 934-3081

2.2 Primary contact: Please list the name, phone number and email of a preferred contact within your company in case the DNREC needs to contact you regarding this permit application.

John Wren, (302) 934-3092, jwren@mountaire.com

2.3 Authorized agent (if any):

Name: Lee J. Beetschen, P.E., DEE, lbeetschen@duffnet.com
Address: 144 S. Governors Avenue
Telephone: (302) 674-9280
Fax: (302) 674-1099

If you have an authorized agent for this permit application process, provide written authorization from client for being the authorized agent.

See Attachment A

2.4 Project property location (street address):

29005 John J. Williams Highway
Millsboro, DE 19966

2.5 In a separate attachment, provide a general map of appropriate scale to clearly show the project site.

See Attachment B

2.6 Is the applicant claiming confidentiality in any section of their application?

No
If yes, see instructions on page 3.

PART 3

PROJECT SUMMARY

The processing plant expansion project will increase production by approximately 18% by adding a third kill line that will include expanding the existing picking room by 5,300 square feet on the south side of the existing processing plant as shown on Attachment B. This expansion will result in an increase in discharge flow from the processing plant from 2.3 million gallons per day (MGD) to 2.4 MGD. Mountaire intends to modify the existing wastewater treatment plant to accommodate the expansion. An explanation follows.

The existing wastewater treatment plant consists of a dissolved air flotation (DAF) unit, an aerobic lagoon, activated sludge, disinfection, and water reuse and aquifer recharge by spray irrigation as shown on Attachments B-1 and B-2. The DAF is shown as Equipment Inventory DA4042 in Attachment B-1. Mountaire will be upgrading the existing wastewater treatment plant to decrease the Total Nitrogen (TN) being applied to cropland as a result of the expansion to below the current levels thereby precluding the need for an offset for land applied nitrogen in the treated wastewater. The upgrade will be a new 150,000 gallon flow equalization basin (FEB) upstream of the existing DAF unit that treats raw wastewater produced from the processing plant facility. The FEB will modulate and make more constant the flow to the DAF over seven (7) days. The relatively constant feed rate to the DAF will increase the overall TN removal by the balance of the wastewater treatment facility. Attachment B-3 shows the current production parameters from the wastewater treatment plant effluent, the expected change in the parameters as a result of the expansion if the current wastewater treatment system were not modified and the reduction in these parameters as a result of the installation of the FEB.

Offsets

The improvements in effluent quality anticipated by the installation of the FEB upstream of the DAF at an increased discharge rate from 2.2 MGD in the 2009 CZA Application to 2.4 MGD in this application follows:

	2009 Mg/l	Lbs/day	Tons/Yr	2017 Mg/l	Lbs/day	Tons/yr	Net Improvement Tons/yr
BOD	11.1	203.7	37.2	7	140	25.6	11.6
TSS	11.1	203.7	37.2	7	140	25.6	11.6
TN	15.6	262	52.2	7	196	35.8	16.4

Mountaire requests that the net improvements in BOD, TSS and TN, 11.6, 11.6 and 16.4 tons per year, respectively, be held in reserve should additional projects be subject to the Delaware Regulations Governing Coastal Zone be necessary.

Total air emissions will increase by 3.0 tons per year by natural gas burned in the existing boilers to provide heat for scalding. This emission measurement required an offset of $1.3 \times 3.0 = 3.9$ tons per year. Mountaire intends to apply 3.9 tons per year from the existing 41 tons per year reserve, resulting in a decrease held in air emissions offset reserve to 37.1 tons per year.

As a matter of air emissions offset reserve history, an application for a Coastal Zone Act permit for the resource recovery plant filed by Mountaire on July 22, 2009 provided evidence of past voluntary environmental improvements and investments made prior to the time of that application. The environmental improvements were created by converting two (2) complex boilers fuels from oil to natural gas. The resulting reduction in complex air emissions was 71 T/year. Mountaire requested that 13.4 tons of the annual 71 ton reduction in air emissions be used as an offset for that resource recovery Coastal Zone Act permit. As stated in the cited application, “the balance of available offset due to change of boiler fuel for two (2) of the three (3) complex boilers described

above is being held in reserve should additional projects subject to Delaware's Regulations Governing Coastal Zone be necessary. This balance was quantified at approximately 58 T/year." Mountaire then used reserve balance to satisfy the offset requirement for a pellet cooler project. This pellet cooler upgrade project, for which a Coastal Zone Application was filed in November, 2015, tapped into that reserve for 17 T/year to provide the offset thereby reducing the available offset to 41 T/year. This beneficial reduction in air emissions is and will be continuous as long as these boilers are in operation.

PART 4

**PROJECT PROPERTY RECORD AND
EVIDENCE OF LOCAL ZONING AND PLANNING APPROVAL**

PROJECT PROPERTY RECORD

4.1 Name and address of project premises owner(s) of record:

Mountaire Corporation
1901 Napa Valley Dr.
Little Rock, AR 72212

4.2 Name and address of project premises equitable owner(s):

Same as above

4.3 Name and address of lessee(s):

NA

4.4 Is the project premises under option by permit applicant?

No

4.5 What is the present zoning of the land for this entire project site?

Heavy Industrial - See Attachment C

PART 5

PROJECT OPERATIONS

5.1 Describe the characteristics of the manufactured product and all the process and/or assembly operations utilized by the proposed project. Include in the description (use attachments if necessary):

- a. the raw materials, intermediate products, by-products and final products and characteristics of each.

The raw materials are broiler chickens. The final products are whole birds and bone-in and boneless wings, breasts, thighs and legs. There will be a 18% increase in the raw materials and final products as a result of this project.

- b. the step-by-step procedures or processes for manufacturing and/or assembling the product(s). Provide a flow diagram to illustrate procedures;

The major unit operations involved in poultry processing are depicted in the flow diagram in Attachment D, which was adapted from EPA Development Document 440/1-75/031-6. Portions of the narrative that follows were derived, with suitable editing, from this EPA document.

Broiler chickens are typically transported to processing plants in cage modules stacked on flatbed trailers. Each cage module can hold about 20 average-size broiler chickens. The cage modules are removed from the transport trailer and tilted using a forklift truck to empty the cage. Alternatively, tilting platforms can be used to empty the cage modules after they have been removed from the transport trailer. When the cage module tilts, the lower side of the cage opens and the birds slide onto a conveyor belt, which moves them into the hanging area inside the plant. In the hanging area, the live birds are hung by their feet on shackles attached to an overhead conveyer system, commonly referred to as the kill line that moves the birds into the killing area.

Manure, feathers and dirt are the major pollutants that accumulate in the receiving area. The hanging area is dry cleaned daily.

As the birds enter the killing area, they are stunned just before killing to facilitate bleeding and minimize bird movement. Slaughtering of broilers is done by an automatic mechanical device which severs the jugular vein. The kill area has high walls on both sides of the conveyor line to collect drained blood. It takes approximately a minute and a

half for the bird to pass through this area. Seventy percent of the bird's blood leaves the carcass during this period.

Great care is taken to ensure the total recovery of the blood, which is then periodically pumped to the Resource Recovery plant for processing into a marketable product. Feathers, dirt, manure and blood are pollutants that may find their way into the killing area sewer.

The defeathering operation consists of four separate steps; scalding, picking, singeing, and washing. After killing, birds are conveyed into a scald tank where the temperature ranges between 124 and 130 degrees. The feather follicles of the bird are relaxed by the scalding operation and thus are easily removed by the mechanical defeathering equipment (pickers). The machines are equipped with rubber fingers attached to rotating drums. The continuous action of the fingers on the birds removes the feathers. A simultaneous water spray assists feather removal. Temperatures and sanitation in the scald tank are controlled by the addition of approximately one quart of water per bird.

Following defeathering, all birds pass through a gas flame where fine hairs and pinfeathers are removed by singeing. The carcass then receives a final wash before moving into the eviscerating area.

Wastewater from the defeathering operation results from:

1. The continuous overflow of scald tank.
2. Final dump of the tank at the end of the operating day.
3. The feather flow away system.
4. Continuous water spray in the defeathering machine.
5. Carcass washing.
6. Wash down of the floors and equipment during cleanup.

Feathers, manure, dirt and blood are flumed in the flow away system to the pretreatment area.

To prevent cross contamination, evisceration is segregated from any of the previous operations. When the birds enter the eviscerating area, their feet are removed by an automatic cutter. The feet are flumed away with the offal. The birds drop from the line and are rehung on a different conveyor line to facilitate removal of the viscera and inspection by USDA.

A final hand picking for pinfeathers follows rehanging. Then the oil gland is removed, the body cavity opened, the eviscera pulled out and exposed and the carcass and entrails are inspected. Giblets (heart, liver and gizzard) are recovered, trimmed, washed and conveyed to the giblet chiller. The inedible viscera is discharged through the offal flow away system. Lungs are removed by vacuum. The head and neck are removed and washed. The eviscerated birds are conveyed to the whole carcass chillers.

Potential pollutants from evisceration include major parts such as feet, heads, viscera, crop, windpipes, lungs and other material including grit, sand, gravel, flesh, fat, grease and blood. This material is transported to the offal flow away system.

The birds leave the conveyor and enter the chiller tank which contains slush ice and cold water. Detention time in the open chilling tank is approximately 45 minutes to achieve a body temperature of 34⁰ F. A continuous overflow of approximately 2 quarts per bird maintains proper temperature and sanitation in the tank. After the birds are removed from the chill tank, whole birds are graded by weight and quality, rehung and excess moisture is allowed to drain off. The giblets are then stuffed into the bird before entering the packing area. Birds are graded for cutup on a separate conveyor system.

Final processing of product involving the disjointing and cutup of poultry into the normal parts such as wings, breasts, and drum sticks. All cutup is done by machine and all deboning is done by hand. The amount of cutup and deboning performed relates directly to the market demand and as a result, the wastewater flows from these operations will vary. It is expected that at least half of the poultry processed at the facility will be cut and deboned as parts, then packaged for end use.

The cutup and deboning area is one of the larger areas in the facility. An overall cleanup occurs during the meal break and between shifts. Relatively large quantities of water are used in cleanup. The cleanup water discharged to the treatment facility contains significant quantities of blood, oil and grease; large solids such as necks, backbones, fat and skin, and a high BOD load.

Two methods are employed in preparing the finished products for market. Whole birds are packaged using the Cry-O-Vac vacuum sealing system. Cutup parts are packaged by hand in Styrofoam trays that are covered with a clear plastic wrap. The plastic wrap is heat shrunk prior to packing the market trays into cardboard shipping cartons. These cartons are then iced for transport to market.

A general light cleanup is performed following each shift and more intensive spot cleanups are made when product spills occur. Although a very small quantity of high quality wastewater is usually generated in the packaging area, at times wastewater can contain large solids including trays, large pieces of product and chunks of fat. The belt sprayers that are used generate only small volumes of low strength wastewater.

All wastewater exits from poultry processing either in the feather or offal flumes. Each of these waste streams separately receives primary screening on a Rotary Screen. The waste stream flows through the 1/8" perforated screens and the captured solids are moved and transported in bulk to Resource Recovery. Approximately 40 percent of the plant output goes through the feather screen with the balance representing the load on the offal screen. The two flows are then combined for secondary screening by a bank of 5 static screens with 20 thousandths of an inch openings. The solids generated by screening are transported to the Resource Recovery plant and the clarified waste stream then proceeds into the wastewater treatment facilities.

- c. the nature of the materials mentioned above in 5.1(a) as to whether or not the materials require special means of storage or handling;

No other special means of storage or handling is required.

- d. list the machinery (new and/or existing) to be utilized by this project;

A kill and picking line will be added.

- e. list any new buildings or other facilities to be utilized;

The existing processing building will undergo a 5,300 square feet expansion to the picking room.

- f. list the size and contents of any anticipated aboveground or underground storage tank systems that may be constructed or utilized in support of facility operations;

A 150,000 gallon flow equalization tank will be added to the pretreatment area.

- g. if this project represents an increase or decrease in production at an already existing facility, what will be the new rate of maximum production?

The new rate of maximum production will be on the order of 21 million pounds live weight kill per week.

- h. if this project represents a totally new facility at a new or existing site, what will be the maximum production rate?

N/A

5.2 Describe daily hours of plant operations and the number of operating shifts.

16 hours per day Monday through Friday

5.3 Provide a site plan of this project with: (See Attachment E)

- a. a north arrow;

- b. a scale of not less than one inch to 200 feet;
- c. identity of the person responsible for the plan, including any licenses and their numbers;
- d. the acreage of the applicant's entire property and acreage of the proposed project;
- e. property lines of entire property;
- f. lines designating the proposed project area for which application is being made, clearly distinguished from present facilities and operating areas (if any);
- g. existing and proposed roads, railroads, parking and loading areas, piers, wharfs, and other transportation facilities;
- h. existing water bodies and wetlands and proposed dredge and fill areas, and;
- i. existing and proposed drainage ways, gas, electric, sewer, water, roads, and other rights-of-way.

5.4 How many acres of land in total are required for this proposed project?

Existing/ currently utilized/ developed land: 0.12 acres.

New land: None acres.

5.5 Has the property been involved with a state or federal site cleanup program such as Superfund, Brownfields, HSCA Voluntary Cleanup Program, RCRA Corrective Action, Aboveground or Underground Storage Tank Cleanup Programs? If so please specify which program.

See Attachment F.

5.6 With regards to environmental cleanup actions, has a Uniform Environmental Covenant, Final Plan of Remedial Action, or no further action letter been issued by the Department? NO

If so are the planned construction activities consistent with the requirements or conditions stated in these documents?

PART 6A

ENVIRONMENTAL IMPACTS

Air Quality

- 6.1 Describe project emissions (new, as well as any increase or decrease over current emissions) by type and amount under maximum operating conditions:

New emission sources are associated with burning additional natural gas in existing boilers to provide heat for scalding water to relax feather follicles prior to the birds being processed in the pickers to remove feathers.

Pollutant	Existing Emissions		Net Increase/Decrease		New Total Emissions		Percent Change (compare tons/year)
	Lbs/day	Tons/year	Lbs/day	Tons/year	Lbs/day	Tons/year	
SOx	248	45.2	0.3	0.06	249	45.3	0
NOx	113	20.7	6.6	1.2	120	21.9	6
CO	228	41.6	6.9	1.26	235	42.9	3
VOC	10	1.8	0.77	0.14	10	1.9	0
PM-10	199	36.3	1.9	0.34	201	36.6	1

- 6.2 Describe how the above emissions change in the event of a mechanical malfunction or human error.

No mechanical malfunction or human errors associated with boiler operation are envisioned that would cause emission changes.

- 6.3 Describe any pollution control measures to be utilized to control emissions to the levels cited above in 5.1.

The pollution control equipment will be operated and maintained per the manufacturer's recommendations.

- 6.4 Show evidence that applicant has, or will have, the ability to maintain and utilize this equipment listed in 5.3 in a consistently proper and efficient manner. (For example, provide college transcripts and/or records of training courses and summary of experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms to be responsible for maintaining and utilizing this equipment.)

Operators will be trained by the equipment suppliers prior to and during a 30 day startup.

Water Quality

- 6.5 Describe wastewater discharge (new, as well as any increase or decrease over current discharge levels) due to project operations:

Mountaire currently treats its wastewater with a biological system consisting of a dissolved air flotation unit, anaerobic lagoons followed by activated sludge, disinfection and water reuse and aquifer recharge by spray irrigation on 943 acres of agricultural land. Only about 35%, 334 acres, of this land is in the Coastal Zone. Based on recent records, the existing flow from the poultry processing plant and hatchery to the biological treatment system is 2.3 MGD.

The project will reduce the amount of nitrogen, BOD and TSS by approximately 45, 32 and 32 tons per year, respectively.

Pollutant	Current Discharge Concentration (ppm)	New or Changed Discharge Concentration (ppm)	Current Discharge		Net Increase/Decrease		New Total Emissions	
			Lbs/day	Tons/year	Lbs/day	Tons/year	Lbs/day	Tons/year
TKN (1)	29.4	9.8	564	103	(368)	(67)	196	36
BOD	34.5	7.0	662	121	(522)	(95)	140	26
TSS	39.9	7.0	765	140	(625)	(114)	140	26

(1) Total Nitrogen is solely limited by mass to 325 lbs/acre/year which may include supplemental fertilizer. This limitation may be adjusted if it can be shown through subsequent analysis of the crop removed that the total nitrogen removed with the crop is equal to the amount applied through the reclaimed water and additional fertilizer application. Mountaire addresses this opportunity by the accounting system included as Attachment G.

- 6.6 Describe the current method of employee sanitary wastewater disposal and any proposed changes to that system due to this proposed project.

Sanitary waste will continue to flow to the existing complex sanitary system.

- 6.7 Identify the number, location, and name of receiving water outfall(s) of any and all process wastewater discharge (new or current) affected by this proposed project. Provide NPDES Permit Numbers for each discharge affected.

New and current treated process wastewater will be land applied pursuant to Permit No. LTS 5011-87- 04

6.8 If any effluent is discharged into a public sewer system, is there any pretreatment program? If so, describe the program. NA

6.9 Stormwater:

a. Identify the number, location, and name of receiving waters of stormwater discharges. Provide permit number for each discharge.

There will be no stormwater discharges to surface waters as a result of this project.

b. Describe the sources of stormwater run-off (roofs, storage piles, parking lots, etc).

Roof and parking lot.

c. Describe the amount of stormwater run-off increase over current levels that will result from the proposed project.

De Minimis

d. Describe any pollutants likely to be in the stormwater. NA

e. Describe any pollution control device(s) or management technique(s) to be used to reduce the amount of stormwater generated, and devices to improve the quality of the stormwater run-off prior to discharge. NA

f. Describe any new or improved stormwater drainage system required to safely carry off stormwater without flooding project site or neighboring areas down gradient. NA

6.10 Will this project use a new water intake device, or increase the use (flow) from an existing intake device?

NO

If yes, state:

a. the volume of water to be withdrawn, and;

b. Describe what will be done to prevent entrainment and/or entrapment of aquatic life by the intake device.

6.11 Will this proposed project result in a thermal discharge of water, or an increase in the flow or temperature of a current thermal discharge?

NO

If yes, state:

- a. the volume of the new flow or increase from the existing thermal discharge, both in flow and amount of heat;
- b. how warm will the water be when it is discharged into a receiving waterway, discharge canal, or ditch, and what will be the difference in discharge temperature and ambient temperature (delta T) at various seasons of the year after all cooling water mechanisms have been applied to the hot water?
- c. the equipment and/or management techniques that will be used to reduce the thermal load of the discharge water.

6.12 Will any proposed new discharge or change in existing discharge cause, or have potential to cause, or contribute to, the exceedance of applicable criteria appearing in the [“State of Delaware Surface Water Quality Standards”](#)?

NO Will comply with the LTS permit and Pollution Control Strategy.

If yes, explain:

6.13 Describe any oils discharged to surface waters due to this proposed project.

None

6.14 Describe any settleable or floating solid wastes discharged to surface waters due to this project.

None

6.15 Show evidence that the applicant has, or will have, the ability to maintain and utilize any water pollution control equipment listed in questions 5.5 through 5.14 in a consistently proper and efficient manner. (For example, provide operator license numbers, college transcripts and/or training courses and summary of prior experience with this pollution control equipment of person(s) responsible for pollution control equipment, and/or provide copies of contracts with pollution control firms.)

The persons listed below are licensed wastewater treatment operators required to take continuous training courses to maintain their licenses.

<u>Name</u>	<u>Level</u>
James A. Nilan III	4
John E. Martin	3

Beth B. Sise	4
Horace Brown	1
Chester Pope	1
Phillip Slocum	1

- 6.16 Estimate the amount of water to be used for each specified purpose including cooling water. State daily and maximum water use in the unit of gallons per day for each purpose and source of water. State if water use will vary with the seasons, time of day, or other factors.

The average daily and maximum rate of water use for boiler steam, cooling tower blow off and cleaning water is 2,400,000 gallons per day. Water usage will vary in direct proportion to raw material input that has a limited seasonality reflecting market demand for poultry products. Other factors that contribute to water demand variability are bird health, line speed, operating efficiency and supervision.

- 6.17 Identify the source of water needed for the proposed project, including potable water supplies.

Groundwater from the Columbia aquifer.

- 6.18 Are wells going to be used?
YES

If yes:

- a. Identify the aquifer to be pumped and the depth, size, location and pumping capacity of the wells.

