History of Water Quality Violations by the Bosma/Liberty Dairy

From **COMMUNITY ASSOCIATION FOR RESTORATION OF THE ENVIRONMENT (CARE), a Washington non-profit corporation, Plaintiff,**
v.
HENRY BOSMA DAIRY, a Washington proprietorship, aka Hank Bosma Dairy, aka Bosma Dairy, aka H & M Dairy, aka H & S Bosma Dairy, aka B & M Dairy; Liberty Dairy, a Washington proprietorship; Henry Bosma, owner and operator of Henry Bosma Dairy and Liberty Dairy; and Bosma Enterprises, a Washington corporation, Defendants.

COMMUNITY RES. OF ENVIRONMENT v. Henry Bosma Dairy, 65 F. Supp. 2d 1129 - Dist. Court, ED Washington 1999 - Google Scholar

In 1973, Henry Bosma started a dairy with 300 dairy cows outside of the town of Zillah in Yakima County. In 1990, the Liberty Dairy was added. Defendants Henry Bosma, Henry Bosma Dairy, Liberty Dairy, and Bosma Enterprises, Inc. own and operate the Dairies at 1271 North Liberty Road and 5680 E. Zillah Road, Granger, Washington. Henry Bosma Dairy is sometimes referred to, and is the same as H & S Bosma Dairy, Hank Bosma Dairy, and Bosma Dairy. Henrietta and Henry Bosma own and operate the dairies, and the land on which manure is stored, collected, and applied, as a sole proprietorship. Bosma and Liberty Dairies (jointly referred to as the Dairies) adjoin one another and are under common ownership. The Cow Palace owns the property that lies immediately to the east of the Bosma Dairy, north of Kirks Road, and south of East Zillah Drive. In February of 1996, Bosma leased 155 acres of land at the northwest corner of the intersection Price and Kellum Road. That land was included in the Dairy Waste Management Plan (hereinafter DWMP) as acreage for application of animal wastes as fertilizer for crop production.

By 1998, according to the approved 1998 DWMP for the Bosma and Liberty Dairies submitted as part of the NPDES permit process, Bosma Dairy had 1,250 milking cows, 250 dry cows, and 750 heifers for a total of 2,250 cows while the adjoining Liberty Dairy had 2,100 milking cows, 400 dry cows, and 500 heifers for a total of 3,000 cows, a combined total of 5,250 dairy cows. The cows are stabled or confined and fed or maintained at the Dairies for a total of 45 days or more in any 12 month period in pens or lots where crops, vegetation, forage growth, or post harvest residues are not sustained. Essentially, both dairies employ intensive confinement for thousands of dairy cows and are "concentrated animal feeding operations" (CAFOs). "` Concentrated animal feeding operation' means an ` animal feeding operation' which meets the criteria in Appendix B of this part, or which the Director designates under paragraph (c) of this section." 40 C.F.R. § 122.23(a)(3).

An "animal feeding operation" is defined as "a lot or facility (other than an aquatic animal production facility) where the following conditions are met":

(i) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and

(ii) Crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot of facility.

40 C.F.R. § 122.23(b)(1).

An "animal feeding operation" is a CAFO under 40 C.F.R. § 122.23 if it confines more than 700 mature dairy cattle (whether milk or dry cows) or 1,000 animal units. *See* 40 C.F.R. § 122.23(b)(3), 40 C.F.R. Pt. 122, App. B(a)(2)(10). As applied to an animal feeding operation, for dairies the term "animal unit" means the number of mature dairy cattle multiplied by 1.4. 40 C.F.R. Pt. 122, App. B.[7]

Using the formulae in the EPA regulations, 5250 dairy cows converts to 7,350 animal units (the number of dairy cows multiplied by 1.4). *See* 40 C.F.R. Pt. 122, App. B(a). 1,000 animal units meets the test for qualification as a "concentrated animal feeding operation." *See* 40 C.F.R. Pt. 122, App. B.

As described in Defendant's Trial Brief (Ct.Rec.159), these Dairies are in operation 24 hours a day, every day of the year, and employ 75 people. The cows are milked three times a day. The management of these dairy wastes is detailed in the 1998 DWMP. In summary, water used to cool the milk is recycled for use in cleaning the animals and milking area. It is then piped to areas where it separates into solids and liquids. It is after which pumped to storage ponds for storage during the winter months and application to crop fields during the growing season. Solid animal wastes are collected from various parts of the confinement area and sold to others as fertilizer, applied to Bosma crop production fields during the growing season, and mixed with straw for use as bedding for the animals. Both dairies presently use a common system of waste collection and disposal. In theory, the confinement area is bermed to channel storm water runoff and any wastewater to storage ponds.

