



# Maryland

Department of  
the Environment

Larry Hogan, Governor  
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary  
Horacio Tablada, Deputy Secretary

September 26, 2018

**RE: Water Appropriation and Use Permit No.: DO1951G001(11)  
Publication of Permit Decision**

Dear Property Owner, Public Official, Interested Person or Applicant:

On September 13, 2018 the Water and Science Administration (Administration) issued Water Appropriation and Use Permit No. DO1951G001(11) to Valley Proteins, Inc. to appropriate and use an annual average of 150,000 gallons of water per day (gpd) and an average of 164,000 gpd during the month of maximum use for process water, truck washing, sanitary facilities, and a potable supply at a poultry rendering plant. Water is to be withdrawn from four wells in the Frederica aquifer. The site is located at 5420 Linkwood Road, Linkwood, Dorchester County, Maryland.

After examination and consideration of the documents received and evidence in the application file and record, the Administration has determined that the application meets the statutory and regulatory criteria necessary for issuance of a Water Appropriation and Use Permit. The Response to Comments Received and Impact Analysis Summary used in reaching this determination are enclosed with this permit decision. A copy of Water Appropriation and Use Permit No. DO1951G001(11) is available upon request.

This is a final agency determination; there is no further opportunity for administrative review. The applicant or any person with standing who participated in the public participation process through the submission of written or oral comments may petition for judicial review in the Circuit Court in the County where the permitted activity is to occur. The petition for judicial review must be filed within 30 days of the publication of the permit decision. Please see the attached fact sheet for additional information about the judicial review process.

If you have any questions or need any additional information, please do not hesitate to contact me at (410) 537-3590.

Sincerely,

A handwritten signature in black ink, appearing to read "N. Lazarus".

Norman Lazarus  
Water Supply Program

Enclosures

MARYLAND DEPARTMENT OF THE ENVIRONMENT  
WATER AND SCIENCE ADMINISTRATION  
RESPONSE TO COMMENTS RECEIVED  
IN THE MATTER OF:

Water Appropriation and Use Permit Application No. DO1951G001/11  
for Valley Proteins, Inc.

PUBLIC INFORMATIONAL HEARING HELD: February 27, 2018

A public informational hearing on the above referenced Water Appropriation and Use permit application was requested by the Dorchester Citizens for Planned Growth and the League of Women Voters of the Mid-Shore. At the informational hearing, Earth Data, Inc. made a presentation on behalf of their client, Valley Proteins, Inc., outlining a technical evaluation of the withdrawal request. The Water Supply Program (WSP) lead the informational hearing, received comments from those in attendance, directed certain questions to Valley Proteins and Earth Data, and answered other questions. After examination of all documents in the above referenced matter and in consideration of the public informational hearing record, which was extended to March 20, 2018, the Program offers below a response to comments received concerning Water Appropriation and Use Permit Application DO1951G001/11. Additional information addressing the Program's technical analysis is contained in the Impact Analysis Summary and enclosed with the Final Permit Decision letter, a separate document. Responses to the comments relevant to the water appropriation request are discussed below.

1. **Comment:** A primary concern outlined in a written comment and expressed by those in attendance was that the proposed withdrawal might negatively impact the potable supply wells of residents in the vicinity of the withdrawal.

**Response:** There is the potential for the increased withdrawal from the Frederica aquifer by Valley Proteins to cause water levels in the aquifer to drop below pump settings for some nearby residential wells. The proposed increase is not, however, projected to drop water levels below regulatory management thresholds for ensuring the sustainability of the aquifer. The WSP has determined that the aquifer can support the request and continue to provide water for other property owners in the area. Valley Proteins, Inc. will be required by the Water Appropriation and Use permit to pay all expenses to lower pump settings in any impacted well. The Water Supply Program (WSP) identified ten (10) wells whose pump settings may need to be lowered. The WSP sent letters were to those identified property owners to inform them of the details of the project. The ten property addresses were included as an attachment to the Permit.

In order to ensure protection for the individual well owners in the region, the Water Appropriation and Use Permit requires Valley Proteins, Inc. to:

- a) Report any well complaint to the WSP before the close of the next business day.
- b) Immediately initiate an investigation through the services of a professional.
- c) Submit a detailed report of investigation to the WSP within ten (10) days of receipt of the complaint.
- d) Provide bottle water for drinking and cooking and a tanker truck for other water supply uses within twenty-four (24) hours of receipt of the complaint if the complainant is one of the ten (10) residents described above.