<u>Well</u>	<u>Location</u>	<u>Capacity (GPM)</u>
SP-H1	Columbia	1500
PP-1	Columbia	1000
PP-2	Columbia	1000

See Attachment E for well locations

- b. Has a permit allocation been applied for to do this? Current allocation sufficient?

Current allocation is sufficient.

- c. How close is the proposed well(s) to any well(s) on adjacent lands?

Sufficiently distant to preclude interference with the cone of influence of off-site wells.

Solid Waste

6.19 Will this project result in the generation of any solid waste?

YES

If yes, describe each type and volume of any solid waste (including biowastes) generated by this project, and the means used to transport, store, and dispose of the waste(s).

One dumpster load per week of aprons, shackles, knives etc that will be transported to the DSWA landfill in Sussex County by a licensed hauler.

No biowastes or DAF skimmings are land applied on the fields in the Coastal Zone.

6.20 Will there be any on-site recycling, re-use, or reclamation of solid wastes generated by this project?

NO

If yes, describe:

6.21 Will any waste material generated by this project be destroyed on-site?

NO

If yes, how will that be done?

Hazardous Waste

6.22 Will this proposed project result in the generation of any hazardous waste as defined by the [“Delaware Regulations Governing Hazardous Waste”](#)?

NO

If yes, identify each hazardous waste, its amount, and how it is generated:

6.23 Describe the transport of any hazardous waste and list the permitted hazardous waste haulers that will be utilized.

6.24 Will the proposed project cause the applicant to store, treat, and/or dispose of hazardous waste?

NO

If yes, describe:

6.25 Does the applicant currently generate any hazardous waste at this site?

NO

If yes, describe:

Habitat Protection

6.26 What is the current use of the land that is to be used for the proposed project?

Agribusiness complex

6.27 Will the proposed project result in the loss of any wetland habitat?

NO

If yes, describe:

6.28 Will any wastewater and/or stormwater be discharged into a wetland?

NO

If yes, will the discharge water be of the same salinity as the receiving wetlands?

6.29 Will the proposed project result in the loss of any undisturbed natural habitat or public use of tidal waters?

NO

If yes, how many acres?

6.30 Do threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act) exist at the site of the proposed project, or immediately adjacent to it?

NO

If yes, list each species:

6.31 Will this proposed project have any effect on these threatened or endangered species (as defined by the DNREC and/or the Federal Endangered Species Act).

NO

If yes, explain:

6.32 What assurances can be made that no threatened or endangered species exist on the proposed project site?

No vegetative growth or suitable habitat to support threatened or endangered species. Also, see Attachment H

6.33 Describe any filling, dredging, or draining that may affect nearby wetlands or waterways. None

6.34 If dredging is proposed, how much will occur and where will the dredged materials go for disposal? NA

Other Environmental Effects

- 6.35 Describe any noticeable effects of the proposed project site including: heat, glare, noise, vibration, radiation, electromagnetic interference, odors, and other effects.

There will be no noticeable effects due to the project as regards heat, glare, noise, vibration, radiation, electromagnetic interference, odors, and other effects.

- 6.36 Describe what will be done to minimize and monitor such effects.

The process equipment and general site activities will comply with The Regulations Governing the Control of Noise.

- 6.37 Describe any effect this proposed project will have on public access to tidal waters. None

- 6.38 Provide a thorough scenario of the proposed project's potential to pollute should a major equipment malfunction or human error occur, including a description of backup controls, backup power, and safety provisions planned for this project to minimize any such accidents

This project does not alter the existing manufacturing process. It increases production but other than the picking line does not make any other changes, therefore, there already exist sufficient backup controls, safety provisions for the future scenario.

- 6.39 Describe how the air, water, solid and hazardous waste streams, emissions, or discharge change in the event of a major mechanical malfunction or human error.

The wastewater treatment plant has demonstrated sufficient storage volume in the two 8-million gallon anaerobic lagoons to absorb any malfunction or error in the complex. Should the malfunction continue, live haul operations will be interrupted and the processing plant shut down.

PART 6B

ENVIRONMENTAL OFFSET PROPOSAL REDUCTION CLAIM

Is applicant claiming the right to have a reduced offset proposal due to past voluntary improvements as defined in the “Regulations Governing Delaware’s Coastal Zone”?

Yes, to totally offset project increases in air emissions. Mountaire intends to use 3.9 T/year from the existing 41 T/year reserve. See Part 3 for a detailed description.

If yes, provide an attachment to the application presenting sufficient tangible documentation to support your claim.

See Part 6.1 for a description of changes in air emissions T/year.

PART 6C

ENVIRONMENTAL OFFSET PROPOSAL

If the applicant or the Department finds that an Environmental Offset Proposal is required, the proposed offset project shall include all the information needed to clearly establish: None required. Wastewater Treatment Plant will be upgraded to reduce Total Nitrogen Load to the field. For expected upgraded plant performance, see Attachment J.

- A. A qualitative and quantitative description of how the offset project will “*clearly and demonstrably*” more than offset the negative impacts from the proposed project.

Total air emissions will increase by 4.5 tons per year by natural gas burned in the existing boilers to provide heat for scalding. This emission measurement required an offset of $1.3 \times 3.0 = 3.9$ tons per year. Mountaire intends to apply 3.9 tons per year from the existing 41 tons per year reserve, resulting in a decrease held in air emissions offset reserve to 37.1 tons per year.

- B. How and in what period of time the offset project will be carried out.

Reduced air emissions that consist of the offset reserve are current.

- C. What the environmental benefits will be and when they will be achieved.

Reduction in air emissions occurred in 2010 and continue.

- D. What scientific evidence there is concerning the efficacy of the offset project in producing its intended results.

The emission reduction was quantified and filed in reports to DNREC from 2010 to 2013.

- E. How the success or failure of the offset project will be measured in both the short and long term.

See Answer to D.

- F. What, if any, negative impacts are associated with the offset project. None

- G. How the offset will impact the attainment of the Department’s environmental goals for the Coastal Zone and the environmental indicators used to assess long-term environmental quality within the Coastal Zone.

Continued use of natural gas fuel will result in continued reduction of SOX, NOX, CO, VOC and PM-10 from this source in the Coastal Zone.

Additional Offset Proposal Information for the Applicant

1. The offset proposals must “*clearly and demonstrably*”¹ more than offset any new pollution from the applicant’s proposed project. The applicant can claim (with documentation) evidence of past voluntary environmental investments (as defined in the Regulations) implemented prior to the time of application. Where the Department concurs with the applicant that such has occurred, the positive environmental improvement of the offset proposal against the new negative impact can be somewhat reduced.
2. The applicant must complete the Coastal Zone Environmental Impact Offset Matrix. This matrix can be found on the CZA web page (<http://www.dnrec.delaware.gov/Admin/CZA/CZAHome.htm>), or by clicking on [this link](#). On page one, the applicant must list all environmental impacts in the column labeled “Describe Environmental Impacts.” In the column to the immediate right, the applicant should reference the page number of the application or attachment which documents each impact listed. In the “Describe Environmental Offset Proposal” column, applicant must state what action is offsetting the impact. The offset action shall be referenced by page number in the column to the right to show how the offset will work. The applicant shall not utilize the far right column. *Please ensure the matrix is complete, detailed, and as specific as possible, given the allotted space. Also, thoroughly proof-read to ensure there are no spelling or grammatical errors.* The applicant must submit a completed matrix both in hardcopy and electronic form.
3. Please note: the entire offset proposal, including the matrix, shall be available to the public, as well as the evidence of past voluntary environmental enhancements.

¹ For purposes of this requirement, the DNREC will interpret the phrase “clearly and demonstrably” to mean an offset proposal that is obviously so beneficial without detailed technical argument or debate. The positive environmental benefits must be obviously more beneficial to the environment than the new pollution that minimal technical review is required by the Department and the public to confirm such. The total project must have a positive environmental impact. The burden of proof is on the applicant.

PART 7

ECONOMIC EFFECTS

Construction

- 7.1 Estimate the total number of workers for project construction and the number to be hired in Delaware.

DEDO estimates 11 construction jobs per million dollars of project cost. Using that number yields 154 construction jobs.

- 7.2 Estimate the weekly construction payroll.

\$90,090

- 7.3 Estimate the value of construction supplies and services to be purchased in Delaware.

\$12,000,000 at 20% = \$2,800,000

- 7.4 State the expected dates of construction initiation and completion.

Earliest start projected is July 2017, complete by August 2017.

- 7.5 Estimate the economic impact from the loss of natural habitat, or any adverse economic effects from degraded water or air quality from the project on individuals who are directly or indirectly dependent on that habitat or air or water quality (e.g. commercial fishermen, waterfowl guides, trappers, fishing guides, charter or head boat operators, and bait and tackle dealers). None

Operations

- 7.2 State the number of new employees to be hired as a direct result of this proposed project and how many of them will be existing Delaware residents and how many will be transferred in from other states.

177 new employees

- 7.3 If employment attributable to the proposed project will vary on a seasonal or periodic basis, explain the variation and estimate the number of employees involved.

Not seasonal

- 7.4 Estimate the percent distribution of annual wages and salaries (based on regular working hours) for employees attributable to this project:

<u>Wage/salary</u>	<u>Percent of employees</u>
<\$10,000	
\$10,000-14,999	
\$15,000-24,999	
\$25,000-34,999	100%
\$35,000-49,999	
\$50,000-64,999	
\$65,000-74,999	
\$75,000-99,999	
>\$100,000	

- 7.5 Estimate the annual taxes to be paid in Delaware attributable to this proposed project:

State personal income taxes:	\$ 194,700
State corporate income taxes	\$ 37,500
County and school district taxes:	\$ 500 & \$2,000 respectively
Municipal taxes:	\$ -0-

PART 8

SUPPORTING FACILITIES REQUIREMENTS

Describe the number and type of new supporting facilities and services that will be required as a result of the proposed project, including, but not limited to: None

- a. Roads

- b. Bridges

- c. Piers and/or docks

- d. Railroads

- e. Microwave towers

- f. Special fire protection services not now available

- g. Traffic signals

- h. Sewer expansion

- i. Energy related facilities expansion

- j. Pipelines

PART 9

AESTHETIC EFFECTS

- 9.1 Describe whether the proposed project will be located on a site readily visible from a public road, residential area, public park, or other public meeting place (such as schools or cultural centers).

Blends in with existing features

- 9.2 Is the project site location within a half mile of a place of historic or scenic value? No

- 9.3 Describe any planned attempt to make the proposed facility aesthetically compatible with its neighboring land uses. Include schematic plans and/or drawings of the proposed project after it is complete, including any landscaping and screening. See response to 9.1

PART 10

EFFECTS ON NEIGHBORING LAND USES

- 10.1** How close is the nearest year-round residence to the site of this proposed project? 0.37 miles

- 10.2 Will this proposed project interfere with the public's use of existing public or private recreational facilities or resources? No

- 10.3 Will the proposed project utilize or interfere with agricultural areas? No

- 10.4 Is there any possibility that the proposed project could interfere with a nearby existing business, commercial or manufacturing use? No

COASTAL ZONE ENVIRONMENTAL IMPACT OFFSET MATRIX

Applicant:
Project:
CZA Offset Review Reference: (DNREC Only)

Page 1 of 1
Application Date:
Amendments:
Offset Review Date: (DNREC Use Only)
Matrix Amended:

ENVIRONMENTAL IMPACTS	(Applicant's Use) DESCRIBE ENVIRONMENTAL IMPACTS	PAGE NO.	(Applicant's Use) DESCRIBE ENVIRONMENTAL OFFSET PROPOSAL ¹	PAGE NO.	(DNREC Use Only) OFFSET SUFFICIENCY Yes, No or N/A
Air Quality (Applicant to List Below by Parameter)					
SO _x , NO _x , CO, VOC, PM-10	Increased Emissions	14	Offset from existing reserve		
Water Quality					
Surface	None	15	Not Required		
Groundwater	None	15	Not Required		
Water Quantity					
Surface	None	16	Not Required		
Groundwater	None	18	Not Required		
Water Use For:					
Processing	None	18	Not Required		
Cooling	None	18	Not Required		
Effluent Removal	NA				
Solid Waste	None	19	Not Required		
Hazardous Waste	None	20	Not Required		
Habitat					
Wetlands	None	21	Not Required		
Flora Fauna	None	21	Not Required		
Drainage/Flood Control	None	16	Not Required		
Erosion ²	None	15	Not Required		
Land Use Effects	None	22	Not Required		
Glare	None	22	Not Required		
Heat	None	22	Not Required		
Noise	None	22	Not Required		
Odors	None	22	Not Required		
Vibration	None	22	Not Required		
Radiation	None	22	Not Required		
Electro-Magnetic Interference	None	22	Not Required		
Other Effects	None	22	Not Required		
Threatened & Endangered Species	None	21	Not Required		
Impacts From:					
Raw Material	None	21	Not Required		
Intermediate Products	None	21	Not Required		
By-Products	None	21	Not Required		
Final Products	None	21	Not Required		

¹ See paragraph I.1.b in "Secretary Assessment"

² Construction and normal operation

LIST OF ATTACHMENTS

Attachment A	Agent letter
Attachment B	Master Site Plan
Attachment B-1	Process Flow Diagram
Attachment B-2	Equipment Inventory
Attachment B-3	Comparison of Current and Future Treated Wastewater Flows And Quality With and Without Flow Equalization
Attachment C	Proof of Zoning
Attachment D	Product and By-Product Flow Poultry Processing
Attachment E	Poultry Processing Site Plan
Attachment F	Consent Order
Attachment G	N Balance
Attachment H	Endangered Species Letter



April 14, 2017

RE: Authorized Agent

To Whom It May Concern:

This is to advise that Lee J. Beetschen, P.E., DEE of Duffield Associates, Inc. is Mountaire's Authorized Agent for the Coastal Zone Act permit application process for the Processing Plant Expansion project to be constructed and operated within our existing Millsboro Mountaire Farms of Delaware, Inc. complex.

MOUNTAIRE FARMS OF
DELAWARE, INC.

A handwritten signature in blue ink that reads "John Wren".

John Wren

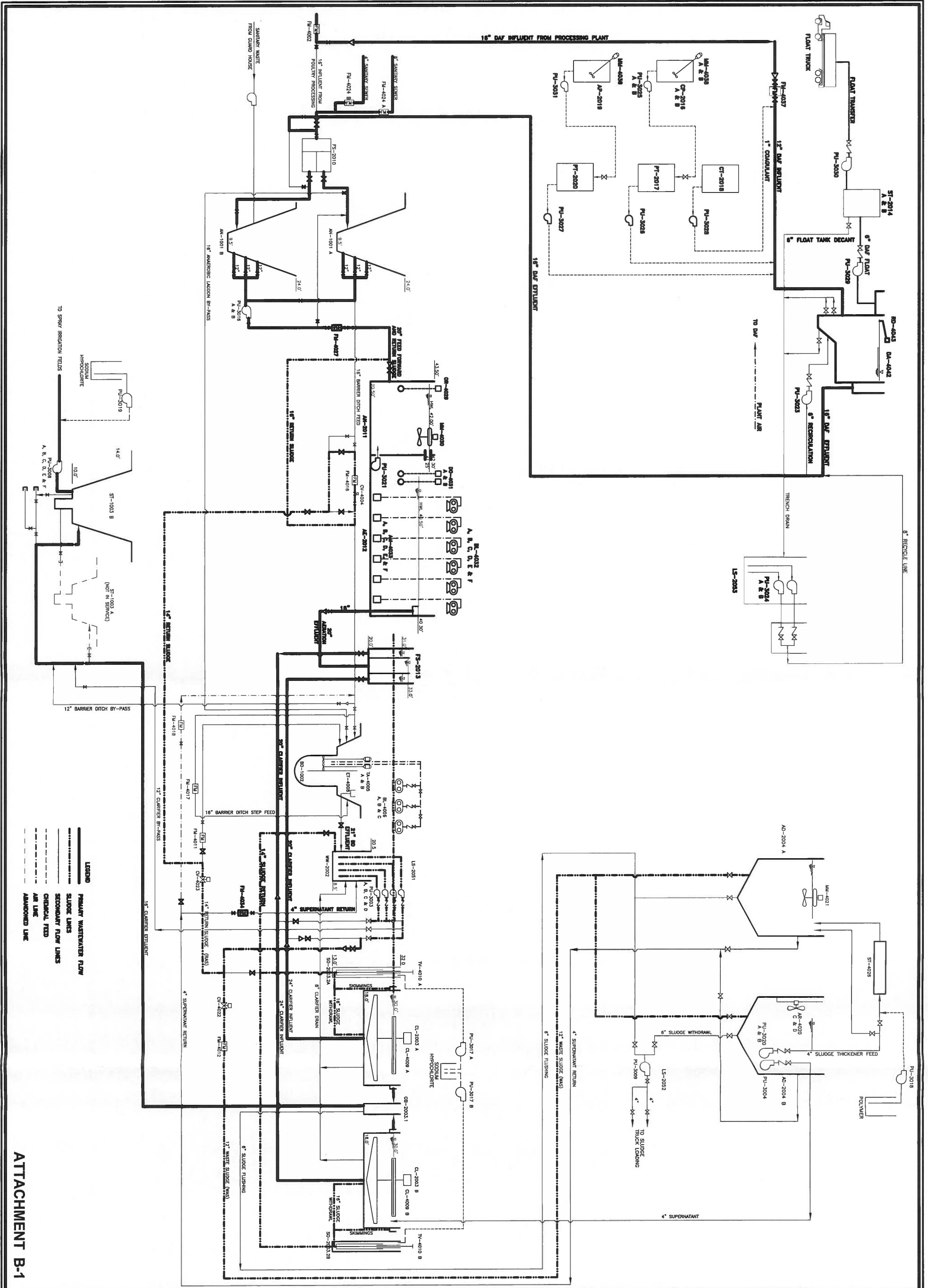
Director of Engineering and Environmental Services



Mountaire Farms Inc.

ATTACHMENT A

"We measure quality by how well we service our internal and external customers"



ATTACHMENT B-1

SHEET NO. 2	2011 WASTEWATER TREATMENT IMPROVEMENTS MOUNTAIRE FARMS OF DELAWARE, INC. MILLSBORO, DELAWARE		CABE CABE ASSOCIATES, INC. CONSULTING ENGINEERS DOVER, DELAWARE								
	PROCESS FLOW DIAGRAM		DRAWN BY: SMC	SCALE: NO SCALE							
FILE NO.: 2008193C			DESIGNED BY: SHL	CHECKED BY: RWK							
			DATE: 11-11-11	PROJ. NO.: 206-067	FILE NO.: 206F193C	SHEET 2 OF 15	DATE	SYM	REVISION	BY	APPD.