J.D. 26.6 is a drain that runs south from an area at the ROZA Canal along the east side of the Dairies through a culvert under Kirks Road southwest and then south by Storage Ponds # 1 and # 2 to a SVID weir 1147*1147 box and on to a SVID diversion box on the north side of the SVID Canal. In the winter months, J.D. 26.6 is diverted under the Canal and flows south to the Granger Drain and then into the Yakima River. During the growing season, it is diverted into the Canal as added water for irrigation. For years, Bosma used this drain as a

conveyance of animal wastewaters to the ponds south of Kirks Road despite being told in 1989 by WADOE officials to cease the use of J.D. 26.6 for that purpose.

Over the years, WADOE, which had responsibility for supervision and enforcement of the CWA and the NPDES permit process, had frequent contacts with Henry Bosma regarding discharges of animal wastewater to the waters of the United States and of the State of Washington from his Dairies and has issued a number of discharge violations to Bosma Dairy. By 1986, Bosma Dairy was under WADOE order to obtain a NPDES permit. In 1987, WADOE and Bosma Dairy entered into a Stipulation to resolve two 1984 discharge violations and the 1986 Order. In return for Bosma's agreement to pay a fine and to take other steps to avoid further discharges, the total fines were reduced and the order to apply for a NPDES permit was held in abeyance on condition that there would be no further discharges from the dairy.

In 1988, following a verified discharge of animal wastes from a spray gun, WADOE recommended an escalated fine and for the second time required Bosma to apply for a NPDES Permit. The enormous amount of animal wastes generated at these industrialized dairies are applied by various methods by dairy owners, operators, or their agents to crop fields which they own or lease. The animal waste is either spread on the fields by trucks or the animal wastewater collected in storage ponds is pumped through a hose to a "wheel line" or a center pivot irrigation line or a powerful "spray gun" and applied to the fields for crop production. If these appliances malfunction or are erroneously operated by the dairy employees, or if the animal wastes are overapplied to the fields for crop production, the animal wastewater may run off the fields, in some cases discharging to waters of the United States.

At some point shortly after WADOE had again ordered Bosma Dairy to apply for a NPDES permit, an advisory committee composed of representatives of the Dairy industry, WADOE, and the EPA began working on the language to be included in the NPDES and Washington State General Dairy Permit. According to Robert Barwin, the water quality manager for WADOE in the central region of the state since 1989, in an effort to develop cooperation and reach consensus on the permit language, WADOE did not require Bosma or any CAFO to apply for and did not issue to any CAFO a general NPDES permit during the years of the development of the NPDES and Washington State General Dairy Permit for Washington dairies. It was not until 1994, some eight years after WADOE first ordered Bosma to apply for a NPDES permit, that the language of the NPDES and Washington State General Dairy Permit was adopted. During those intervening years, WADOE recognized that the absence of a NPDES permit in Washington did not allow CAFOs like Bosma Dairy to violate the CWA by discharging animal wastes to the waters of the United States. When WADOE received

and verified complaints of discharge violations by dairy operators in the Yakima area, it referred the dairy operator to the South Yakima Conservation District (hereinafter SYCD) for technical assistance to enable the dairy operator to avoid future discharge violations. As long as the dairy operator was actively engaged in using that technical assistance to correct the problem that led to the discharge violation, WADOE would not prosecute the dairy operator to any penalty or formal enforcement.

In 1993, there were additional verified discharges of animal wastes to J.D. 26.6 on September 30 and October 1. WADOE issued a Notice of Violation to Bosma for these violations. The imposition of a monetary 1148*1148 penalty was appealed by Bosma to the Pollution Hearing Control Board of the State of Washington which heard the matter in May and June of 1995, and issued its decision in October of 1995. The penalty assessed in the sum of $3,000.00 was sustained; the remaining $3,000.00 of the penalty was suspended on condition that for three years after October of 1995, the activities at Liberty Dairy would cause no further water pollution violations or violations of the DWMP then in effect.