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- e) If the complainant is not one of the ten (10) residents identified to likely be impacted, the permit requires Valley Proteins, Inc. to provide bottled water for drinking and a tanker truck for other household uses within twenty-four (24) hours of the WSP determining that Valley Proteins use resulted in the loss of the domestic water supply.
- f) Pay all costs associated with lowering the pump from a well adversely impacted by Valley Proteins.
- g) Pay all costs associated with drilling a new well if it was not feasible to lower the pump in the existing well.

The Water Appropriation and Use Permit for Valley Proteins, Inc. also requires:

- a) Valley Proteins to install a monitoring well into the Frederica aquifer at a location approved by the WSP,
- b) Monitor and record water levels twice every day with a transducer,
- c) Download and report the water level data quarterly to the WSP along with the facilities water use.

This information will ensure that sound data is available to respond to any well complaint, and track trends in the water level changes in the Frederica aquifer.

In addition to contacting Valley Proteins at (410)-228-1616, a homeowner in the vicinity of Valley Proteins that experiences a loss in water supply may also contact the Water Supply Program at 410-537-3714. Water supply at a homeowners tap can be reduced or eliminated for a number of reasons that are not related to the water level in the well and investigating these possibilities is an important step in the process. Reasons for water supply interruption or reduced yields not related to water levels include: well screen clogging; pressure switch failure; loss of electricity; lightning strike damaging a pump motor; and leak in water service line from well to home. Homeowners are encouraged to first contact a licensed plumber or well driller to first ensure that the problem is not mechanical or electrical in nature.

*The following question was raised from a March 14, 2018 letter from Susan Olsen to John Grace on behalf of the Dorchester Citizens for Planned Growth (DCPG).*

2. **Comment:** A concern was raised that our environmental evaluation did not address the potential of land subsidence caused by the withdrawal.

**Response:** Actual data on the impact of groundwater withdrawal on land subsidence in Maryland is very limited. Evaluation of the potential for land subsidence is not an assessment required for a water withdrawal requests.

For general information on subsidence and groundwater withdrawals you might like to consult the Maryland Geological Survey's presentation describing why subsidence occurs in Maryland's Coastal Plain and discusses the possible impact of groundwater withdrawals contributing to land subsidence.

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The slides from their presentation can be found here:  
<http://www.co.cal.md.us/DocumentCenter/View/17050>.

These slides cite scientific literature and present observations concerning land subsidence in the Mid-Atlantic, including the fact that a published report estimates that water levels need to be reduced by 20 meters (65 feet) before compaction of sediment from reduced water pressure would contribute to subsidence in the Mid-Atlantic Coastal Plain.

The slides also note that in spite of high rates of groundwater withdrawals from confined aquifers in Anne Arundel County, totaling many millions of gallons per day, measured rates of subsidence at the County's major well field is similar to the rates of regional subsidence due to glacial isostatic adjustment.

Another slide from the presentation estimated subsidence from groundwater withdrawals in the Solomon's area of Southern Maryland to be about 0.7 millimeters per year (one inch in about 36 years). This estimate was based on an interpretation of the tide gage data and not direct land surface measurements. At this location the water level in the Aquia aquifer was about 150 feet below mean sea level.

Our evaluation of the water level change from this proposed increase projects an additional 33 feet of drawdown caused by this withdrawal at a quarter mile from the area of pumping, which would drop water levels from 37 feet below mean sea level to 70 feet below mean sea level. An additional regional decline in water level is estimated at nine (9) feet over twelve years resulting in an estimated water level to be about 79 feet below mean sea level at one quarter mile from the pumping center. At one mile from the facility pumping center, we project that water levels would drop to about 69 feet below mean sea level (this includes the regional decline) after twelve years, and at five miles the water level would be about 58 feet below mean sea level after twelve years. If subsidence were a result of pumping, then the consolidation of the strata would take place by a clayey unit(s) releasing water to the aquifer and shrinking in thickness. Our conclusions regarding subsidence from examining the possible water level decline from this requested increase are:

- a) subsidence from groundwater withdrawal has not been observed to occur in Maryland at water levels from 79 to 58 feet below sea level;
- b) the projected resulting water levels are substantially higher than observed in Virginia or Southern Maryland where subsidence was associated with groundwater withdrawals;
- c) we cannot rule out the possibility that there might be some subsidence in the region of Valley Proteins where water levels are deeper than 65 feet below mean sea level;
- d) we would not expect any subsidence from the proposed groundwater withdrawal to occur more than a mile or so from facility; and
- e) we would not expect the rate of subsidence, if it does occur, to be significant or unreasonable given the observations elsewhere in Maryland.