I. LAGOONS

NUMBER	DESCRIPTION	VOLUME (MG)	DEPTH (FT)	SURFACE AREA (ACRES)	DETENTION TIME (DAYS)	STATUS
AN-1001 A	ANAEROBIC LAGOON / FLOW EQ	9.06	11.9 (OPERATING RANGE 7')	2.76	NA	
AN-1001 B	ANAEROBIC LAGOON / FLOW EQ	9.06	11.9 (OPERATING RANGE 7')	2.76	NA	
BD-1002	BARBER DITCH	3.51	8	1.46	1.56	
ST-1003 A	SPRAY IRRIGATION STORAGE LAGOON (NOT IN SERVICE)					
ST-1003 B	SPRAY IRRIGATION STORAGE LAGOON	14.2	0-17	3.44	5.46	

II. VESSELS

NUMBER	DESCRIPTION	VOLUME (GAL)	DIMENSIONS (FT)	DEPTH (FT)	DETENTION TIME (HRS)	LOADING RATE (GPD/SF)	STATUS
WW-2002	CLARIFIER FEED LIFT STATION WET WELL	3,590	5x16	11	N/A	N/A	
CL-2003 A&B	CLARIFIER	852,600	110 DIA.	12	15.8	136	
OB-2003.1	CLARIFIER EFFLUENT BOX	N/A	4 DIA.	14	N/A	N/A	
SO-2003 2A&B	CLARIFIER SLUDGE BOX	N/A	8 DIA.	14	N/A	N/A	
AD-2004 A&B	AEATED SLUDGE TANK	391,000	86 DIA.	9	5.40	N/A	
FS-2010	ANAEROBIC FLOW SPLITTER	N/A			N/A	N/A	
AN-2011	ANOXIC TANK	539,000	65.33 DIA	21.5	4.98	N/A	
AE-2012	AERATION TANK	2,900,000	175.25 DIA	20	26.76	N/A	
FS-2013	FLOW SPLITTER-CLARIFIER INFLUENT	10,700	11 x 10	13	N/A	N/A	
ST-2014 A&B	FLOAT STORAGE TANK	8,500	10' DIA	12' + CONE	N/A	N/A	
CP-2016 A&B	CATIONIC POLYMER MIX TANK	2,500	7.5 DIA.	7.8"	N/A	N/A	
PT-2017	CATIONIC POLYMER AGING TANK	2,500	7.5 DIA.	7.8"	N/A	N/A	
CT-2018	COAGULANT TANK	6,000	8.5 DIA.	10' 6"	N/A	N/A	
AP-2019	ANOXIC POLYMER MIX TANK	2,500	7.5 DIA.	7.8"	N/A	N/A	
PT-2020	ANOXIC POLYMER AGING TANK	2,500	7.5 DIA.	7.8"	N/A	N/A	

III. LIFT STATIONS

NUMBER	SERVICE	LOCATION	STATUS
LS-2051	SLUDGE RECYCLE (EX. CLARIFIER FEED)	CLARIFIER	
LS-2052	AEATED SLUDGE WITHDRAWAL	AEATED SLUDGE STORAGE	
LS-2053	DRAIN	RESOURCE RECOVERY BUILDING	

IV. PUMPS

NUMBER	SERVICE	TYPE	MANUFACTURER	GPM	DELTA (FT)	RPM	MOTOR HP	SOLIDS CAPACITY	STATUS
PU-3003 A-D	SLUDGE RECYCLE (EX. CLARIFIER FEED)	CENTRIFUGAL SELF-PRIMING	GORMAN-RUPP	1,620	29	1750	25	3	
PU-3004	SUPERNATANT WITHDRAWAL	SUBMERSIBLE	GOLIUS	107	10	1750	0.4	1.5	
PU-3008 A-F	SPRAY IRRIGATION	HORIZONTAL CENTRIFUGAL	BERKELEY	750	185	1750	50	N/A	
PU-3009	SLUDGE TRANSFER	HORIZONTAL CENTRIFUGAL SCRUI-PELLER	CLDW	400	30	1750	7.5	3	
PU-3016 A&B	FEED FORWARD	CENTRIFUGAL SELF-PRIMING	ESCO	1,800	28	1150	30	3	
PU-3017 A&B	SODIUM HYPOCHLORITE - RAS								
PU-3018	POLYMER								
PU-3019	SODIUM HYPOCHLORITE - EFFLUENT								
PU-3020 A&B	SLUDGE THICKENER								
PU-3021	M.S.S. RECYCLE	PROPELLER	AIR-O-LATOR	12,640	2.5		15	-	
PU-3022	NOT USED								
PU-3023	DAF RECIRCULATION	CENTRIFUGAL	NIKUNI	280	150	1750	40	0.25	
PU-3024 A&B	DRAIN RECYCLE	CENTRIFUGAL	THOMAS	TBD	TBD	TBD	TBD	TBD	
PU-3025 A&B	CATIONIC POLYMER TRANSFER PUMP	AIR DIAPHRAGM	SANDPIPER	0-140	0-125 PSI	N/A	N/A	2	
PU-3026	CATIONIC POLYMER FEED PUMP	PROGRESSIVE CAVITY	MOYNO	VARIES	VARIES	VARIES	1.5	N/A	
PU-3027	ANOXIC POLYMER FEED PUMP	PROGRESSIVE CAVITY	MOYNO	VARIES	VARIES	VARIES	1.5	N/A	
PU-3028	COAGULANT FEED PUMP	PROGRESSIVE CAVITY	MOYNO	VARIES	VARIES	VARIES	1.5	N/A	
PU-3029	FLOAT PUMP	ROTARY LOBE	ROPER	TBD	TBD	TBD	TBD	N/A	
PU-3030	FLOAT TRANSFER PUMP	ROTARY LOBE	ROPER	TBD	TBD	TBD	TBD	N/A	
PU-3031	ANOXIC POLYMER TRANSFER PUMP	AIR DIAPHRAGM	SANDPIPER	0-140	0-125 PSI	N/A	N/A	2	

V. MISCELLANEOUS EQUIPMENT

NUMBER	SERVICE	MANUFACTURER	RPM	MOTOR HP	REMARKS	STATUS
FM-4002	PROCESSING PLANT EFFLUENT FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
CV-4004	FEED FORWARD CONTROL VALVE	RED VALVE COMPANY	N/A	N/A		
TA-4005 A&B	TURBINE AERATORS	PHILADELPHIA GEAR CORP.	1800/1200	125		
BL-4006 A,B&C	BD AIR SUPPLY BLOWERS	ROOTS	1800/1200	60		
DT-4007 A&B	BD DRAT TUBES	INNOVA-TECH	N/A	N/A		
ET-4008	BD EFFLUENT THROUGH	N/A	N/A	N/A		
CL-4009 A&B	CLARIFIER COLLECT DRIVE	ENVIROQUIP	1750	N/A		
TV-4010 A&B	SLUDGE WITHDRAWAL TELESCOPIC VALVE	ENVIROQUIP	N/A	N/A		
FM-4011	RETURN SLUDGE FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
FM-4012	WASTE SLUDGE FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
FM-4016	RETURN SLUDGE FEED FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
FM-4017	BD STEP FEED FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
FM-4018	BACKWASH WASTE/SUPERNATANT RETURN FLOW METER	CONTROL ELECTRONICS	N/A	N/A		
AR-4020 C&D	AEATED SLUDGE TANK AERATOR	AIR-O-LATOR	1750	25		
MM-4021	AEATED SLUDGE TANK MIXER					
CV-4022	WASTE SLUDGE CONTROL VALVE	DEZURIK	N/A	N/A		
CV-4023	RETURN SLUDGE CONTROL VALVE	DEZURIK	N/A	N/A		
FM-4024 A&B	ANAEROBIC INFLUENT FLOW METER					
ST-4026	SLUDGE THICKENER					
FM-4027	FEED FORWARD FLOW METER	ENDRESS + HAUSER	N/A	N/A	10 IN.	
OR-4029	ORP METER	HACH	N/A	N/A		
MM-4030	ANOXIC TANK MIXER	SIEMENS	900	20		
DO-4031 A&B	AERATION DISSOLVED OXYGEN METER	HACH	N/A	N/A		
BL-4032 A-F	AERATION BLOWER	ROOTS	3600	100	1800 CFM	
AM-4033 A-F	SUBMERSIBLE AERATING MIXER	AQUATEC	350	50		
FM-4034	SUPERNATANT FLOW METER	ENDRESS + HAUSER	N/A	N/A	4 IN.	
FM-4037	DAF FLOW METER	ENDRESS + HAUSER	N/A	N/A	12 IN.	
MM-4038 A&B	CATIONIC POLYMER MIXER	CHEMNEER		7.5		
MM-4039	ANOXIC POLYMER MIXER	CHEMNEER		7.5		
4040	NOT USED					
4041	NOT USED					
DA-4042	DAF UNIT	WORLD WATER WORKS	NA	NA	2400 GPM	
RD-4043	RAKE DRIVE	MOTOVARIO	1750 / 10	5		

STATUS
 1. NEW
 2. EXISTING - TO REMAIN
 3. EXISTING - TO BE MODIFIED
 4. EXISTING - TO BE ABANDONED

ATTACHMENT B-2

CABE ASSOCIATES, INC. CONSULTING ENGINEERS DOVER, DELAWARE		DRAWN BY: SMC DESIGNED BY: SHL DATE: 11-11-11	SCALE: AS SHOWN CHECKED BY: RWK FILE NO.: 206F194C SHEET 3 OF 15	DATE: _____ SYM: _____ REVISION: _____ BY: _____ APPD.: _____
---	--	---	---	---

2011 WASTEWATER TREATMENT IMPROVEMENTS
 MOUNTAINE FARM OF DELAWARE, INC.
 MILLSBORO, DELAWARE

EQUIPMENT INVENTORY

SHEET NO. 3

FILE NO.: 206F194C

Comparison of Current and Future Treated Wastewater Flows and Quality With and Without Flow Equalization

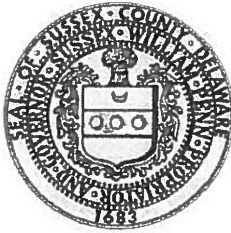
<u>Parameter</u>	<u>Current</u>	<u>Future¹</u>	<u>Future²</u>
Flow (MGD)	2.3	2.4	2.4
BOD (lbs/day)	662	691	140
TSS (lbs/day)	765	799	140
TN (lbs/day)	564	588	196

Notes:

1. Without Flow Equalization
2. With Flow Equalization

PLANNING & ZONING
JENNIFER WALLS
PLANNING AND ZONING MANAGER

(302) 855-7878 T
(302) 854-5079 F



Sussex County

DELAWARE
sussexcountyde.gov

April 4, 2017

Mr. John Shahan, P.E.
Principal Engineer
AWB Engineers
1942 Northwood Drive
Salisbury, MD 21801-7824

RE: Zoning Verification for Mountaire Farms Processing Plant Expansion located at 9005 John J Williams Hwy, Millsboro, DE 19966.
Tax Map I.D. 234-32.00-117.00

Dear Mr. Shahan:

Please accept this letter as certification that the property located at 9005 John J Williams Hwy, Millsboro, DE 19966 known as Mountaire Farms of Delaware, Inc is located in the HI-1 (Heavy Industrial) Zoning District. The owner has proposed to expand their existing facility to increase plant production by adding a 5,402 square foot "Picking Addition" on the east side of the existing plant. Poultry processing is a permitted use within the HI-1 (Heavy Industrial District).

The intended use complies with Chapter 115, the Zoning Ordinance, of the Code of Sussex County.

Please feel free to contact me with any questions during business hours 8:30am – 4:30pm Monday through Friday at 302-855-7878.

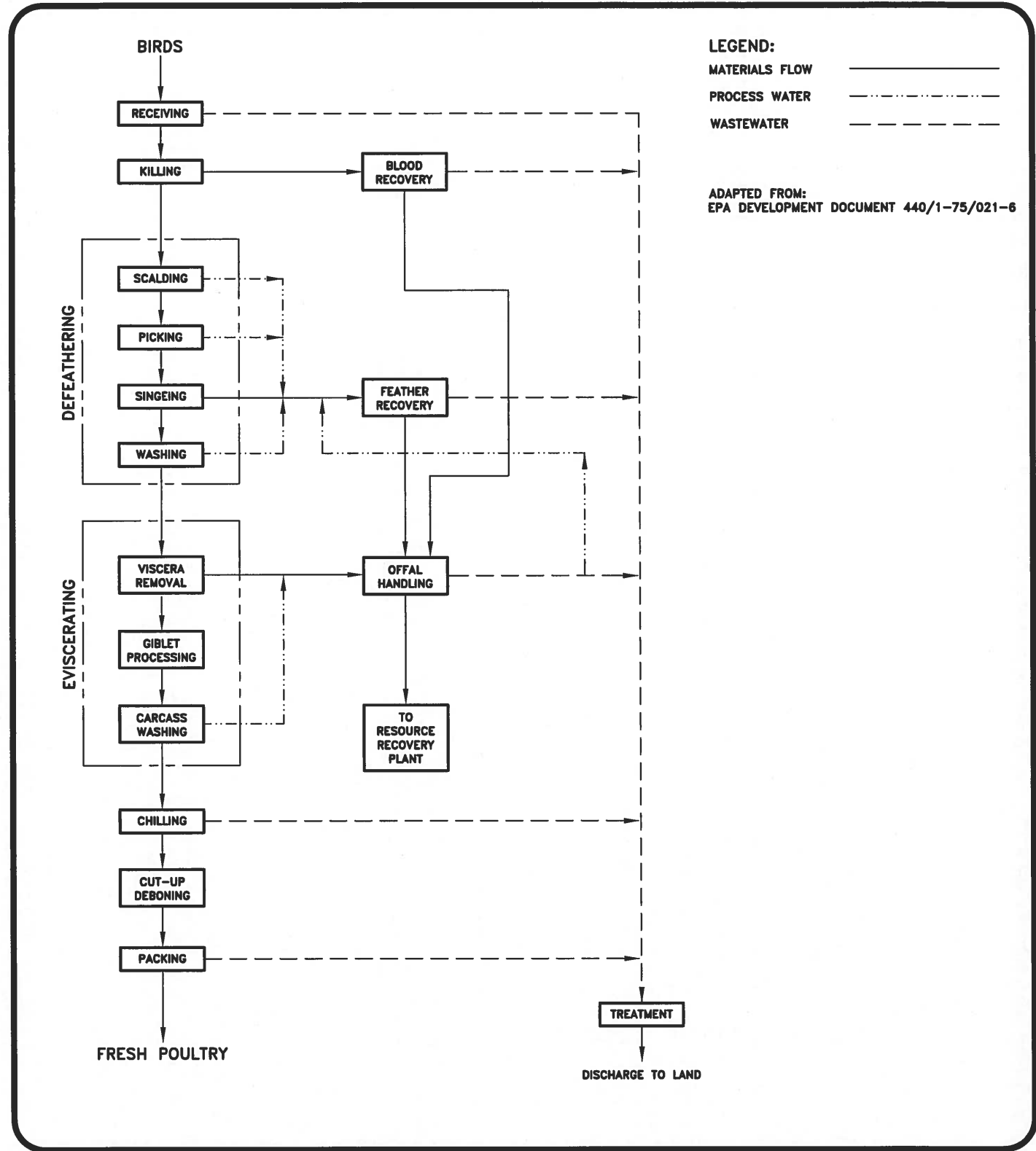
Sincerely,

Jennifer Walls
Planning and Zoning Manager



COUNTY ADMINISTRATIVE OFFICES
2 THE CIRCLE | PO BOX 417
GEORGETOWN, DELAWARE 19947

ATTACHMENT C

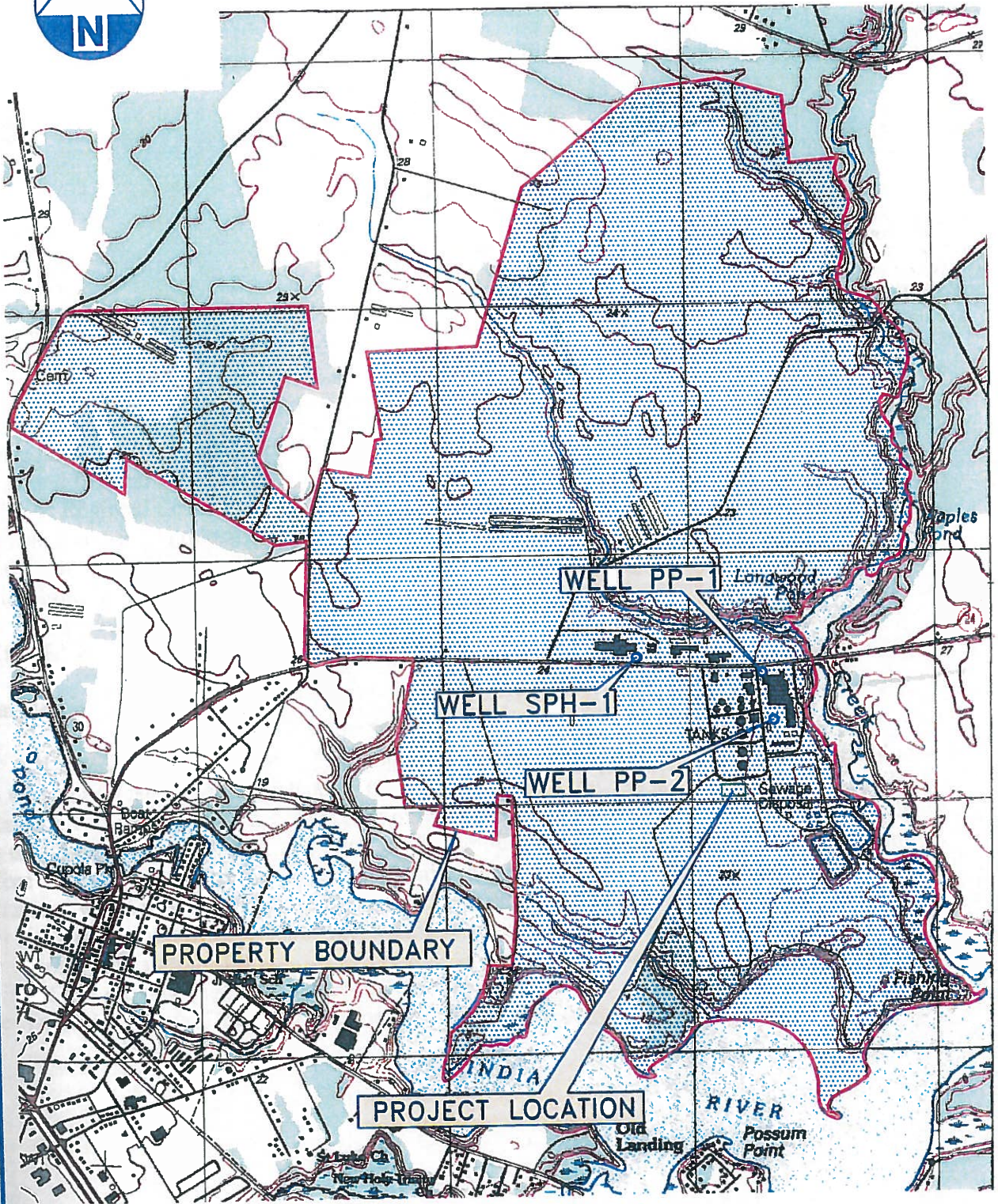


DATE: APRIL, 2017
 SCALE: NO SCALE
 PROJECT. NO. 11416.EA
 SHEET: ATTACHMENT D

PRODUCT AND BY-PRODUCT FLOW
 POULTRY PROCESSING
 MOUNTAIRE FARMS, INC.
 DELAWARE

DESIGNED BY: LJB
 DRAWN BY: DAC
 CHECKED BY: SHL
 FILE: 2017-ATT-D

DUFFIELD ASSOCIATES
 Soil, Water & the Environment
 5400 LIMESTONE ROAD
 WILMINGTON, DE 19808-1232
 TEL. 302.239.6634
 FAX 302.239.8485
 OFFICES IN DELAWARE, MARYLAND
 PENNSYLVANIA AND NEW JERSEY
 E-MAIL: DUFFIELD@DUFFNET.COM



SCALE: 1" = 2000'



206-063
APRIL 2009
206A

MOUNTAIRE FARMS OF DELAWARE, INC.
PROPERTY MAP

ATTACHMENT

E

LAW OFFICES
PARKOWSKI, GUERKE & SWAYZE
PROFESSIONAL ASSOCIATION
116 WEST WATER STREET
P.O. BOX 598
DOVER, DELAWARE 19903
302-678-3262
FAX: 302-678-9415

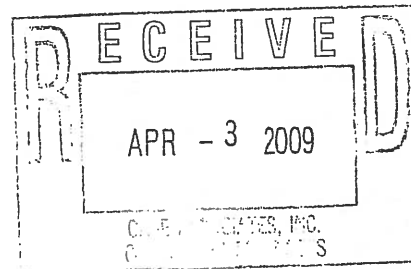
F. MICHAEL PARKOWSKI
I. BARRY GUERKE
DAVID S. SWAYZE
CLAY T. JESTER
JEREMY W. HOMER
JOHN C. ANDRADE
MARK F. DUNKLE
WILLIAM A. DENMAN
MICHAEL W. ARRINGTON
CHRISTINE P. SCHILTZ
MICHAEL W. TEICHMAN
BASIL C. KOLLIAS
ANNE HARTNETT REIGLE

GEORGE F. GARDNER, III
OF COUNSEL

WILMINGTON OFFICE
800 KING STREET, SUITE 203
WILMINGTON, DE 19801-0369
302-654-3300
FAX: 302-654-3033

June 5, 2003

Deane H. Bartlett, Esquire
Senior Assistant Regional Counsel
Water and General Law Branch
Office of Regional Counsel
U.S. Environmental Protection Agency, 3RC20
1650 Arch Street
Philadelphia, PA 19103

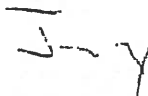


RE: EPA v. Mountaire Farms / Consent Order

Dear Deane:

I received your voice mail regarding the document which is to be part of Attachment 4 to the Consent Order. As I understand it, the fully executed order did not contain the full exhibit because a two-sided document was copied only on one side. As you point out in the voice mail, the document is an attachment to a letter to the surrounding neighbors which was sent out long before and in anticipation of the consent order being finalized. Thus the fact that the full document was not in the executed consent order does not impact the sufficiency of the notice that went to the landowners. However, I think it is important that the final order include all of the pages of the attachments and for that reason have asked Mountaire (specifically Jeff Smith) to insert the missing page in Attachment 4 to the consent order. I assume that EPA is doing likewise with its copy of the order if it does not contain both pages of the document.