On April 22 and April 23, 1996, WADOE verified additional discharges to J.D. 26.6 by Bosma. WADOE issued Bosma a penalty order in the amount of $9,000.00 for these additional verified wastewater discharges to J.D. 26.6. In addition, on July 30, 1996, WADOE sent Bosma a letter notifying him that he was required to file an application for a NPDES permit. The reasons for this notice were contained in the letter. Referring to the April 22, 1996, discharge, WADOE wrote the following:

> This incident is similar in nature to other confirmed discharges of manure contaminated waters from the dairy which have periodically occurred since 1976. Due to the close proximity of Drain 26.6 to corrals, pastures, spray fields, feed alleys, and parlors at the Bosma Dairy and to the fact that the drain is used to convey contaminated wastewaters to ponds south of Kirks Road, discharges of manure contaminated wastewaters to waters of the state are likely to reoccur in the future.

(Ex. 48.) On December 13, 1996, Mr. Bosma requested relief from the penalty. Max Linden of WADOE verbally agreed with Bosma that the penalty would be held in abeyance "as long as Henry Bosma works on a management strategy and implements the BMP's (Best Management Plans) and management structures to prohibit manure from being conveyed by the drain through is [sic] dairy into the waters of the State." (Ex. 90.) As directed by Linden, Bosma consulted with Laurie Crowe at the South Yakima Conservation District for assistance in developing the waste management plan.

In late 1996, as required by WADOE, Bosma applied for a NPDES permit for the Bosma Dairy. The H & S Bosma Dairy obtained a Washington general dairy permit on January 31, 1997.

On January 13, 1997, there was an additional discharge by Bosma Dairy verified by WADOE.

In 1996 and 1997, Bosma implemented extensive site improvements in response to pressure from WADOE. In 1997, Bosma constructed a series of storage ponds along the east side of his property as well as Storage Ponds # 1 and # 2 south of Kirks Road. None of the storage ponds were designed by an engineer. Both a representative of the National Resource Conservation Service (NRCS) and Ms. Crowe of the SYCD visited the site on occasion during the construction.

On April 17, 1997, Steven Butler who lives on N. Liberty Road south of Kirks Road reported that the pipe on the Canal from Bosma's property was spilling green-brown manure water into the bottom of the dry Canal. Examining Exhibit 59, a March, 1997, photo of manure in the Canal at that same location, Butler said that the amount in the Canal from the April spill was much deeper, extending across the width of the Canal. He had seen this manure water running into the Canal for a couple of weeks before finally reporting it. He said the color of the water in Exhibit 43(c) was the color of the water he has seen flowing from that same pipe. On several occasions in 1998, and in the spring of 1999, he saw the same manure water spilling into the Canal at the pipe from Bosma's property.

Although now Bosma Dairy was operating with a NPDES permit, WADOE verified additional violations of discharges of pollutants into J.D. 26.6 by Bosma Dairy on July 28, 1997, August 25, 1997, and September 9, 1997. At least one of these violations involved overapplication of animal wastewater to the field east of Storage Ponds # 1 and # 2. WADOE records do 1149*1149 not show any alleged violations after September, 1997.

In the winter months of 1997-1998, Ray Butler, who lives on N. Liberty Road south of Kirks Road near his son Steve, observed six-foot high mounds of frozen manure on the Bosma's field east of Storage Ponds # 1 and # 2 indicating the winter application of animal wastewater in violation of the NPDES/DWMP.

On October 31, 1997, as required by the CWA, 33 U.S.C. § 1365(a)(1)(A), CARE sent Bosma its first Notice of Intent to Sue letter for violations of the CWA. Sometime after receiving this notice, Bosma and other dairy owners who had received similar Notices had a luncheon meeting at a restaurant with Robert Barwin, the WADOE water quality program manager in the Central Washington region. During this meeting, the Dairy owners and operators requested that WADOE take formal enforcement action against them which they

believed would prevent continuation of the suits by CARE. 33 U.S.C. § 1365(b)(1)(B). Barwin testified that he declined to do so because WADOE had made a policy decision that it was going to allocate its enforcement resources in accordance with priorities it had set and would not respond in any way to the filing of citizen suits. In short, if the claims in the citizens' Notices of Intent to Sue involved WADOE enforcement priorities, then WADOE would take action; if not, it would not initiate any action. Barwin explained that until the 1998 amendments to the State Water Quality Act, WADOE lacked the resources to be proactive.