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3. Comment: A commenter requested clarification on how the increase in process water that was a portion of the increased water appropriation would be used at the facility.

Response: Valley Protein indicated that the increase in process water is primarily to provide additional water due to increased evaporation losses for running the new boilers. Since the water supply to the boilers is lost to evaporation, there would not be an increase in wastewater from the increased boiler usage.

*The remaining comments were not related to the request by Valley Proteins for additional water use or the Water Appropriation and Use Permit application. Answers provided were largely provided by Valley Proteins or the MDE Wastewater Permits Program. Questions regarding a WWTP expansion should be directed to Valley Proteins and or MDE's Wastewater Permit Program, as they are not relevant to the Water Appropriation and Use Permit.*

4. The need for clarification regarding the purpose of the plant expansion was raised.

Mr. C. Reed Parks, General Manager of Valley Proteins provided this response in a letter to the Water Supply Program dated April 12, 2018: "The proposed expansion of the facility is to process a greater amount of material so that we can continue to meet the growing needs of our suppliers in the poultry industry in the area, and to increase the efficiency and effectiveness of the processing".

5. A few points of clarification were needed regarding the trucks carrying offal and feathers that are washed at the facility, the location of the wash facility, and what happens to the water after the truck wash.

Mr. C. Reed Parks, General Manager of Valley Proteins provided this response in a letter to the Water Supply Program dated April 12, 2018: "Covers are secured on trailers [carrying offal and feathers] when in transit. The aforementioned trailers are washed in a truck washing facility located at the site to meet USDA sanitation standards, and the wastewater from this process is treated by the on-site wastewater treatment plant which becomes part of the recycled wastewater stream for reuse at the facility or discharged. Sealed tanker units that transport used cooking oils are not washed in the same fashion; their exteriors are washed on an as-needed basis".

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6. Susan Olsen's letter expressed broad concern regarding disposal of increased wastewater discharge associated with an increased appropriation allocation and highlighted the fact that Transquaking River has high nitrogen concentrations.

*Wastewater Permits Program Response:*

The total nitrogen load for Valley Protein's discharge is limited to 14,772 lbs/yr and will not be increased because that load implements a TMDL waste load allocation. The increased appropriation does not change the allowable nitrogen load.

7. Does the NPDES permit limit the flow of the discharge, just concentration, or concentration and loading?

*Wastewater Permit Program Response:*

The permit does not limit the flow. We presume that the concern of the commenter is the limiting of pollution. Flow is not necessarily equivalent to the level of pollution being discharged. Concentrations of pollutants in the flow can be at many different levels. Consequently, to directly limit the amount of pollutant that is able to be discharged, we limit the amount (i.e., pounds) of that pollutant that may be discharged. Thus, the permit contains both concentration and loading limits. The concentration limits are expressed in milligrams per liter (mg/l). The loading limits are based on the plants raw material production capacity and are expressed in pound per day (lbs/day).

8. Is the treatment technology in use at Valley Protein capable of meeting a loading or concentration requirement if all of the 164,000 gpd during the month of maximum use were discharged?

*Wastewater Permit Program Response:*

We don't specify the treatment technology, only the concentration or loading limits that apply to the facility in protection of water quality standards. Therefore, an exceedance of the existing permit limit, if caused by increased flow, would still be a violation of the permit.

9. Do you have a process flow diagram in your file that shows how the water supply leads to wastewater generation, including approximate flow rates?

*Valley Proteins, Inc., Response:*

We do not have a flow diagram that demonstrates the requested information. This well is to supply the newly permitted boilers for water make-up due to evaporative loss. The current wells will not meet this demand. Since this is for evaporative loss, there is essentially no impact to wastewater treatment.

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10. Did Valley Protein provide the anticipated wastewater flow for a plant production capacity of 20,000,000 pounds per day?

*Wastewater Permit Program response:*

Yes. Valley Proteins submitted an application for permit renewal of its surface water discharge permit requesting to increase their discharge volume from an average of 150,000 gpd to 575,000 gpd. The expansion has been designed for production capacity of 20,000,000 pounds per day of raw material processes over 5.5 days per week.