Yours truly,


JEREMY W. HOMER

JWHsar
e:mail: png3@pnglaw.com
cc: Mr. Jeffrey Smith
h\mountaire\nitrate\mount.10a

ATTACHMENT F

LAW OFFICES
PARKOWSKI, GUERKE & SWAYZE

PROFESSIONAL ASSOCIATION
116 WEST WATER STREET
P.O. Box 598
DOVER, DELAWARE 19903
302-678-3262
FAX: 302-678-9415

F. MICHAEL PARKOWSKI
I. BARRY GUERKE
DAVID S. SWAYZE
CLAY T. JESTER
JEREMY W. HOMER
JOHN C. ANDRADE
MARK F. DUNKLE
WILLIAM A. DENMAN
MICHAEL W. ARRINGTON
CHRISTINE P. SCHILTZ
MICHAEL W. TEICHMAN
BASIL C. KOLLIAS
ANNE HARTNETT REIGLE

GEORGE F. GARDNER, III
OF COUNSEL

WILMINGTON OFFICE
800 KING STREET, SUITE 203
WILMINGTON, DE 19801-0369
302-654-3300
FAX: 302-654-3033

June 2, 2003

Confidential Communication
Attorney/Client Privilege

VIA TELEFAX
AND FEDERAL EXPRESS

Jeffrey Smith, Environmental Manager
Mountaire Farms of Delmarva, Inc.
Administrative Building
Route 24 East
Millsboro, DE 19966

RE: EPA Consent Order

Dear Jeff:

Enclosed is the final executed Consent Order regarding the nitrate issue.

As you know, the Order requires certain things be undertaken within certain timeframes. Specifically, paragraphs 34, 36, 38, 39, 47, 51, and 55 each contain specific requirements that relate to timeliness of performance. Paragraph 34 addresses the provision of the emergency supply of drinking water, which I believe Mountaire has already addressed. However, it would be a good idea to review the language of the paragraph and make sure all the requirements have been satisfied. Among other things, Mountaire will need to be in a position to explain how paragraph 34 was addressed when it files its first progress report which is due on July 28, 2003 (see paragraph 51).

Paragraph 36 allows 60 days from the effective date of the order to submit the plan for the permanent alternate water supply. Paragraph 38 and 39 address the groundwater monitoring requirements. Paragraph 47 provides 7 days within which to provide a copy of the Order to various entities involved in performing the work, etc. Paragraph 55 requires "immediate" notification to EPA regarding efforts related to providing water to each resident.

LAW OFFICES
PARKOWSKI, GUERKE & SWAYZE

PROFESSIONAL ASSOCIATION
116 WEST WATER STREET
P.O. BOX 598
DOVER, DELAWARE 19903
302-678-3262
FAX: 302-678-9415

F. MICHAEL PARKOWSKI
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MARK F. DUNKLE
WILLIAM A. DENNAN
MICHAEL W. ARRINGTON
CHRISTINE P. SCHULTZ
MICHAEL W. TRICHIMAN
BASIL C. KOLLIAS
ANNE HARTNETT REIGLE

GEORGE F. GARDNER, III
OF COUNSEL

WILMINGTON OFFICE
800 KING STREET, SUITE 203
WILMINGTON, DE 19801-0369
302-654-3300
FAX: 302-654-3033

FAX TRANSMITTAL SHEET

TO: Jeff Smith, Environmental Manager
Mountaire Farms of Delmarva, Inc.

FAX NO: (302) 934-3081

FROM: Jeremy W. Homer, Esquire

DATE: June 2, 2003

MESSAGE: Please see the attached.

Our telecopier telephone number is (302) 678-9415.

Name of Operator: Sandy Rothermel

TOTAL NUMBER OF PAGES TRANSMITTED, INCLUDING THIS PAGE: 4

If this transmission is not satisfactory, or if there are questions, please call (302) 678-3262, and speak to the above-named operator. Thank you.

Original document(s) will follow by mail.

The information contained in this facsimile message is attorney privileged and confidential information, intended only for the use of the individual or entity named above. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copy of this communication is strictly prohibited. If you have received this communication in error, please immediately notify us by telephone collect and return the original message to us at the above address via the U.S. Postal service (we will reimburse postage). Thank you.

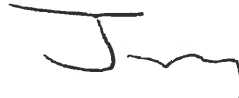
Jeffrey Smith, Environmental Manager

6/2/03

Page 2

Also, please note that the Order appears to be missing a page or pages at Attachment 4. I have a voice mail message into EPA's attorney regarding that. I also plan to follow up with a letter to the EPA attorney regarding that question and the effective date of the Order.

Yours truly,



JEREMY W. HOMER

JWHsar

e:mail: png3@pnglaw.com

H\Mountair\Nitrate\Mount19

LAW OFFICES
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GEORGE F. GARDNER, III
OF COUNSEL

WILMINGTON OFFICE
800 KING STREET, SUITE 203
WILMINGTON, DE 19801-0369
302-654-3300
FAX: 302-654-3033

June 2, 2003

**Confidential Communication
Attorney/Client Privilege**

**VIA TELEFAX
AND FEDERAL EXPRESS**

Jeffrey Smith, Environmental Manager
Mountaire Farms of Delmarva, Inc.
Administrative Building
Route 24 East
Millsboro, DE 19966

RE: EPA Consent Order

Dear Jeff:

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Jeffrey Smith, Environmental Manager

6/2/03

Page 2

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Yours truly,



JEREMY W. HOMER

JWHsar

e:mail: png3@pnglaw.com

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PROFESSIONAL ASSOCIATION
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JOHN C. ANDRADE
MARK F. DUNKLE
WILLIAM A. DENMAN
MICHAEL W. ARRINGTON
BASIL C. KOLLIAS
ANNE E. HARTNETT-REIGLE

March 12, 2003

Jeffrey Smith, Environmental Manager
Mountaire Farms of Delmarva, Inc.
Administrative Building
Route 24 East
Millsboro, DE 19966

RE: EPA Consent Order

Dear Jeff:

Enclosed is the original of the EPA Consent Order, along with Deane Bartlett's transmittal letter which explains the process EPA utilizes to execute the agreement.

It is my understanding that you plan to schedule a teleconference with me, yourself, and Mountaire management to discuss the consent order. I will be out of the office on Thursday, March 13, 2003, but will generally be available on other days. Please phone me when you have a time set up for the discussion.

Yours truly,



JEREMY W. HOMER

JWHsar
e-mail: png3@pnglaw.com
Enclosures
H:\Mountair\Nitrate\Mount16

VIII. EFFECTIVE DATE OF ORDER

This Order shall be effective immediately upon Respondent's receipt of the executed Order. If modifications are made to this Order, such modifications will be effective on the date received by Respondent. This Order shall remain in effect until the provisions identified in the Order have been met and EPA has certified its approval of the same in writing. This Order shall constitute final agency action for purposes of Section 1448 of the SDWA, 42 U.S.C. § 300j-7.

IX. TERMINATION AND SATISFACTION

The provisions of this Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order have been satisfactorily completed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III

Date: 5/12/03

By: [Signature]
Jon M. Capacasa, Acting Director
Water Protection Division

Mountaire Farms of Delaware, Inc.

Date: 4/22/03

By: [Signature]
Title: President and COO



MAR 4 2003

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

VIA OVERNIGHT MAIL

March 3, 2003

Jeremy W. Homer, Esquire
Parkowski & Guerke, PA
116 West Water Street
Dover, DE 19903

Re: Mountaire Farms, SDWA Order on Consent

Dear Jerry:

In response to your voicemail message, I have enclosed the final Consent Order, with all of the changes we have discussed over the last few weeks, including the change to Paragraph 37.

Please review the document and forward it to Mountaire for signature, and then to me and I will obtain the necessary Region III approvals. EPA would like to have Mountaire's signature no later than the end of next week. As always, this document and the terms therein must be approved by EPA management. I do not anticipate any difficulties in obtaining the necessary approvals, as management has been consulted with respect to all of the revisions reflected in this document.

In the meantime, if you have any questions regarding the Order, please call me.

I appreciate your cooperation in the resolution of this matter.

Sincerely,

A handwritten signature in cursive script that reads "Deane".

Deane H. Bartlett
Senior Assistant Regional Counsel

Enclosure
cc: Karen Johnson, WPD



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Customer Service Hotline: 1-800-438-2474

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

IN THE MATTER OF:)	ORDER ON CONSENT
)	
)	
Mountaire Farms of)	Proceeding under section 1431(a)(1)
Delaware, Inc.)	of the Safe Drinking Water Act,
Rt. 24 East of Millsboro)	42 U.S.C. § 300i(a)(1)
PO Box 1320)	
Millsboro, DE 19966)	Docket No. SDWA-03-2003-0015

I. STATUTORY AUTHORITY

1. This Order on Consent ("Order") is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency ("EPA") by Section 1431(a)(1) of the Safe Drinking Water Act ("SDWA"), 42 U.S.C. § 300i(a)(1).

2. The authority to issue this Order was delegated to the Regional Administrator by Delegation No. 9-17, dated May 11, 1994, and redelegated to the Director of the Water Protection Division by Delegation No. 9-17, dated September 12, 1994.

3. Under the SDWA, Congress has authorized EPA to exercise broad authority for the protection of public water supplies and drinking water sources.

II. DEFINITIONS

4. The term "underground source of drinking water" ("USDW") means, in part, an aquifer or its portion which contains a sufficient quantity of ground water to supply a public water system and currently supplies drinking water for human consumption or contains fewer than 10,000 milligrams per liter ("mg/l") total dissolved solids, and which is not an exempted aquifer. See 40 C.F.R § 144.3.

5. The term "aquifer" means a geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring. See 40 C.F.R. § 144.3.

6. The term "down gradient" means in the direction of the flow of ground water in the surficial aquifer.

7. The term "concentration of nitrate" shall mean the nitrate ion measured as nitrogen.

8. The term "concentration of nitrite" shall mean the nitrite ion measured as nitrogen.

9. The term "combined nitrate and nitrite" shall mean the sum of the mass loading of nitrate, measured as nitrogen, and the mass loading of nitrite, measured as nitrogen.

10. The term "contaminant" means any physical, chemical, biological, or radiological substance or matter in water. See 42 U.S.C. § 300f(6).

11. The Maximum Contaminant Level (MCL) is the maximum permissible level of a contaminant in water which is delivered to any user of a public water system. See 42 U.S.C. §300f(3). Studies that are the basis for setting the MCL's indicate adverse health effects for contaminants in drinking water exceeding these levels.

12. "Section" shall mean a portion of this Order identified by a Roman numeral.

13. "Paragraph" shall mean a portion of this Order identified by an Arabic numeral.

14. All terms not defined herein shall have their ordinary meaning, unless such terms are defined in the SDWA or its implementing regulations, in which case the statutory or regulatory definitions shall apply.

III. FINDINGS OF FACT AND CONCLUSIONS OF LAW

Based on the information in its possession, EPA makes the following findings of fact and conclusions of law:

15. Respondent, Mountaire Farms of Delaware, Inc. ("Mountaire"), is a corporation and is therefore a "person" within the meaning of Section 1401(12) of the SDWA, 42 U.S.C. § 300f(12).

16. Mountaire owns and operates a poultry processing facility on State Route 24 ("Facility") located approximately two miles east of Millsboro, in Sussex County, Delaware.

17. The "Site" is defined as both the Facility operated by Mountaire and all private property within the perimeter of the polygon defined to the north by State Route 297 (Morris Mill Road), on the west by State Route 305 (Hollyville Road) to the east by Swan Creek and Logwood Pond and to the south by Indian River (Attachment1).

18. The substances nitrate and nitrite are "contaminants" within the meaning of Section 1401(6) of the SDWA, 42 U.S.C. § 300f(6).

19. The EPA sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. See 40 C.F.R. § 141.32(e)(20). Nitrate in drinking water is colorless and odorless. Ingestion of nitrate, which is converted to nitrite in the body, interferes with the oxygen carrying capacity of blood, potentially resulting in cyanosis and, at higher levels, asphyxia. High levels of nitrate in water can lead to high levels of nitrite in infants, resulting in a blood disorder known as methemoglobinemia, or "blue baby syndrome," that can be fatal if left untreated. Infants up to three months of age are the most susceptible with regard to nitrate. This is due to the fact that about 10 percent of ingested nitrate is transformed to nitrite in the adult and child, whereas 100 percent of ingested nitrate can be transformed to nitrite in the infant. In particular, infants with a weight of less than 4 kilograms (8.8 lbs.) represent a high risk subpopulation. Pregnant women, adults with reduced stomach acidity, and individuals deficient in the enzyme that changes methemoglobin back to normal hemoglobin are all susceptible to nitrite-induced methemoglobinemia. Prolonged intake of high levels of nitrate has been linked to gastric problems due to the formations of nitrosamines, which have been associated with symptoms of marked hypertension including sharply decreased venous pressure, decreased systolic pressure, increased diastolic pressure, increased heart rate, and deep respirations.

20. The MCL for nitrate identified under the Safe Drinking Water Act is 10 mg/l as nitrogen. See 40 C.F.R. § 141.62. EPA has established this drinking water standard to protect against the adverse effects of nitrate based on studies conducted to establish the MCL. See 40 C.F.R. § 141.32 (e)(20). At 10 mg/l or more, nitrate poses a health threat to the population in general, and an acute health threat to children under six months of age.

21. The MCL for nitrite identified under the Safe Drinking Water Act is 1 mg/l as nitrogen. See 40 C.F.R. § 141.62. EPA has established this drinking water standard to protect against the adverse effects of nitrite based on studies conducted to establish the MCL. See 40 C.F.R. § 141.32 (e) (21).

22. The MCL for total nitrate plus nitrite identified under the Safe Drinking Water Act is 10 mg/l as nitrogen. See 40 C.F.R. § 141.62. EPA has established this MCL for the sum of nitrate and nitrite to allow for the fact that the toxicity of nitrate and nitrite are additive based on studies conducted to establish the MCL. See 40 C.F.R. §141.32 (e) (20).

23. Nitrate in drinking water at levels in excess of the current 10 mg/l MCL has been responsible for serious methemoglobinemia and mortality in some infants under the age of approximately six months. Levels of nitrate between 10 and 25 mg/l could cause adverse health effects in the general population, with the degree of impact related to the contribution of nitrates from drinking water and the sensitivity of the individual.

24. Mountaire has had operational responsibility for the Facility since May 15, 2000. The Facility includes a poultry processing plant, feed mill, chicken hatchery, a wastewater treatment plant for industrial waste and domestic sewage, and agricultural lands. A poultry processing facility has operated on this property since at least 1987. The Facility waste management system

is operated under a State permit issued to the Respondent for a waste lagoon and spray irrigation fields.

25. The water-bearing formations underlying the Site and the surrounding residential water supply wells consist of the Columbia surficial aquifer and the deeper Upper Chesapeake aquifer, which currently supply drinking water for human consumption to both the onsite public water supply and residential wells. The productive zones of these aquifers consist of fine grained to coarse sands with yields sufficient to supply a public water system. Sussex County, Delaware, relies solely on ground water for public drinking water supplies. Private wells in this area are reportedly completed to depths of 50 to 100 feet, and have adequate yield to supply the needs of a household. Therefore, the aquifers are underground sources of drinking water within the meaning of 40 C.F.R. § 144.3. The soils in the area are from the Evesboro-Rumford association, according to the U.S. Department of Agriculture and characterized as being excessively drained soils that have a rapidly permeable subsoil of sand to sandy loam. Such characteristics make the aquifers vulnerable to infiltration of contaminants.

26. Poultry processing produces nitrogenous organic waste, which is present in the Facility wastewater. This Facility operates a spray irrigation system to dispose of the poultry processing plant wastewater at a rate of approximately 1.4 million gallons per day (MGD) onsite. Ammonia is produced by the breakdown of waste fluids.

27. Where aerobic conditions are present, such as is typical in a surficial aquifer, ammonia will be converted to nitrate and nitrite. Due to their high solubility, nitrate and nitrite will readily leach into ground water. Plants can uptake nitrates and nitrites, but only in limited quantities. Mountaire is required to maintain ground vegetation year-round to utilize the nitrates; however, quantities of nitrates and nitrites in the soil in excess of levels which can be used by plants can migrate to ground water where they may adversely impact private and public drinking water wells.

28. EPA finds that poultry operations at the Facility have impacted the nitrate levels in the ground water used as a source of drinking water and therefore caused or contributed to the contamination of the USDW underlying the Site. Ground water sampling has been conducted on the Site both by Respondent, and by the previous owner, Townsend Inc., through an established monitoring program, since at least 1987. Nitrate levels onsite have been plotted by the Delaware Department of Natural Resources and Environmental Control (DNREC) for several quarters during 1987, 1991, 1993, 1995, 1999, 2001, and 2002 (Attachment 2). The results from this network of monitoring wells indicate that the levels of nitrate in the ground water have ranged from 1- 200 mg/l nitrate onsite over time. The most recent samples, dated October 3, for the third quarter of 2002, show results ranging from less than 1 mg/l to 30 mg/l for nitrate.

29. The Delaware Department of Health and Social Services (DHSS) has conducted sampling of private wells within the Site boundary in the past several months. Samples from eleven (11) residential wells within the perimeter of the Site have been collected and ten (10) of those exceed 10 mg/l, with levels ranging from 12.7 to 25.6 mg/l (Attachment 3). The remaining

well appears to be a deeper well and had levels below the detection level of 0.3 mg/l. This well also has either ion exchange or carbon treatment unit installed. The concentration of nitrate in the six (6) wells indicate that the USDW underlying the Site is contaminated and the consumption of drinking water with these levels of nitrate may present an imminent and substantial endangerment to public health.

30. Mountaire is also a public water supply with an onsite well serving the Facility's over 1,000 employees. In 1991, a level exceeding 20 mg/l nitrate was detected in the onsite well. At that time, the DHSS required Townsend Inc., the prior owner, to provide nitrate treatment or drill a new well to meet drinking water standards. Townsend Inc. drilled a new, deeper well and returned to compliance with the MCL for nitrate. Mountaire continues to operate this well in compliance with the MCL for nitrate.

31. EPA has consulted with DHSS and DNREC to confirm that the information on which this Order is based is correct. DHSS has notified EPA that it lacks the authority to order the provision of an alternate water supply for private water supply wells. EPA has concluded that all the requisite conditions have been satisfied for EPA action under Section 1431(a)(1) of the SDWA, 42 U.S.C. § 300i(a)(1).

32. EPA finds that there are contaminants present in the USDW underlying the Site which may present an imminent and substantial endangerment to the health of persons drinking water from the public and private residential water supply wells contaminated (by activities at the Facility.)

33. Section 1431(a) of the SDWA, 42 U.S.C. § 300i(a), specifies that the Administrator, upon receipt of information that a contaminant which is present in or likely to enter a public water system or an underground source of drinking water may present an imminent and substantial endangerment to the health of persons, may issue such order as may be necessary to protect the health of such persons, including travelers. EPA has determined the actions required by this Order are necessary to protect the health of persons who are or may become users of the public water systems and/or USDW identified above.

IV. ORDER ON CONSENT

Pursuant to the authority issued to the EPA Administrator by Section 1431(a)(1) of the SDWA, 42 U.S.C. § 300i(a)(1), and delegated to the Regional Administrator, and redelegated to the Director of the Water Protection Division, Mountaire is ORDERED and hereby consents to the following:

Provision of Emergency Drinking Water for Affected Population

34. Within 24 hours of receipt of this Order, Mountaire shall offer to provide an emergency supply of drinking water for human consumption to all the residences within the Site which have been or will be sampled by DHSS or EPA and found to exceed 10 mg/l nitrate, the locations of which are shown on Attachment 4. Such offer shall be in the form of a letter, with

accompanying explanation, a copy of which is included as Attachment 4. If there is no response from a residence within ten (10) calendar days, Mountaire shall repeat the notification attempt with a certified letter return receipt requested. Such water is to be provided by Mountaire at no cost to the residents.

35. The water for human consumption required to be provided under Paragraph 34 shall mean bottled water, bulk water from a tank truck, or water from some other source acceptable to DHSS and EPA. Such water shall meet the water quality requirements of 40 C.F. R. § 141, Subpart G, for domestic uses and shall be provided at a location and in a container convenient to the residents. Delivery shall continue at a frequency convenient to the residents and be of an adequate volume to meet the day-to-day needs of the residents until a permanent alternate water supply is in place in accordance with Paragraph 36.