On November 11, 1997, Bosma applied for a NPDES permit for the Liberty Dairy. WADOE had advised Bosma in its July, 1996 Notice that one permit could be used for both dairies since they were adjoining and used some of the same waste management systems if they were under joint ownership.

In a December 23, 1997, letter to Max Linden of WADOE, Bosma wrote: "Also, I need some protection on the November NOV — say $1,000?" (Ex. 95.) This was an effort by Bosma to reach agreement on a specific penalty assessment for the 1997 Notice of Violations. Also in December of 1997, Bosma submitted a Dairy Waste Management Plan for both dairies for approval. On January 15, 1998, the 60-day period having elapsed, CARE filed suit against Bosma. On that very date, quite coincidentally, WADOE issued a modification of the Bosma NPDES permit to include Liberty Dairy. (Ex. 318.)

In early 1998, Bosma visited the Reddout home. Helen Reddout tape-recorded their conversation. While the Court admitted into evidence the tape and a transcript of it, holding the Defendant had waived objection by offering portions of the tape at the pre-trial conference, the Court has made no use of that evidence. (*See* Exs. 346 & 346A).

On January 16, 1998, Holly Cushman of WADOE issued a Recommendation for Enforcement Action against Bosma for the 1997 violations. (Ex. 100.) It contained a history of violations which occurred in 1997, contacts with Bosma and a recommendation for the affirmation of the $9,000.00 penalty for the 1996 violations which had been held in abeyance and the imposition of a total of $3,000.00 for the failure of Bosma to report to WADOE the three verified 1997 violations as required by his NPDES permit. There was no evidence of WADOE action on this recommendation.

The DWMP was approved by the NRCS, the SYCD and Bosma in February of 1998. As approved by Bosma, NRCS and SYCD, the DWMP contained this statement on page 13:

To be completed:

1. Currently, wastewater from the vehicle wash area is piped to the SVID drain. This wastewater will be diverted to one of the existing ponds or "catch basins" and the existing pipe to the drain will be capped off.

In May of 1998, several months after this suit was filed on January 15, 1998, 1150*1150 Bosma employees deposited truck loads of manure produced at the Dairies to the Price/Kellum location where it sat for about a month before it was disked into the soil. As deposited, it was spread over a wide area on the property along the side of Price Road with some mounds four feet in height. Some of the liquid material seen along the side of Price Road was leachate from this huge expanse of manure. Both in amount and location, the manure was threat to discharge to any streams close by. Based on photographs and a video taken by Helen Reddout during the time the manure was sitting in these deposits, there was water running under the bridge on Price Road across this property southwest to and under a bridge on Kellum Road.

In the summer of 1998, Bosma completed the installation of two pipes running under Kirks Road which connected the storage ponds above Kirks Road with Storage Ponds # 1 and # 2 south of Kirks Road. There was no blowout of the embankment of the pond above Kirks Road.

During the summer of 1998, and again in the spring of 1999, animal wastewater was sprayed on the field which was identified throughout the trial as the "14.3 acre field." This 14.3 acre field sits west of J.D. 26.6, and on its eastern edge the land slopes down to the J.D. 26.6. The animal wastewater from the wheel line on the 14.3 acre field was sprayed onto Kirks Road and the Golob property on the south side of Kirks Road. Both Ray and Steve Butler, father and son, who live on Liberty Road, south of Kirks Road, observed this. The 14.3 acre field was not bermed and piped to Storage Pond # 2 until late Spring of 1999.

In the fall of 1998, Bosma contacted Harold Porath, a former Dairy Waste Inspector for WADOE, who was then employed by an engineering firm, and asked him to review the DWMP and evaluate the dairy facilities. Porath indicated in an October 12, 1998, letter to Bosma that he had completed the requested evaluation of Wastewater Control Facilities on the Dairies owned by Bosma in Zillah, Washington. (Ex. 146.) That review included Dairy site visits, a review of the NPDES General Permit for both dairies, a review of the Waste Management Plan written by the Natural Resources Conversation Services (NRCS) for both dairies, and discussions with representatives of NRCS regarding the Waste Management Plan. Porath noted that flow from the hop yard to the west of Liberty Road flows to a drain on the west side of Liberty Road and runs east under the road to an open ditch through the middle of a pasture on the Bosma Dairy in proximity to the cow pens. Paragraph 5 of that letter states,

> Runoff from the hop yard located south of the Liberty Dairy and west of the Hank Bosma Dairy currently flows east under Liberty Road, across the pasture on the Hank Bosma Dairy and enters Drain 26.6. Since this runoff flows in an open drain across the pasture on the Hank Bosma Dairy, waste materials applied to the pasture or escaping from the pens located south of the pasture have the potential to commingle with the hop yard runoff and be discharged into Drain 26.6.