11. What is the estimated amount of water that is recycled from the wastewater effluent?

*Valley Proteins, Inc., Response:*

We expect the amount of recycle to remain in the 40-50% range of the total amount of water treated. However, recycle is not relative to the proposed well.

12. Can you provide clarification on whether wastewater from truck washing is handled differently than wastewater from chicken rendering processes?

*Wastewater Permit Program response:*

The two different waste streams would have different permit requirements and/or limitations. For example, with truck washing wastewater, we are most concerned about capturing as much as possible of the vehicle related pollutants that may be washed. Thus, we might include conditions requiring certain practices like restricting the use of solvents and soaps in the cleaning and requiring prompt and complete clean-up of spills before washing, etc. With wastewaters related to the chicken rendering process, we are concerned with limiting the discharge of animal matter. Thus, for example, biochemical oxygen demand and total suspended solids are limited.

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13. Does the NPDES permit application process show a wastewater treatment schematic that must be followed by the permittee, or does the permit just specify the limits at the end of the pipe? Any insight you can provide on the handling of the truck washing wastewater is appreciated.

*Wastewater Permit Program response:*

We do not regulate the design. Our permit regulates pollutants that are being discharged from the facility. The application did show a flow schematic to familiarize the permit writer and the public to the process being permitted, However, that design may be modified as long as the discharge continues to meet permit requirements.

Sept 25, 2018  
Date

  
John Grace  
Hearing Officer  
Water Supply Program  
Water and Science Administration



Valley Proteins, Inc.  
(Name of Applicant)

DO1951G001/11  
(Application No.)

John J. Anthony  
(Assigned WMA Project Manager)

August 23, 2018  
(Date Form Completed)

### ***IMPACT ANALYSIS SUMMARY***

#### **I. REASONABLENESS OF THE AMOUNT OF WATER REQUESTED IN RELATION TO THE ANTICIPATED LEVEL OF USE DURING THE PERMIT PERIOD.**

The applicant requests to increase an existing appropriation from an annual average of 115,000 gallons of ground water per day (gpd) and 140,000 gpd during the month of maximum use to an annual average of 150,000 gpd and 164,000 gpd during the month of maximum use for process water, a potable supply, truck washing, and sanitary facilities at Valley Proteins, Inc. poultry rendering plant. Water will be withdrawn from three existing wells and one new well, all in the Choptank formation (Frederica aquifer).

A review of the water withdrawal reports submitted by Valley Proteins, Inc. indicates that the annual average water use from 2006-2016 was about 94,000 gpd. This quantity will be used as an estimate of current water demand. Valley Proteins, Inc. has estimated future water demand based on 117,000 gpd for process water, 3,000 gpd for potable use, and 30,000 gpd for truck washing. The total water demand is estimated to be approximately 150,000 gpd. The allocation during the month of maximum use was determined using a peaking factor of approximately 1.1 which is similar to the highest peaking factor in the period of 2006-2016 (120,000/115,000). The quantities are reasonable for the requested use.

#### **II. REASONABLENESS OF THE IMPACT OF THE REQUESTED WITHDRAWAL ON THE RESOURCE.**

Permit withdrawal requests from confined aquifers are evaluated based on the available drawdown, which is not to exceed 80% of the distance between the historic pre-pumping levels and the top of the aquifer in the area of the withdrawal. The top of the aquifer was determined to be -110 feet (ft) below mean sea level (MSL) based on the well completion reports for on-site wells DO-95-1798 (well D), DO-95-1605 (well A), DO-95-0908 (well B) and DO-95-0294 (well C). The historic water level was taken to be +11 ft above MSL (Rasmussen & Slaughter, Bulletin 18, 1957). This results in an 80% management level of -86 ft below MSL and current available drawdown of 49 ft.

To predict the impact of the proposed increased withdrawal, aquifer characteristics are needed. The Frederica aquifer transmissivity (T) value of 166 ft<sup>2</sup>/day was determined using the pump test for well D. The storativity (S) value was taken to be 0.0001 as is estimated by Hansen, 1972. The effect of pumping the well for the increased annual average amount of approximately 56,000 gpd (150,000-94,000) on the regional potentiometric surface in the area from which the water is appropriated was modeled for one and 12 years of pumping. Assuming no recharge to the Frederica aquifer, drawdowns of about 24 ft after one year and about 33 ft after 12 years were predicted at a distance of ¼- mile from the pumping center. Drawdown progressively decreased at greater distances from the pumping center.