36. Within sixty (60) calendar days of the effective date of this Order, Mountaire shall submit to EPA, DNREC and DHSS for review and EPA approval (after consultation with DNREC and DHSS), a plan to provide a permanent alternate water supply ("Alternate Water Supply") to the residences identified in Paragraph 34 above. This plan must describe available options for each location which are acceptable to the applicable resident, including drilling a new well, or provision of point of entry or point of use devices for the treatment of the drinking water such that it will be in compliance with all state drinking water requirements and of adequate volume to meet the day-to-day needs of the residents.

37. If a point of entry or point of use treatment device is chosen as the proposed remedy, it must comply with Delaware Code Section 22.211. The Alternate Water Supply and any long term maintenance of a point of use or point of entry device must be provided at no cost to the residences. Maintenance of these devices will be provided by Mountaire until it can be reliably proven that the pre-treated water is in compliance with all drinking water standards for nitrates.

Monitoring/Remediation Program

38. Commencing with the effective date of this Order, Mountaire shall implement a ground water monitoring/remediation program ("Program"). The Program shall consist of: 1) operation of Mountaire's wastewater treatment/spray irrigation systems in a manner which controls nitrogen loadings to the spray fields and insures that the annual average nitrate levels at the Facility are below 10 mg/l on any spray field; 2) continued operation of Mountaire's irrigation and production wells in areas of elevated nitrate levels in order to reduce overall nitrate levels at the Facility; and 3) quarterly monitoring for a two year period, on a schedule to be approved by EPA, of existing wells numbered 35, 36, 37, 42, 43, 47 (depicted on Attachment 5) and one or more wells to replace monitoring wells 38 and 39 which are no longer in use, so that samples from the wells accurately represent ground water conditions down gradient of the Facility. Notwithstanding any other provision of this Order, any modification to the Program shall be consistent with the scope of the Program as set forth in this paragraph.

39. For two years commencing with the effective date of this Order, Mountaire shall

submit to EPA, at the address specified in Paragraph 54, results of the quarterly monitoring conducted as part of the Program. Sampling results shall be submitted to EPA within ten (10) days of receipt by Mountaire.

V. EPA APPROVALS

40. EPA reserves the right to comment on, modify, and/or direct changes to any plan or program, report, specification, or schedule submitted pursuant to or required by this Order. When a document is submitted to EPA for approval, EPA shall provide Respondent with its written approval, approval with conditions and/or modifications, or disapproval. If such document submittal is disapproved, in whole or in part, EPA shall either (a) notify Respondent that EPA will modify the document to cure the deficiencies and require Respondent to implement such modifications or (b) direct Respondent to modify the document to cure the deficiencies. Revised submittals are also subject to EPA approval, approval with conditions and/or modifications, or disapproval.

41. Upon receipt of a notice of disapproval and/or notice directing modification of the document, Respondent shall, within fourteen (14) calendar days, cure the deficiencies and resubmit the document for approval. Should EPA determine that Respondent has failed to cure any deficiency, EPA reserves the right to modify the document to correct the deficiency and to direct the Respondent to implement the document as modified.

42. Upon receipt of EPA's written approval, Respondent shall commence work and implement any approved plan or program in accordance with the schedule and provisions contained therein. If no schedule is contained in an approved plan or program, then Respondent shall commence work and implementation of the plan or program within fourteen (14) calendar days of receipt of EPA's written approval of the plan or program. In the event EPA disapproves the plan or program, in whole or in part, EPA may require Respondent to implement any non-deficient portion of the plan or program.

43. Any EPA-approved plan or program, report, specification, or schedule developed hereunder shall be incorporated by reference into this Order as if set forth fully herein. Prior to EPA's written approval, no plan, program, report, specification, or schedule shall be construed as approved and final. Oral advice, suggestions, or comments given by EPA, DNREC or DHSS representatives do not constitute an official approval, nor shall any oral approval or oral assurance of approval be considered binding.

44. Noncompliance with any plan, program, report, specification, or schedule approved by EPA pursuant to this Order shall be considered a violation of this Order and may subject Respondent to the statutory penalty provisions and/or enforcement actions as provided by Section 1431 of the SDWA, 42 U.S.C. § 300i.

45. Any changes or modifications proposed by Respondent to any EPA-approved plan, program or timetable required by this Order must be approved in writing by EPA prior to

implementation.

VI. PARTIES BOUND

46. The provisions of this Order shall apply to and be binding upon Respondent and its employees, agents, successors, and assigns. Notice of this Order shall be given to any successors in interest prior to transfer of the ownership or operation of the Facility or any portion thereof. Action or inaction of any person, firm, contractor, employee, agent, or corporation acting under, through, for or in participation with Respondent, shall not excuse any failure of Respondent to fully perform the obligations under this Order.

47. Respondent shall provide a copy of this Order to any and all business organizations, contractors, subcontractors, laboratories, or consultants which are retained to conduct or monitor any portion of the work performed pursuant to this Order. A copy of the Order shall be provided within seven (7) calendar days of the effective date of this Order or on the date of retention of such contractor, subcontractor, laboratory, or consultant.

48. Respondent shall give notice to EPA at least thirty (30) calendar days prior to the sale, lease, or other transfer of ownership, operation, and/or management of this Facility or any portion thereof.

VII. GENERAL PROVISIONS

49. Respondent admits the jurisdictional allegations set forth herein and waives any defenses it might have as to jurisdiction and venue and agrees not to contest any of the findings of fact or conclusions of law herein in any action to enforce this Order. Except as to any proceeding brought by EPA to enforce this Order, in agreeing to this Order Respondent makes no admission of fact or law and reserves all rights and defenses available regarding liability or responsibility in any other legal proceeding related to the subject matter of this Order. Respondent waives its right to seek judicial review of the issuance of this Order.

50. This Consent Order may be executed in any number of counterpart originals, each of which shall be deemed to constitute an original agreement, and all of which shall constitute one agreement. The execution of one counterpart by any party shall have the same force and effect as if that party had signed all other counterparts.

51. Respondent shall submit to EPA, DNREC and DHSS written reports each calendar quarter summarizing all actions taken in accordance with this Order ("Progress Reports"). Such Progress Reports shall be submitted on or before the 28th day following the end of each quarter until such time as EPA provides written notice that the reports are no longer necessary, or this Order is terminated.

52. All Progress Reports required by Paragraph 51 herein shall contain the following certification, which shall be signed by a responsible corporate officer:

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

The certification shall also include the name, title, date, and signature of the person or persons completing the certification.

53. For purposes of this Order, a responsible corporate officer shall be the president, secretary, treasurer, or vice-president in charge of a principal business function, or any other person who performs similar policy or decision-making functions for Respondent, if authority to sign documents has been delegated in accordance with corporate procedures.

54. All reports and other correspondence required by this Order shall be sent to :

EPA Contact: Amy Cohen (3WP32)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103
(215) 814-3296

DHSS Contact: Edward Hallock, Program Administrator
Office of Drinking Water
Division of Public Health
Delaware Department of Health and Social Services
Blue Hen Corporate Center Suite 203
Dover, DE 19901
(302) 739-5410

DNREC Contact: Rodney Wyatt, Division of Water Resources
Department of Natural Resources and Environmental Control
89 Kings Highway,
Dover, DE 19901
(302) 739-4762

55. Respondent shall use best efforts to obtain consent to provide water and/or access to each of the properties as needed to implement the provision of emergency water and other requirements of this Order. Respondent shall make a good faith effort to obtain consent from each resident. If unsuccessful in gaining consent, Respondent shall immediately notify EPA in

writing at the address specified in Paragraph 54, and describe its efforts to provide emergency water and/or otherwise obtain access. Following such notification, EPA may attempt to secure consent to provide an alternate water supply and/or access for Respondent, and if EPA is successful, Respondent shall immediately comply with this Order.

56. If any event occurs which causes delay in the achievement of any requirement of this Order, Respondent shall have the burden of proving that the delay was caused by circumstances beyond the reasonable control of Respondent or any entity controlled by Respondent, including but not limited to its contractors and consultants, which could not have been overcome by due diligence. Respondent shall notify EPA verbally within 72 hours, and in writing within seven (7) calendar days of the verbal notification, of the anticipated length and cause of the delay, the measures taken and/or to be taken to prevent or minimize the delay, and the timetable by which Respondent intends to implement these measures. If EPA agrees that the delay or anticipated delay has been or will be caused by circumstances beyond the reasonable control of the Respondent, the time for performance hereunder shall be extended for a period equal to the delay resulting from such circumstances. Respondent shall adopt all reasonable measures to avoid or minimize delay. Failure of Respondent to comply with the notice requirements of this paragraph shall constitute a waiver of Respondent's right to request an extension to meet the requirements of this Order.

57. Nothing in this Order shall be construed to limit or otherwise affect EPA's authority under any applicable law or regulation, including but not limited to, EPA's authority to conduct inspections, to seek access to property, to request the provision of information, or to bring a civil or criminal enforcement action under the SDWA or other applicable statutes or regulations.

58. Respondent may assert a confidentiality claim covering all or part of any information submitted to EPA pursuant to this Order. Any assertion of confidentiality must be accompanied by information that satisfies the items listed in 40 C.F.R. § 2.204(e)(4) or such claim shall be deemed waived. Information determined by EPA to be confidential shall be disclosed only to the extent permitted by 40 C.F.R. Part 2. If no such confidentiality claim accompanies the information when it is submitted to EPA, the information may be made available to the public by EPA without further notice to Respondent. Respondent may not assert any confidentiality claim with regard to any physical or analytical data.

59. To the extent authorized by the SDWA, EPA, its contractors, employees, and representatives are authorized to enter and freely move about the Facility pursuant to this Order for the purposes of, *inter alia*, interviewing Facility personnel and contractors; inspecting records, operating logs, and contracts related to compliance with this Order; reviewing the progress of the Respondent in carrying out the terms of this Order; conducting such tests, sampling, or monitoring as EPA or its representatives deem necessary; using a camera, sound recording, or other documentary type equipment; and verifying the reports and data submitted to EPA by the Respondent. Respondent shall provide EPA and its representatives access to the Facility at all reasonable times and to any other property to which access is required for implementation of this Order. Respondent shall permit such persons to inspect and copy all records, files, photographs, documents, and other writings, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Order and that are within the possession or under the control of

Respondent or its contractors or consultants.

60. Pursuant to Section 1431(b) of the SDWA, 42 U.S.C. § 300i(b), in the event that Respondent violates, fails or refuses to comply with the terms or require provisions of this Order, EPA may commence a civil action in the appropriate U.S. District Court to compliance with this Order and to assess a civil penalty of up to \$17,000 for each day in which such violation occurs or failure to comply continues. Failure to timely complete any requirement of this Order shall be deemed a violation of this Order, beginning on the first day that performance is scheduled to commence.

61. EPA expressly reserves all rights and defenses that it may have, including but not limited to the right to disapprove work performed by Respondent pursuant to this Order and to modify documents submitted by the Respondent and require that Respondent implement those modifications.

62. EPA hereby reserves all of its statutory and regulatory powers, authorities, rights, and remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation the assessment of penalties under 1431(b) of the SDWA, 42 U.S.C. § 300i(b). This Order shall not be construed as a covenant not to sue, release, waiver, or limitation of any rights, remedies, powers, and/or authorities, civil or criminal, which EPA has under the SDWA, or under any other statutory, regulatory, or common law authority of the United States. Nothing in this Order shall diminish, impair, or otherwise adversely affect the authority of EPA to enforce the provisions of this Order. This Order shall not be interpreted to relieve Respondent of its obligations to comply with any provision of the SDWA, its implementing regulations, or any other Federal, state, or local law.

63. This Order shall not limit or otherwise preclude EPA from taking additional enforcement action, civil or criminal, pursuant to the SDWA, or any other available legal authority, should EPA determine that such action is appropriate. Issuance of this Order is not an election by EPA to forego any civil or criminal action otherwise authorized under the SDWA or other laws.

64. All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable local, state, and Federal laws and regulations. Respondent shall obtain or cause its representative to obtain all permits and approvals necessary under such laws and regulations to perform work pursuant to this Order and shall submit timely applications and requests for any such permits and approvals.

65. This Order may be modified only upon the written consent of both parties.

66. If any provision or authority of this Order, or the application of this Order to any party or circumstance, is held by any judicial or administrative authority to be invalid, the application of such provision(s) to other parties or circumstances and the remainder of the Order shall remain in force and shall not be affected thereby.

VIII. EFFECTIVE DATE OF ORDER

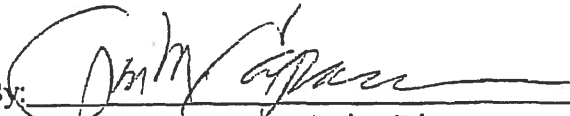
This Order shall be effective immediately upon Respondent's receipt of the executed Order. If modifications are made to this Order, such modifications will be effective on the date received by Respondent. This Order shall remain in effect until the provisions identified in the Order have been met and EPA has certified its approval of the same in writing. This Order shall constitute final agency action for purposes of Section 1448 of the SDWA, 42 U.S.C. § 300j-7.

IX. TERMINATION AND SATISFACTION

The provisions of this Order shall be deemed satisfied upon Respondent's receipt of written notice from EPA that Respondent has demonstrated, to the satisfaction of EPA, that the terms of this Order have been satisfactorily completed.

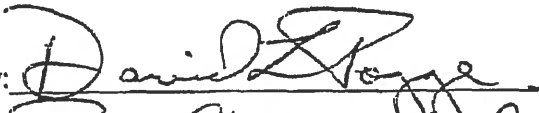
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region III

Date: 5/12/03

By: 
Jon M. Capacasa, Acting Director
Water Protection Division

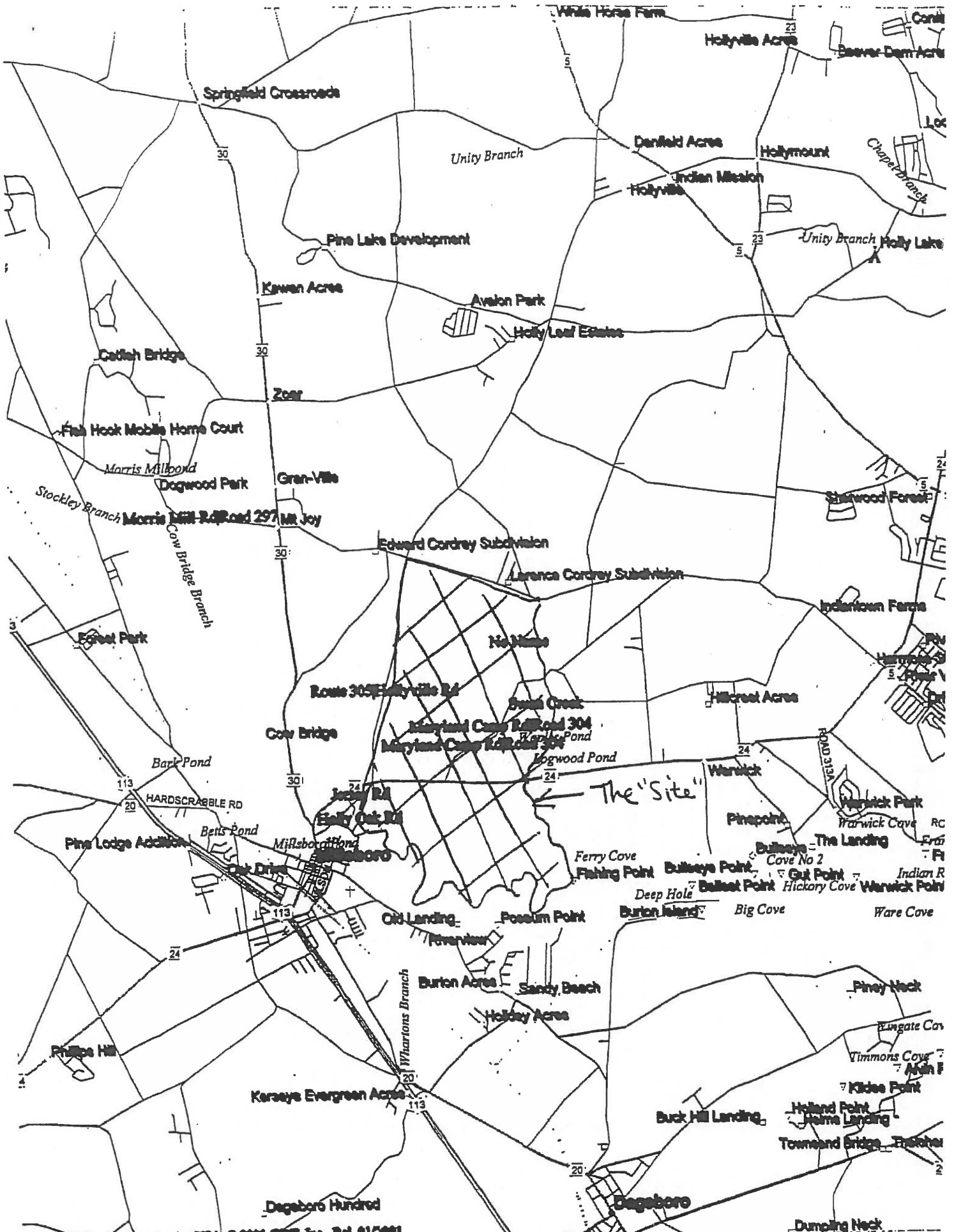
Mountaire Farms of Delaware, Inc.

Date: 4/22/03

By: 
Title: President and COO

Attachment 1
(Referenced in paragraph 17)

Map indicating Mountaire Farms property boundary (approximate)



Attachment 2
(Referenced in paragraph 28)

Contour Maps Indicating
Nitrate Levels from Monitoring Well Data

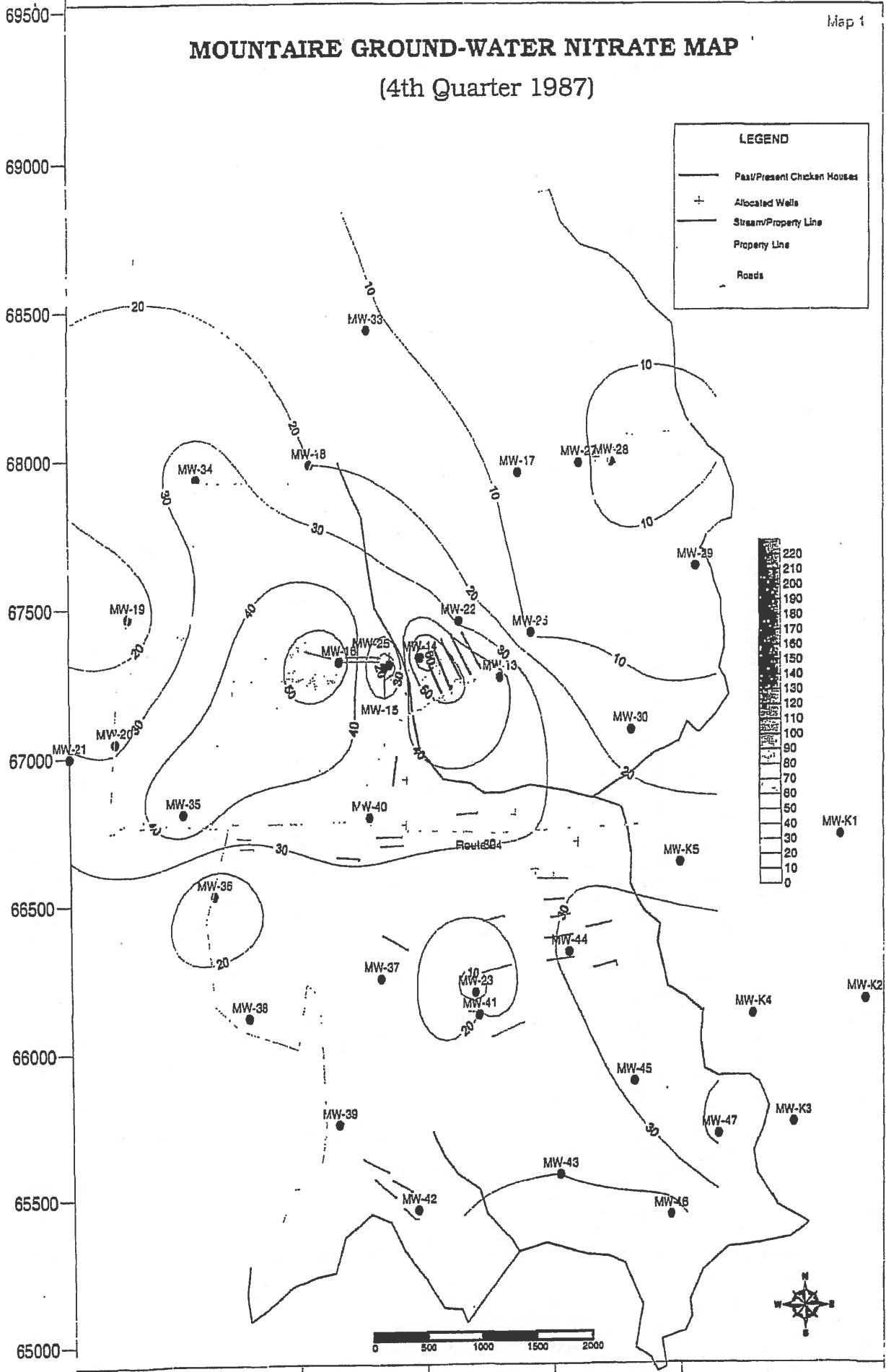
Mountaire Ground -Water Nitrate Map (4 th Quarter 1987)	Map 1
Mountaire Ground -Water Nitrate Map (1 st Quarter 1991)	Map 2
Mountaire Ground -Water Nitrate Map (2 nd Quarter 1991)	Map 3
Mountaire Ground -Water Nitrate Map (3 rd Quarter 1991)	Map 4
Mountaire Ground -Water Nitrate Map (4 th Quarter 1991)	Map 5A
Mountaire Ground -Water Nitrate* Map (1 st Quarter 1993)	Map 9A
Mountaire Ground -Water Nitrate Map (3 rd Quarter 1993)	Map 10A
Mountaire Ground -Water Nitrate Map (2 nd Quarter 1995)	Map 14A
Mountaire Ground -Water Nitrate Map (2 nd Quarter 1999)	Map 16
Mountaire Ground -Water Nitrate Map (November 2001)	Map 18A
Mountaire Ground -Water Nitrate Map (1 st Quarter 2002)	Map 19A

(*mislabeled)

MOUNTAIRE GROUND-WATER NITRATE MAP (4th Quarter 1987)

LEGEND

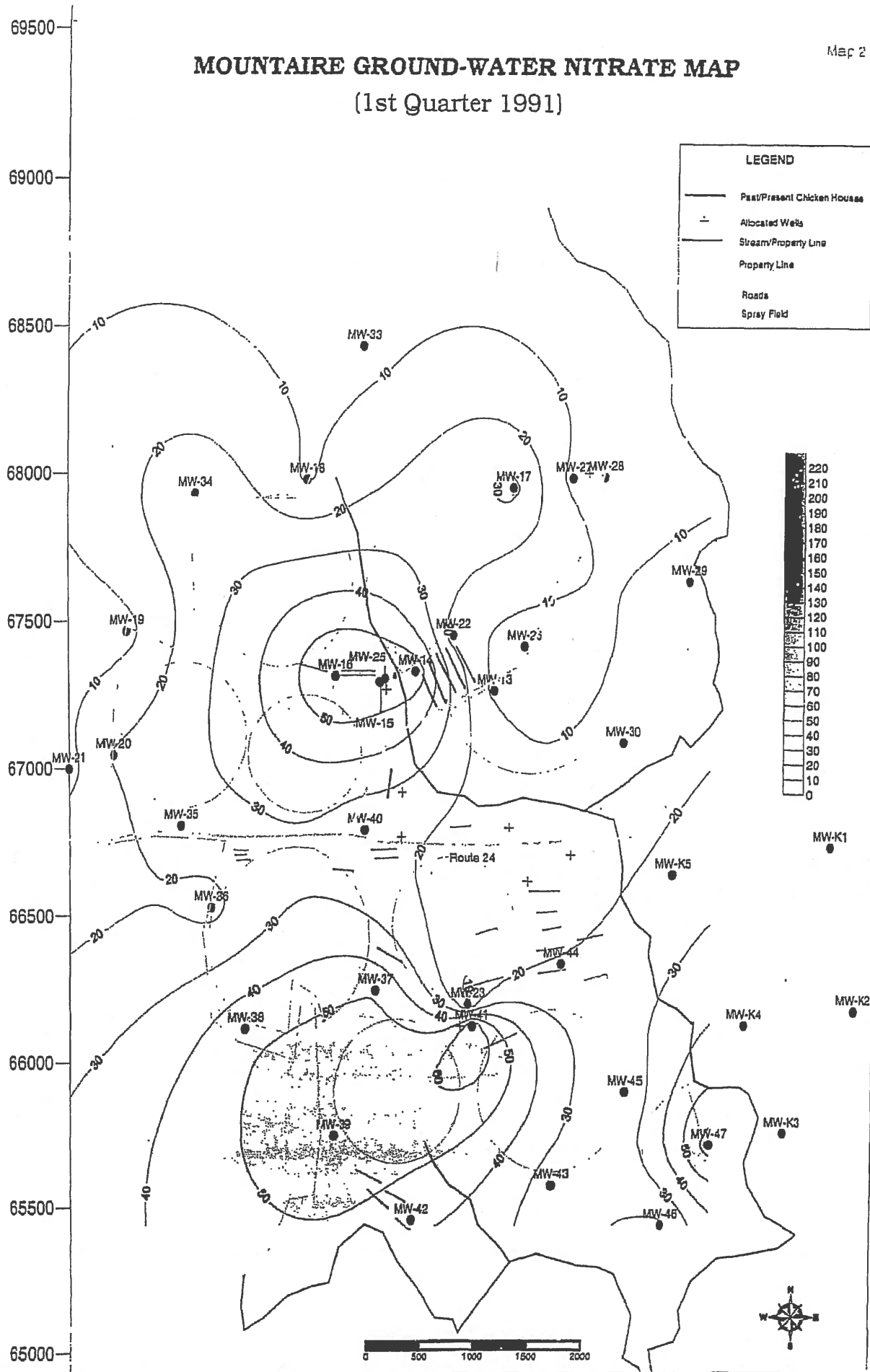
- Past/Present Chicken Houses
- + Allocated Wells
- Stream/Property Line
- Property Line
- Roads



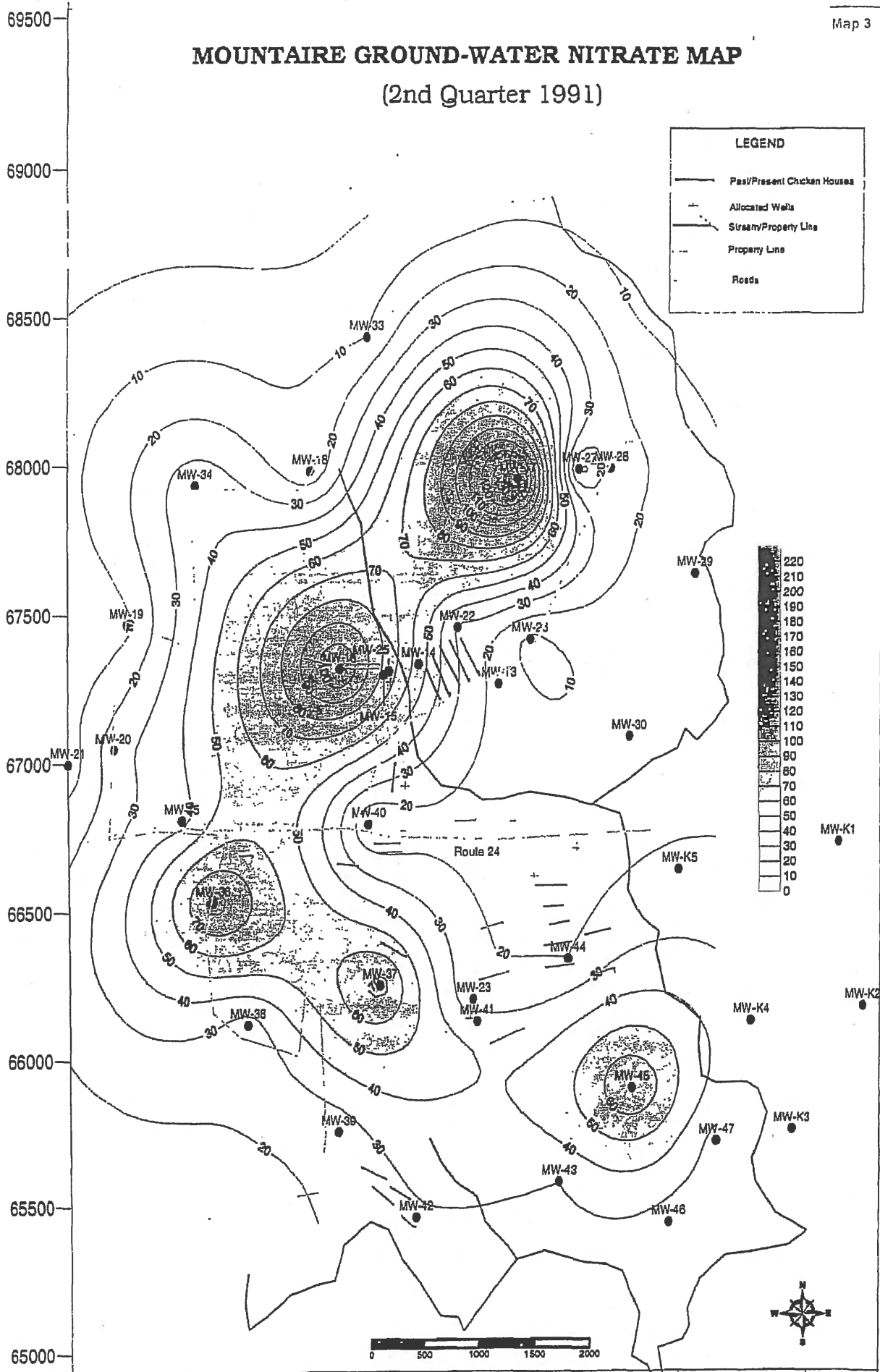
MOUNTAIRE GROUND-WATER NITRATE MAP

(1st Quarter 1991)

Map 2



MOUNTAIRE GROUND-WATER NITRATE MAP (2nd Quarter 1991)

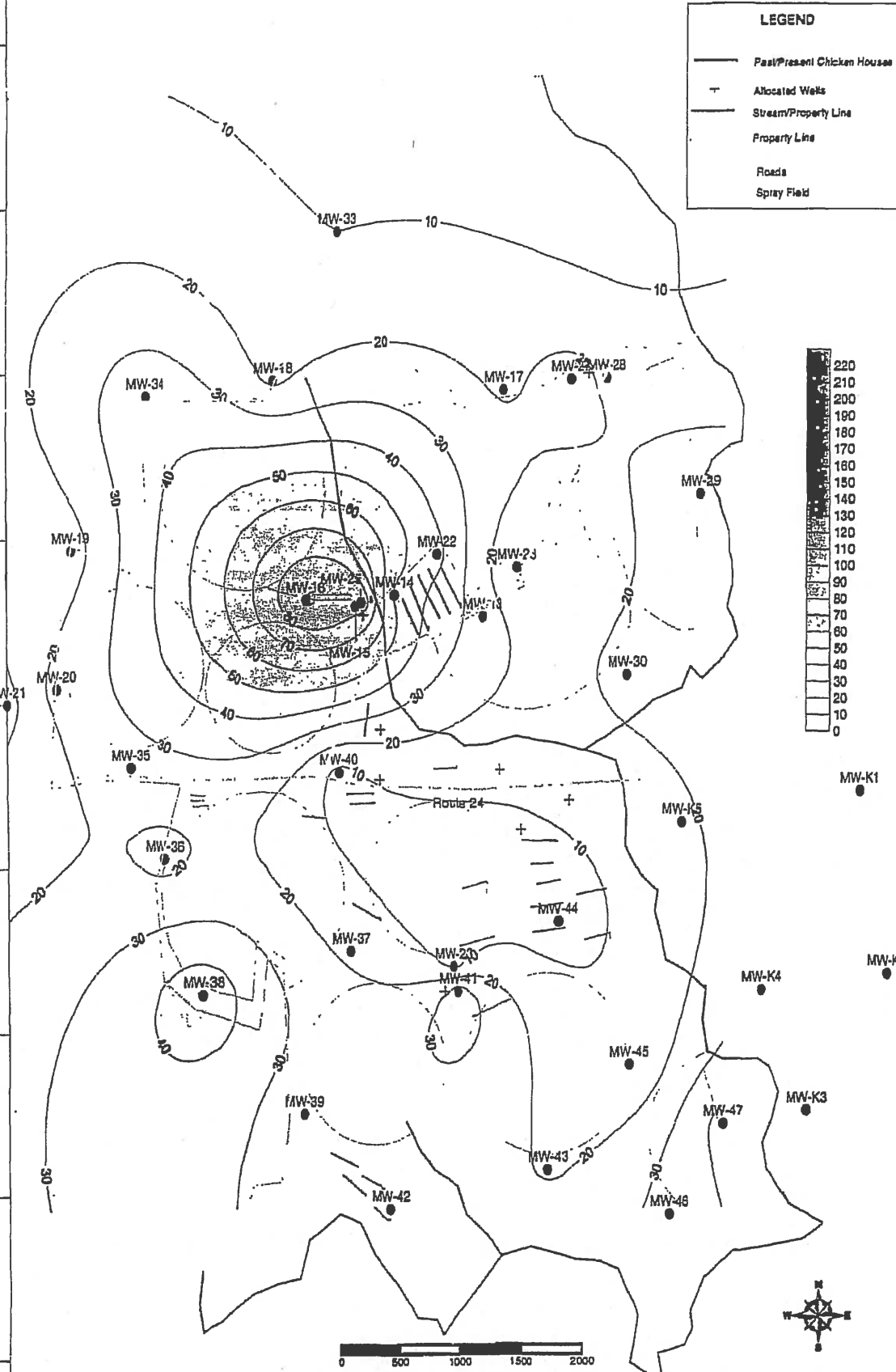


MOUNTAIRE GROUND-WATER NITRATE MAP (3rd Quarter 1991)

69500
69000
68500
68000
67500
67000
66500
66000
65500
65000

LEGEND

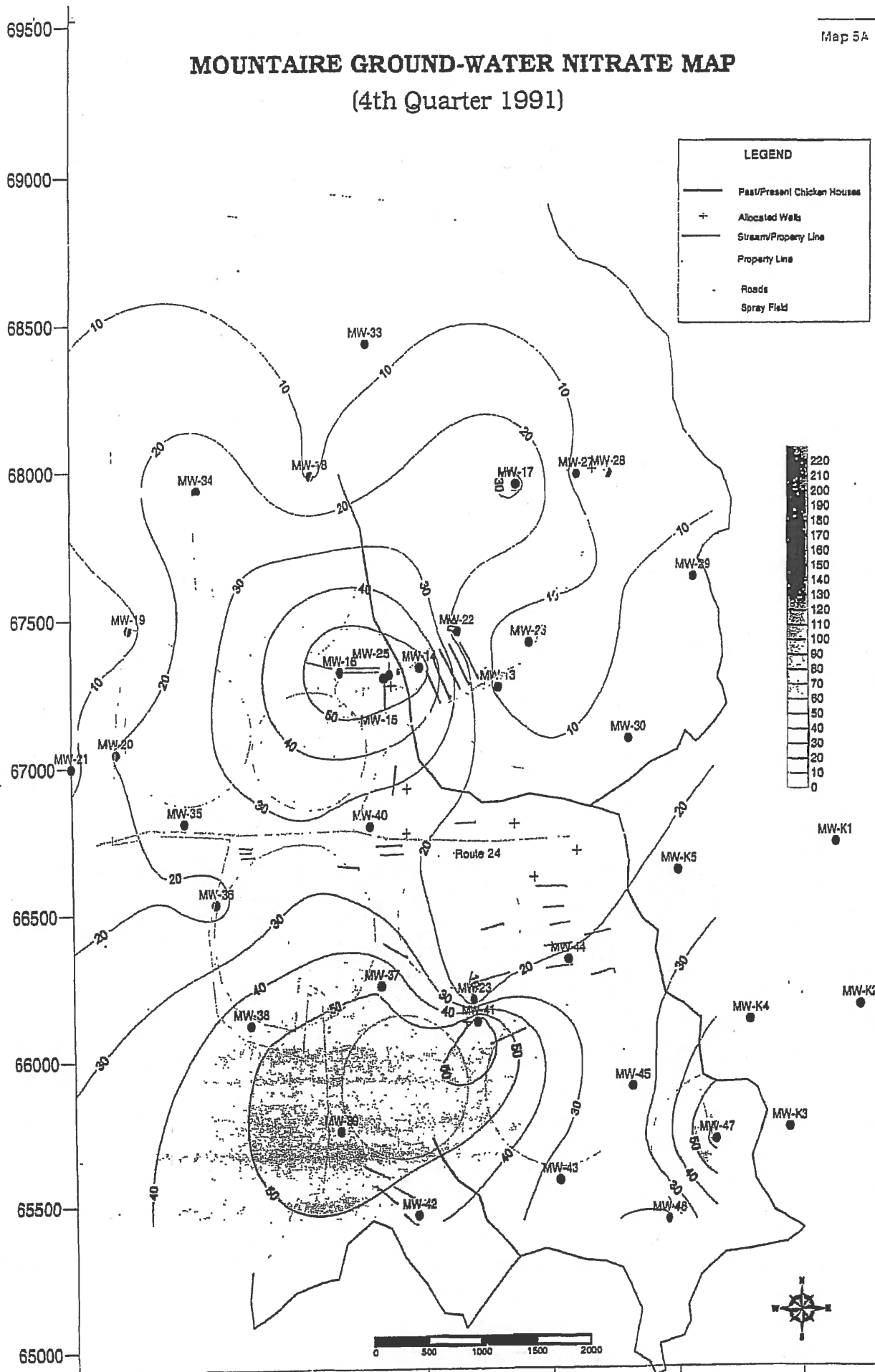
- Past/Present Chicken Houses
- + Allocated Wells
- Stream/Property Line
- Property Line
- Roads
- ▨ Spray Field



MOUNTAIRE GROUND-WATER NITRATE MAP (4th Quarter 1991)

LEGEND

- Past/Present Chicken Houses
- + Allocated Wells
- Stream/Property Line
- Property Line
- - - Roads
- ▭ Spray Field



69500

Map 9A

MOUNTAIRE GROUND-WATER CONTOUR MAP

(1st Quarter 1993)

69000

LEGEND

- Past/Present Chicken Houses
- Allocated Wells
- Stream/Property Line
- Property Line
- Roads
- Spray Field