Valley Proteins, Inc.  
(Name of Applicant)

DO1951G001/11  
(Application No.)

John J. Anthony  
(Assigned WMA Project Manager)

August 23, 2018  
(Date Form Completed)

The regional rate of decline is a reflection of how water levels in the aquifer are responding to regional aquifer withdrawals over time. Average water level measurements taken from the Frederica aquifer in 1954 (Bulletin 18, 1957) suggest the regional rate of decline is about 0.77 ft/yr. This indicates an estimated decline of about 9 ft. over 12 years. Combining the drawdown due to the regional rate of decline (9 ft) and the requested annual average quantity would result in an estimated 42 ft. decline in potentiometric surface over 12 years, leaving 7 ft of available drawdown (49 feet available DD).

### **III. REASONABLENESS OF THE IMPACT OF THE REQUESTED WITHDRAWAL ON OTHER USERS OF THE RESOURCE.**

Additional time-distance drawdown calculations were performed to assess potential impacts to other users in the area. The difference between the month of maximum use and the annual average, or 14,000 gpd, was modeled for 60 days of pumping. This created a drawdown of about 4.5 ft. at a distance of ¼-mile from the well. When the decline due to the annual average pumping is included, the total drawdown to this permit during periods of maximum pumping would be about 37.5 ft. after 12 years. When including the regional rate of decline of 0.77 ft/yr for 12 years, the total estimated decline in water levels during the season of highest use is estimated to be about 47 ft at a distance of ¼-mile from the production well. The withdrawal would allow about 2 ft. of available drawdown in the region above the 80% management level.

A well inventory review indicated that there are approximately 28 domestic wells drilled into the Frederica aquifer within 3.0 miles of the proposed withdrawal. Ten (10) wells were identified as having the potential to require well pump lowering due to declining water levels in the region. The permittee will be required to pay the costs for lowering the well pumps for these owners in the event that an investigation demonstrate that Valley Proteins pumping directly contributed to well pump failure. The permittee shall also be required to monitor water levels in the aquifer to ensure that the well pumps are lowered in a timely manner and to ensure that regulatory water management levels are not exceeded.

## **FACT SHEET JUDICIAL REVIEW PROCESS**

Legislation passed by the 2009 General Assembly changes procedures for certain permits issued by the Department, including water appropriation permits. The judicial review procedures took effect on January 1, 2010 and applies to final permit decisions issued on and after January 1, 2010.

Under pre-existing procedures, permit applicants and third parties with standing under Maryland law could challenge the issuance of a permit or the conditions of a permit through a request for a "contested case" adjudicatory hearing conducted by the Office of Administrative Hearings. Effective January 1, 2010, the "contested case" process no longer applies to final decisions on applications for these permits. Rather, permits can be challenged through a request for direct judicial review in the Circuit Court for the county where the activity authorized by the permit will occur. Applicants, and persons who meet standing requirements under federal law and who participated in a public comment process by submitting written or oral comments (where an opportunity for public comment was provided), may seek judicial review. Judicial review will be based on the administrative record for the permit compiled by the Department and limited to issues raised in the public comment process (unless no public comment process was provided, in which case the review will be limited to issues that are connected to the permit).

### **Who Has Standing?**

Anyone who meets the threshold standing requirements under federal law and is either the applicant or someone who participated in the public participation process through the submission of written or oral comments, as provided in Environment Article § 5-204, Annotated Code of Maryland. The three traditional criteria for establishing standing under federal law are injury, causation, and redressability, although how each criterion is applied is highly fact-specific and varies from case to case. Further, an association has standing under federal law to bring suit on behalf of its members when its members would otherwise have standing to sue in their own right, the interests at stake are related to the organization's purpose, and neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.

### **What is the Procedure for Seeking Judicial Review?**

Petitions for judicial review of a final determination or permit decision subject to judicial review must be filed in accordance with § 1-605 of the Environment Article no later than 30 days following publication by the Department of a notice of final determination or final permit decision and must be filed in the circuit court of the county where the permit application states that the proposed activity will occur. Petitions for judicial review must conform to the applicable Maryland Rules of Civil Procedure (Title 7, Chapter 200).

*To review the legislation follow the link below:*

[http://mgaleg.maryland.gov/2009rs/chapters\\_noln/Ch\\_650\\_sb1065T.pdf](http://mgaleg.maryland.gov/2009rs/chapters_noln/Ch_650_sb1065T.pdf)