68500

68000

67500

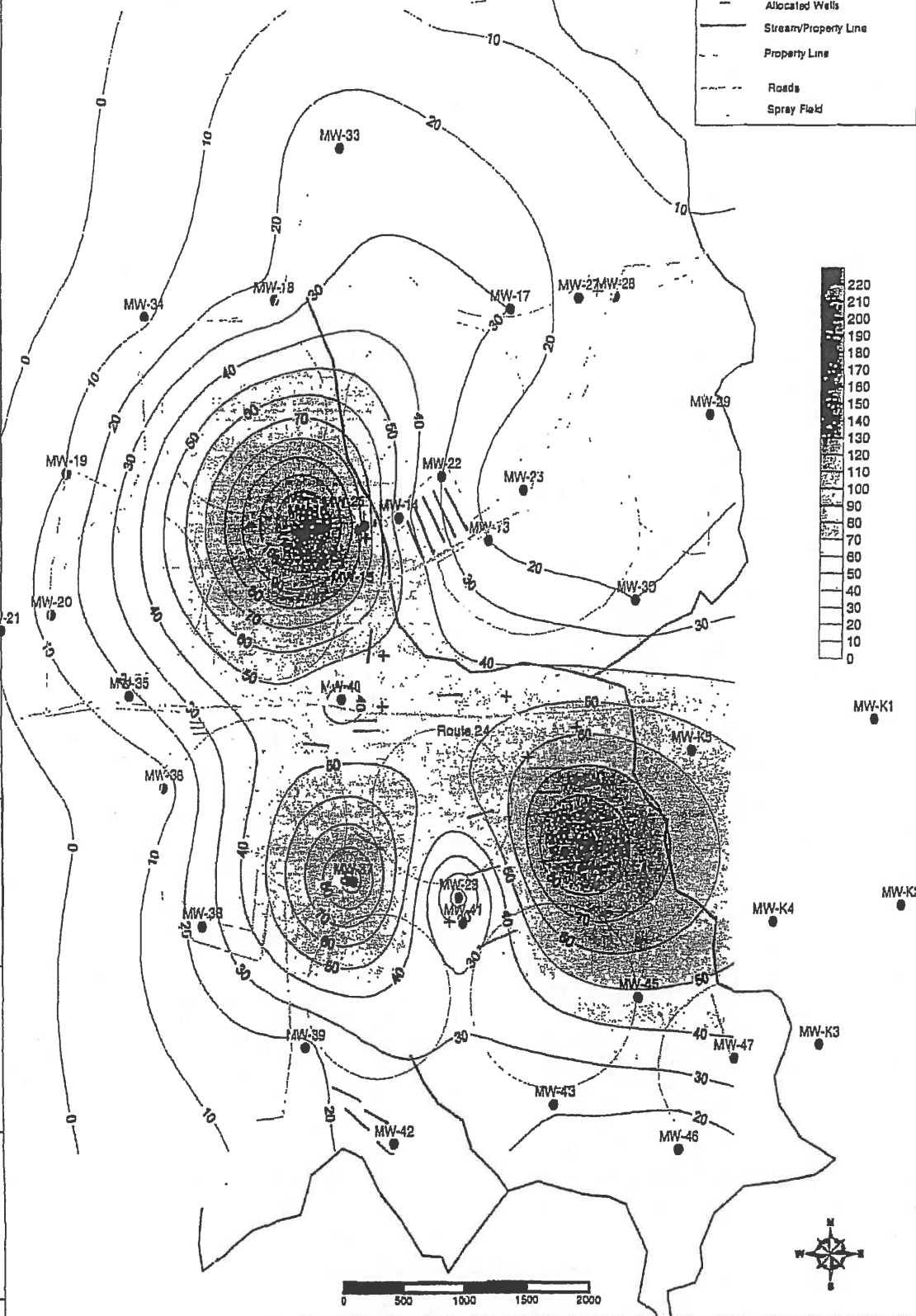
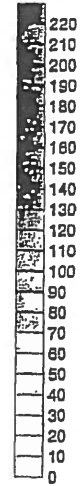
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66500

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65500

65000



212000

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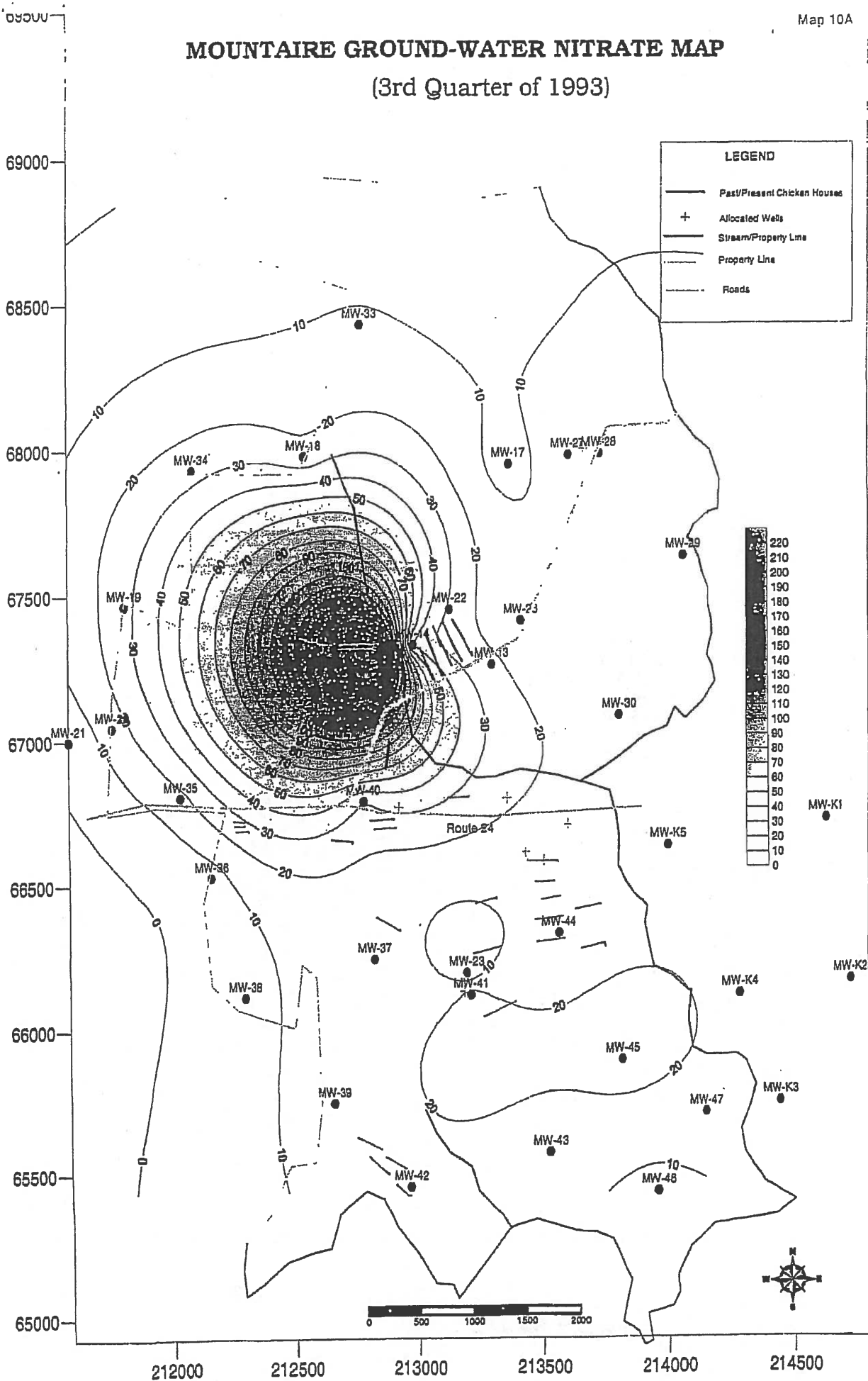
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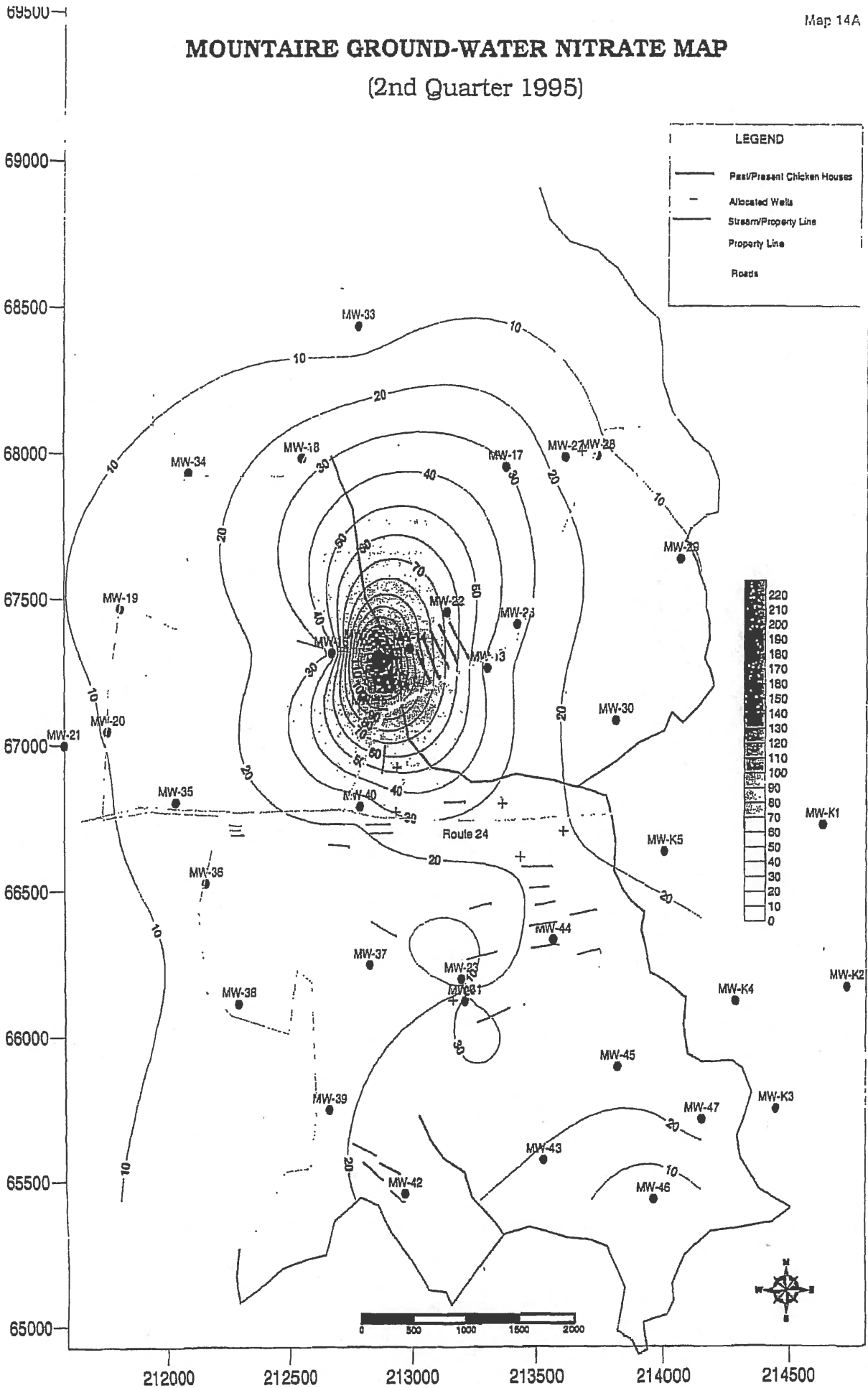
214000

214500

MOUNTAIRE GROUND-WATER NITRATE MAP (3rd Quarter of 1993)



MOUNTAIRE GROUND-WATER NITRATE MAP (2nd Quarter 1995)








69500

Map 16

MOUNTAIRE GROUND-WATER NITRATE MAP

(2nd Quarter 1999)

LEGEND

-  Past/Present Chicken Houses
-  Allocated Wells
-  Stream/Property Line
-  Property Line
-  Roads

69000

68500

68000

67500

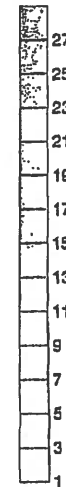
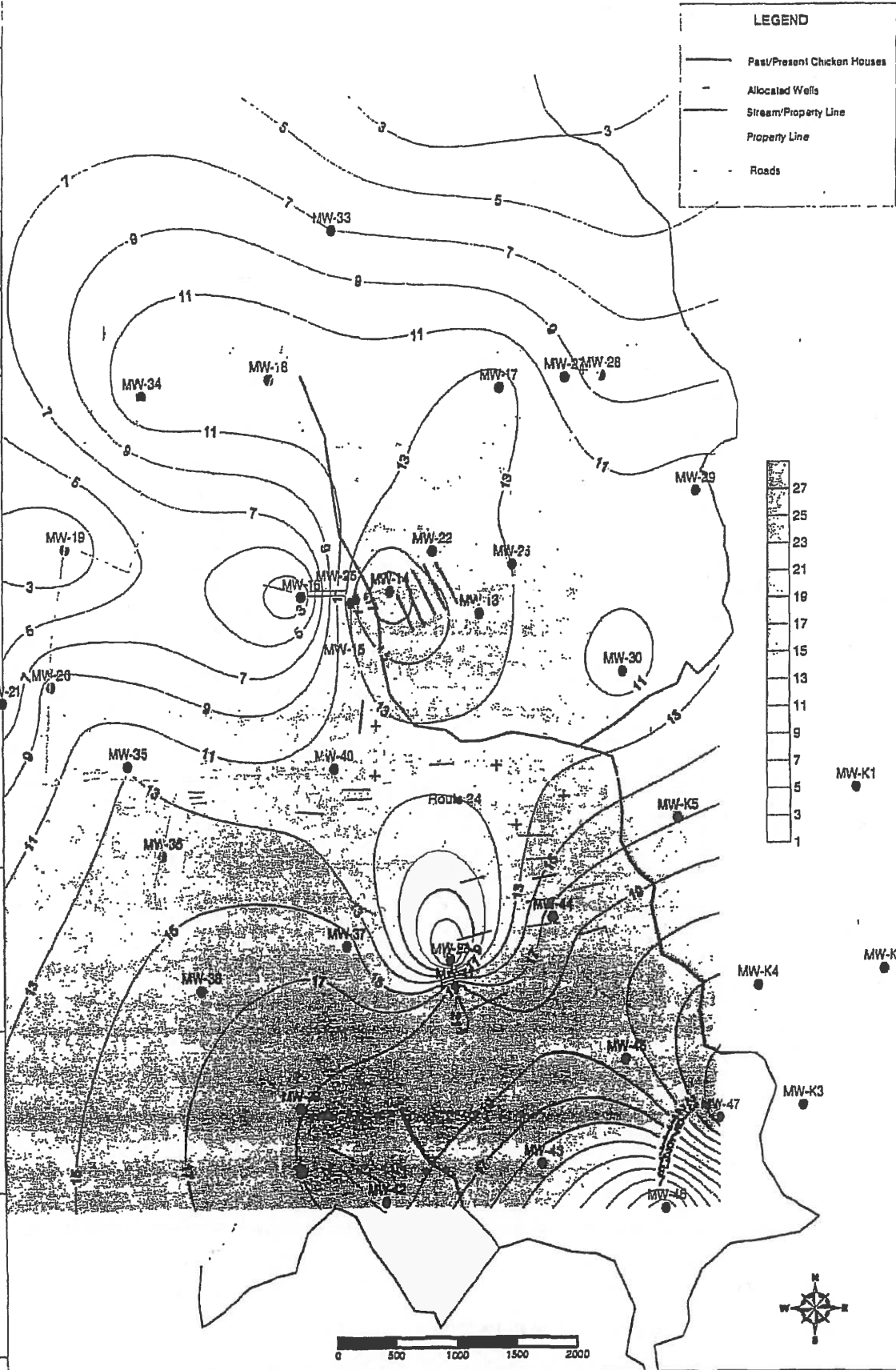
67000

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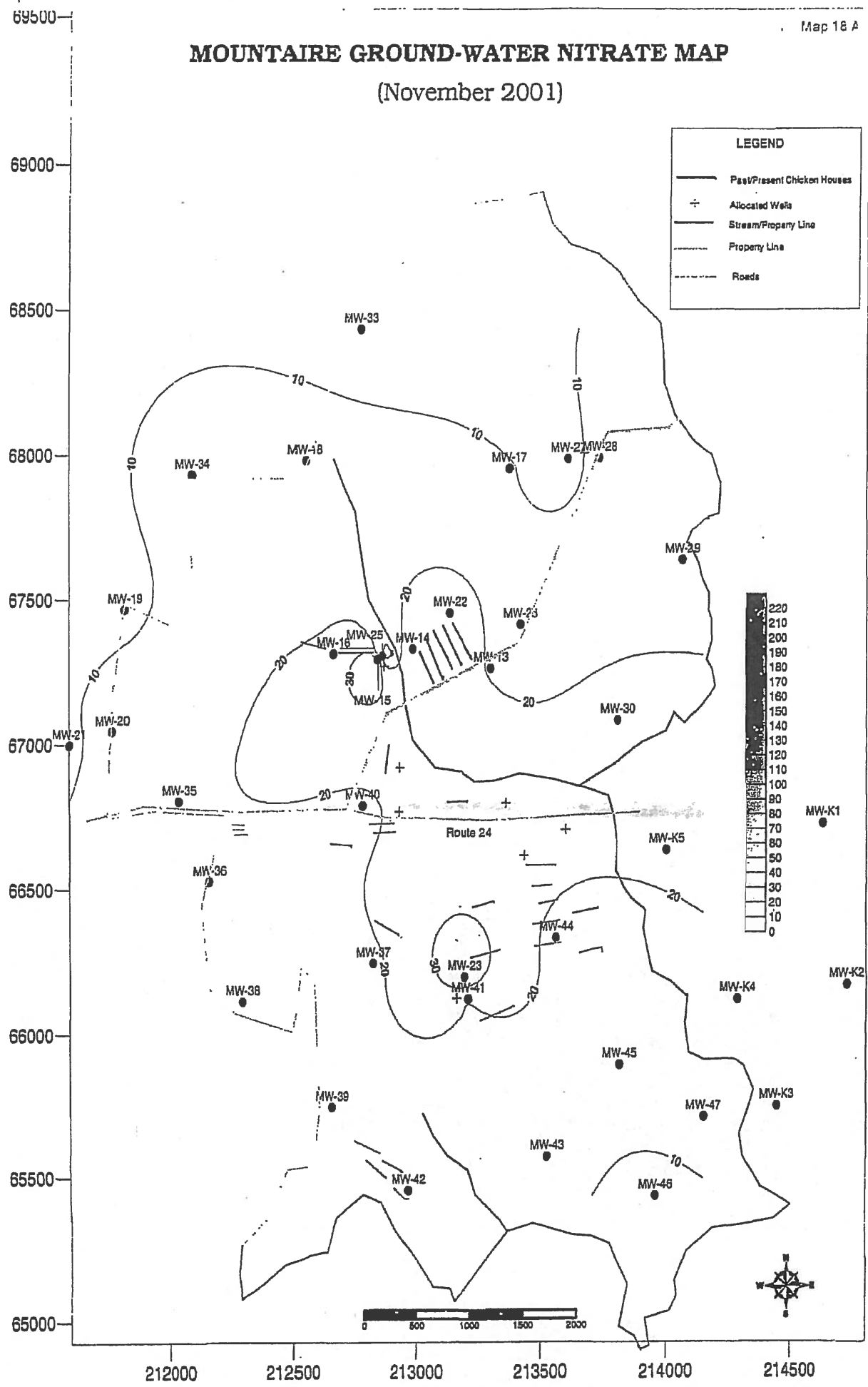
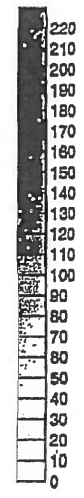
214000

214500

MOUNTAIRE GROUND-WATER NITRATE MAP (November 2001)

LEGEND

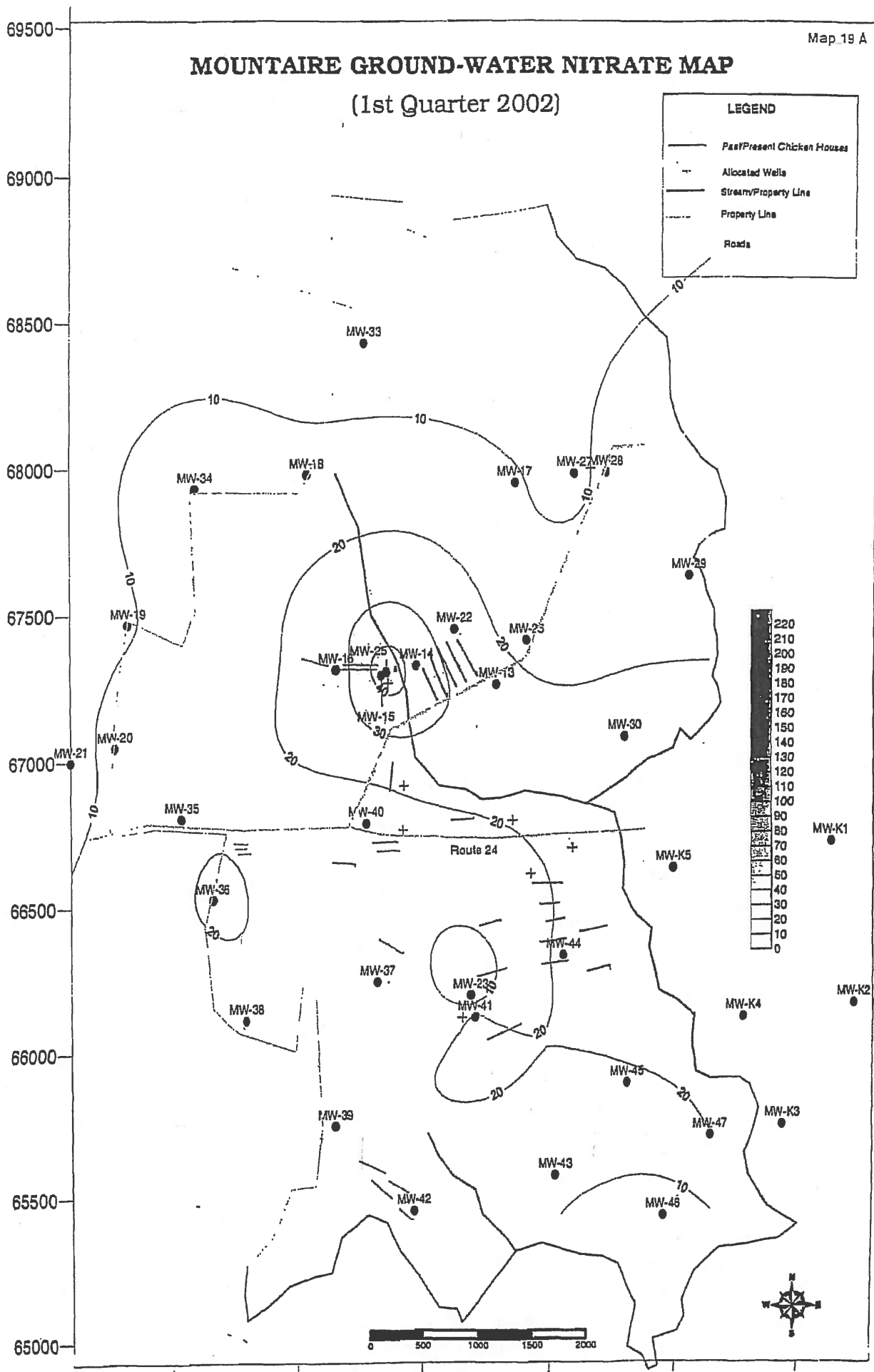
- Past/Present Chicken Houses
- + Allocated Wells
- Stream/Property Line
- - - Property Line
- - - Roads



MOUNTAIRE GROUND-WATER NITRATE MAP (1st Quarter 2002)

LEGEND

- Past/Present Chicken Houses
- - - Allocated Wells
- Stream/Property Line
- - - Property Line
- Roads



Attachment 3
(Referenced in paragraph 29)

Well Testing Data

Aerial Photo labeled Mountaire Farms indicating Nitrate levels of sampled residences

Mountaire Farms of DE, Inc.
Residential Private Wells
Testing Results

12/17/2002

Name	Address	City	Zip	Telephone #	Description	DNREC #	Treatment	Coliform	Nitrate (mg/L)	Comments
Patsy Taylor Fay Burton	RR 10, Box 12 P.O. Box 1374	Millsboro Millsboro	19966 19966	215-221-6699 302-933-0550	Yellow house on the end Gray with maroon shutters	seucure in box 181746	unknown cartridge w/ carbon	absent absent	12.7 <0.3	
Preston Wise	RR 10, Box 13	Millsboro	19966	302-933-0343	Tan house w/ teal-gray shutters	176527	unknown	absent	25.6	
Martha & Jr. Lee Wise	RR 10, Box 13	Millsboro	19966	302-934-6886	White house w/ black shutters	183508	unknown	absent	22	
Charles Burton		Millsboro			green farm house		none	Not sampled	18.3	
Pat Johnson	RR 10, Box 23	Millsboro	19966	302-934-8109	farmhouse, S. of Rt 24, W. of Mountaire	179159	only on kitchen sink	Not sampled	21.1	
Debbie Collins	Rt 8, Box 701	Millsboro	19966	302-934-8458	House N. of MD Camp Rd	didn't see wellhead	none	Not sampled	15.7	
Wayne Bryant		Millsboro			House S. of MD Camp Rd				18.4	
Lathbury Residence	RR 13 Box 4A	Millsboro	19966		North of 24	didn't see wellhead	none		23.5	
Bobby Johnson		Millsboro			On 24, Green House	didn't see wellhead	none		18.9	
Tom Johnson		Millsboro		302-934-8904 or 302-934- 4353	On 24, Blue Cape Cod	didn't see wellhead	none		18.9	

Mountaire Farms

United States Environmental
Protection Agency -- Region 3
Philadelphia, PA



12/17/02

15.7

18.4

21.1

18.9

23.5

18.9

18.3

25.6

12.7

22.0

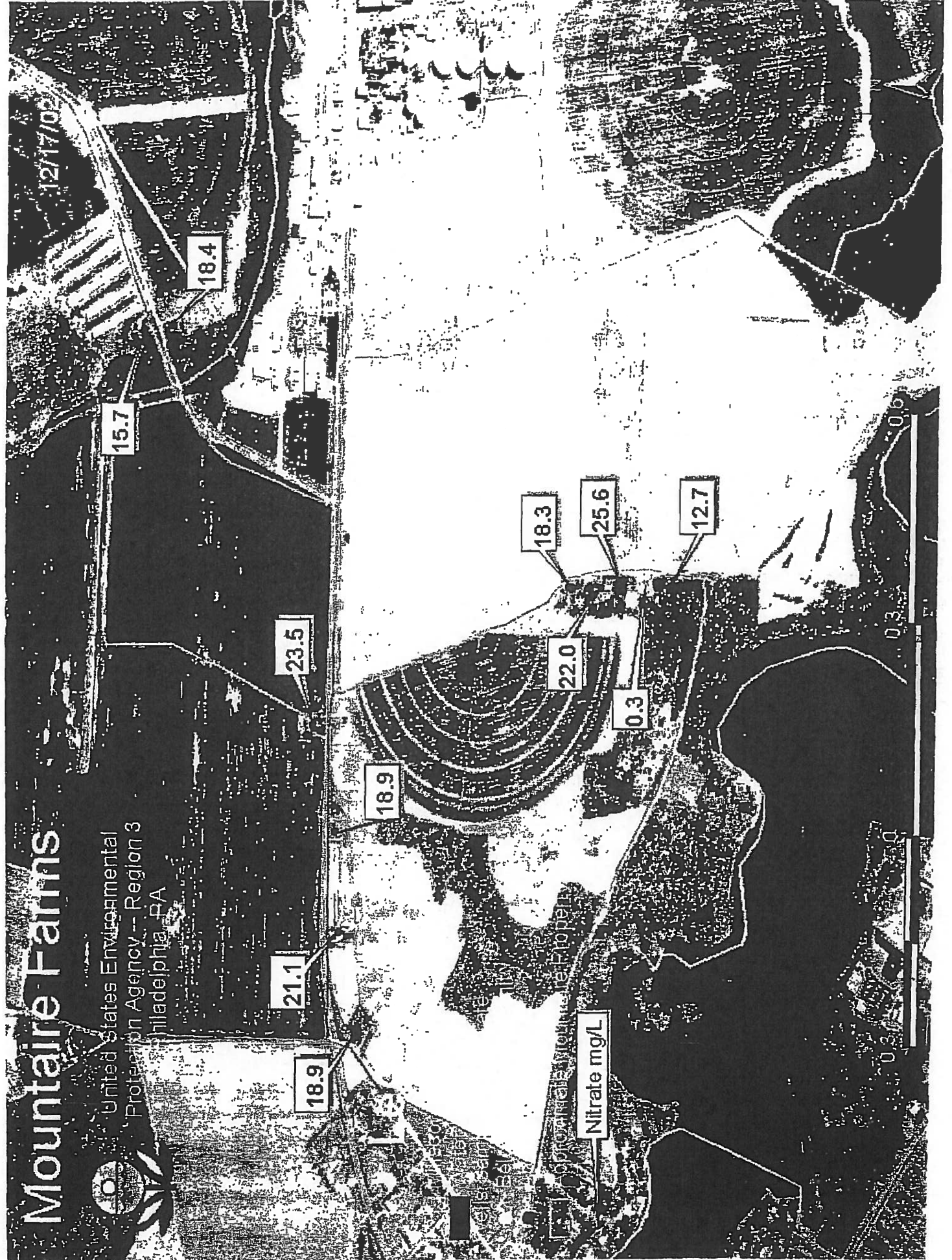
0.3

Nitrate mg/L

0.6

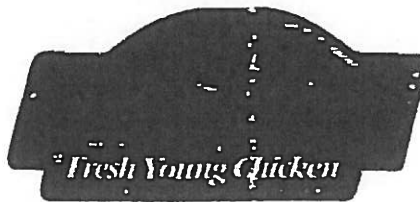
0.3

0.3



Attachment 4
(Referenced in paragraph 34)

Letter and Attachment from Mountaire Farms to effected residences



Dear Homeowner:

This letter is to let you know that recently Mountaire Farms of Delaware Inc. (Mountaire) has been notified that certain water supply sources in the vicinity of Mountaire's Millsboro plant have historically contained levels of nitrate that are somewhat higher than the standards established by the U.S. Environmental Protection Agency (EPA) and the Delaware Department of Public Health (DPH). As a result, Mountaire, EPA and DPH are reviewing the situation to determine what should be done to address the matter. In the meantime, Mountaire, on a voluntary basis is by this letter offering to supply you, free of charge, bottled water in sufficient quantities to meet all potable (drinking) water needs until this matter is resolved. If you want Mountaire to supply such water, please contact me at (302) 934-3094 to make appropriate arrangements. Also, enclosed is some information regarding nitrates and drinking water which you may find useful.

Thank you for your attention.

Yours Truly,

A handwritten signature in black ink, appearing to read "Jeffrey Smith".

Jeffrey Smith, REM
Environmental Manager
Mountaire Farms Inc.



Mountaire Farms of Delaware, Inc.
P.O. Box 1320, Millsboro, Delaware 19966
(302) 934-1100 Toll Free (877) 887-1490

"We measure quality by how well we service our internal and external customers"

PHOTO: Jesse Cooper Building

Jesse Cooper Building

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Behavioral Risk

Director's Office

Epidemiology

Health Information

Health Promotion

HD 2000 Plan

Newsletter

Press Releases

Tobacco

INFORMATION SHEET ENVIRONMENTAL HEALTH EVALUATION BRANCH NITRITES & NITRATES

What are they? Nitrates and Nitrites are naturally occurring inorganic ions and are part of the nitrogen cycle. Substances containing organic nitrogen such as fertilizers, animal waste, and plant materials, enter the soil and decompose to ammonia which is oxidized to nitrites and nitrates.

What happens to them? Both ions are very mobile in soil and readily move in groundwater. Potential sources of contamination of groundwater by nitrates include inorganic fertilizers, animal wastes (runoff from agricultural sources), human wastes (failing septic systems), and natural occurrence at low levels. Other potential human exposures to nitrates include: natural occurrence in vegetables and vegetable juices and cured meats (bacon, hot dogs). Drinking water (groundwater and surface water) are a concern with regard to nitrates because nitrates readily dissolve and move freely to the water table with rainwater, or irrigation water that is applied to the land. Nitrates are readily absorbed following ingestion.

What are the public health concerns associated with nitrates in drinking water? Eighty percent of Delaware residents have community water systems as a primary source of drinking water. During routine daily activities nearly all Delawareans consume water from a public water system. Twenty percent of Delaware residents use a private well as their primary source of drinking water.

The primary population sensitive to nitrates in drinking water are infants weighing less than 4 Kg (8.8 lbs.). Only those infants on formula (or other liquids) reconstituted using a source of water containing nitrates at greater than 10 ppm are at risk. This standard of 10 ppm continues to be routinely reviewed by US EPA. Other potentially affected populations include pregnant women, unborn children and nursing infants. Nitrates harm infants more so than adults because naturally occurring bacteria in the digestive system result in a higher pH (less acid). In these conditions nitrates are changed to the more toxic nitrites. Nitrites react with hemoglobin in the red blood cells. This markedly decreases the ability of the blood to carry oxygen resulting in a condition called methemoglobinemia which manifests itself as cyanosis, or "blue baby syndrome". In severe cases, this condition could lead to coma or death.

Does DHSS/DPH have data on current levels of nitrates in drinking water supplies? Of 571 public water systems in Delaware, six are currently on notice for exceeding the nitrate standard (10 ppm). These six water systems in violation serve 1,283 people or 0.2% of Delaware's population on public water systems. The customers of all six systems have been notified that the water exceeds State and U.S. EPA limits. The DPH is working with these systems to return them to compliance by installing appropriate treatment or finding an alternate source of water. For private wells, recent studies by the U.S. Geological Survey show that 85% of shallow wells (uppermost water aquifer) on the Delmarva Peninsula are below 10 ppm nitrates. Although Delaware does not regulate water quality in private wells, the DPH offers inexpensive nitrate test kits available at local county health units.

Precautions to be taken to avoid adverse health effects from nitrates. Have your

water tested by an approved laboratory. If there are high levels use bottled water for infants, nursing mothers and expecting women. Do not boil water to remove nitrates. Boiling could make the concentration even higher.

References. Brooks, S. M., M. Gochfeld, J. Herzstein, R. J. Jackson and M. B. Schenker. Environmental Medicine, Mosby, St. Louis, MO, 1995.---Talbot, E. O. and G. F. Craun. Environmental Epidemiology. Lewis Pub., Boca Raton, 1995.---Montgomery, J. H. Groundwater Chemicals Field Guide, Lewis Publishers, Chelsea, MI, 1991.---U.S. EPA, Office of Drinking Water, Health Advisory, Washington, DC, 1987.

Doc.#35-05-20/96/05/01 GCL/GY-4-24-96 Assistance Provided by HSP-ODW &CDCP NBCCEDP#U57/CCU3038341-02-3

Return to:

2016 WASTEWATER SPRAY IRRIGATION - NITROGEN BALANCE ESTIMATING CALCULATIONS "C"

Fields with Corn and Small Grain

DRAFT

Fields: CB 3 CB 3A CB 3B CB 3C CB 3D E CD 3D W
 XX WHBJ 1 XX WHBJ 2 XX WHBJ 3 XX WHBJ 4 XX WHBJ 5 XX WHBJ 6 XX WHBJ 7
 Acreage: 505.47 acres 54.5%

Percolate	MONTH												Total	Annual Average
	Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30		
Precip (in/mo)	2.87	4.10	1.54	3.82	6.40	2.99	4.26	3.88	12.29	3.27	0.32	2.80	48.54	4.05
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	27.80	2.32
Total WW Effluent (in/mo)	2.87	2.81	2.17	0.50	2.21	3.36	5.05	3.04	0.00	1.50	2.71	2.47	28.69	2.39
Irrigation Water (in/mo)	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.52	0.00	0.00	0.00	0.00	0.73	0.06
Total Water (in/mo)	5.64	6.81	3.01	2.52	5.31	1.55	4.03	2.54	8.69	2.87	2.13	5.07	50.17	4.18
Nitrogen Applied and Uptake														
Total Nitrogen WW Effluent (no vol or denite) (lbs/acre)	11.7	7.1	13.4	2.7	17.2	22.4	37.5	17.9	0.0	17.0	23.4	24.7	195.1	16.3
Total Nitrogen Applied (no vol or denite) (lbs/acre)	11.7	7.1	13.4	10.7	31.2	43.7	60.0	36.0	0.0	17.0	23.4	24.7	279.0	23.2
Total Nitrogen WW Effluent after Denitrification (mg/l)	14.79	9.05	22.43	19.27	27.99	24.18	26.61	21.30	14.73	40.86	30.83	35.71	23.98	13.2
Total Nitrogen WW Effluent (lbs/acre)	9.6	5.8	11.0	2.2	14.0	18.4	30.5	14.7	0.0	13.9	18.9	20.0	158.9	13.2
Total Nitrogen Irrigation (lbs/acre)	0.0	0.0	0.0	0.0	0.0	0.0	1.1	3.1	0.0	0.0	0.0	0.0	4.2	0.4
Total Nitrogen from fertilizers (lbs/acre)	0.0	0.0	0.0	8.0	14.0	21.3	21.3	15.0	0.0	0.0	0.0	0.0	79.6	6.6
Total Nitrogen available for crop uptake (lbs/acre)	9.6	5.8	11.0	10.2	28.0	39.7	52.9	32.8	0.0	13.9	18.9	20.0	242.8	20.2
Crop Uptake (lbs/acre)	0.0	0.0	6.3	8.3	15.3	31.3	48.3	27.3	9.3	5.3	6.3	0.3	158.0	13.2
Total Nitrogen to Percolate (lbs/acre)	9.6	5.8	4.7	1.9	12.7	8.4	4.6	5.5	0.0	8.6	12.6	19.7	94.1	7.8
Percolate Nitrogen														
Total Nitrogen in Percolate (ppm = mg/l)	7.5	3.7	6.9	3.3	10.6	24.0	5.0	9.6	0.0	13.2	26.2	17.1	10.6	10.6

Fields with Soybeans and Small Grain

Fields: CB 3 CB 3A CB 3B CB 3C CB 3D E CD 3D W
 XX WHBJ 1 XX WHBJ 2 XX WHBJ 3 XX WHBJ 4 XX WHBJ 5 XX WHBJ 6 XX WHBJ 7
 Acreage: 422.65 acres 45.5%

Percolate	MONTH												Total	Annual Average
	Days	Jan 31	Feb 28	Mar 31	Apr 30	May 31	Jun 30	Jul 31	Aug 31	Sep 30	Oct 31	Nov 30		
Precip (in/mo)	2.87	4.10	1.54	3.82	6.40	2.99	4.26	3.88	12.29	3.27	0.32	2.80	48.54	4.05
PET (in/mo)	0.10	0.10	0.70	1.80	3.30	4.80	5.50	4.90	3.60	1.90	0.90	0.20	27.80	2.32
Total WW Effluent (in/mo)	1.65	1.96	2.27	5.14	3.16	1.39	0.00	1.90	4.74	4.71	1.86	2.38	31.17	2.60
Irrigation Water (in/mo)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.96	0.72	0.00	0.00	0.00	2.68	0.22
Total Water (in/mo)	4.42	5.96	3.11	7.16	6.26	-0.42	-1.24	2.84	14.15	6.08	1.28	4.98	54.59	4.55
Nitrogen Applied and Uptake														
Total Nitrogen WW Effluent (no vol or denite) (lbs/acre)	6.8	4.9	14.0	27.5	24.6	9.3	0.0	11.2	19.2	53.5	16.0	23.9	210.9	17.6
Total Nitrogen Applied (no vol or denite) (lbs/acre)	6.8	4.9	23.4	40.8	44.6	29.3	15.7	23.0	22.5	53.5	16.0	23.9	304.3	25.4
Total Nitrogen WW Effluent after Denitrification (mg/l)	14.79	9.05	22.43	19.27	27.99	24.18	26.61	21.30	14.73	40.86	30.83	35.71	23.98	13.2
Total Nitrogen WW Effluent (lbs/acre)	5.5	4.0	11.5	22.4	20.1	7.6	0.0	9.2	15.8	43.6	13.0	19.3	172.0	14.3
Total Nitrogen Irrigation (lbs/acre)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.7	3.3	0.0	0.0	0.0	15.0	1.3
Total Nitrogen from fertilizers (lbs/acre)	0.0	0.0	9.4	13.4	20.0	20.0	15.7	0.0	0.0	0.0	0.0	0.0	78.4	6.5
Total Nitrogen available for crop uptake (lbs/acre)	5.5	4.0	20.9	35.8	40.1	27.6	15.7	20.9	19.1	43.6	13.0	19.3	265.5	22.1
Crop Uptake (lbs/acre)	0.0	0.0	6.8	19.8	10.8	21.8	46.8	33.8	22.8	18.8	6.8	4.8	193.0	16.1
Total Nitrogen to Percolate (lbs/acre)	5.5	4.0	14.1	16.0	29.3	5.8	0.0	0.0	0.0	24.8	6.2	14.5	120.2	10.0
Percolate Nitrogen														
Total Nitrogen in Percolate (ppm = mg/l)	5.5	3.0	20.0	9.9	20.6	0.0	0.0	0.0	0.0	18.0	21.3	12.8	9.3	9.3



STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES
& ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
89 Kings Highway
Dover, Delaware 19901

OFFICE OF THE
DIRECTOR

Phone: (302) 739-9910
Fax: (302) 739-6157

April 11, 2017

Lee Beetchsen
Duffield Associates, Inc.
144 South Governors Ave.
Dover, Delaware 19904

Re: DUFF 2017 Processing Plant Expansion

Dear Ms. Beetchsen,

Thank you for contacting the Species Conservation and Research Program about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

A review of our database indicates that there are currently no records of state-rare or federally listed plants, animals or natural communities at this project site.

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,

Kate Fleming
Wildlife Biologist/Environmental Review Coordinator
(302) 735-8658; fax: (302) 653-3431; Kate.Fleming@state.de.us
(See invoice on next page)

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through Science and Service*

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ATTACHMENT H