(Ex. 146.)

This is similar to the statement found in the dictation based on field notes made by Porath on his September 16, 1998, site visit. (Ex. 147.) The Court notes that Porath also wrote in his dictated field notes, "[a]ccording to Lauri Crowe, South Yakima Conservation District Dairy Waste Resource Technician, neither the Conservation District nor the NRCS designed the new facilities on the HB Dairy and that facility construction was done without costshare from NRCS." Porath also indicated that he was going to meet with Lauri Crowe at the end of September to review the DWMP. Certain revisions were made to the DWMP in October of 1998, by Lauri Crowe after her meeting with Porath. Those revisions did not contain any amendments, revisions or corrections to 1151*1151 page 13 of the DWMP dealing with the truck wash.

In January of 1999, the John Monks, a hydrogeologist, and Alan Gay, a civil and environmental engineer, experts consulting with CARE, along with Kevin Freeman, a hydrogeologist, an expert consulting with Bosma, and Harold Porath, as well as several members of CARE, and attorneys for both parties visited the Dairies to conduct discovery. During these site visits, Mr. Freeman took certain measurements of the lagoons. Gay and Freeman walked J.D. 26.6 on the Bosma property and took water samples. Gay and Freeman did some bucket tests to determine rate of flow. The embankments of the storage pond above Kirks Road and those south of Kirks Road were observed, as was the land on the west side of J.D. 26.6 north of the Canal. In January, the storage ponds would contain a large amount of animal wastewaters since application to frozen fields in winter months is prohibited by the DWMP. No seepage or evidence of seepage from the storage ponds was observed by any person or expert. There was no credible evidence of erosion of the embankments of the storage ponds observed by any person or expert. Various photos were taken by different individuals during those site visits.

Wastewater samples were taken at four different sites within J.D. 26.6. The first location was the pipe above Kirks Road near the Cow Palace outfall. The next locations were opposite the north and south ends of Pond # 2. The final sample was taken from the flume or weir box opposite Pond # 1. The water samples were tested for fecal coliform, nitrates, ortho-phosphates, total phosphates, ammonia, chloride, conductivity, kjeldahl nitrogen,

and nitrite. The results of the water sampling indicate the concentrations of all constituents except for ortho-phosphate, total phosphate and fecal coliforms are consistent over the investigated length of 26.6. Elevated fecal coliform existed during both site visits in the reach adjacent to the lowest lagoons but not above those lagoons. The fecal levels adjacent to and below the lagoons were consistently above the state standards of 100mL/100 colonies. Detected concentrations of orth-phosphate and total phosphate elevated in the reach adjacent to Pond # 1.

In March of 1999, Richard Haapala, an expert in agricultural engineering, visited the Dairies to consult with Bosma. In April of 1999, Philip Small, an expert in soils sampling and analysis, also visited the Bosma property to consult with Bosma.

All of these experts testified at trial regarding CARE's claim that Storage Ponds # 1 and # 2 were leaking into J.D. 26.6. and the claim that these same storage ponds lacked capacity to comply with the storage requirements of the DWMP and the CWA in that they could not contain the required wastes in the event of a 25-year, 24-hour storm event. Essentially these are claims that there are continuing violations of the CWA/NPDES permit or the likelihood of continuing violations related to these storage ponds.

The Court has in mind the testimony of the witnesses, its review of the exhibits, its determination of the credibility of the witnesses, and the facts as found above and elsewhere herein.

From **UNITED STATES OF AMERICA, Plaintiff, v. COW PALACE, LLC; THE DOLSEN COMPANIES; THREE D PROPERTIES, LLC; GEORGE & MARGARET, L.L.C.; GEORGE DERUYTER AND SON DAIRY, L.L.C.; D AND J DAIRY, L.L.C. (f/k/a D AND A DAIRY, L.L.C.); LIBERTY DAIRY, LLC; ARIZONA ACRES LIMITED PARTNERSHIP; LIBERTY ACRES LLC; BOSMA DAIRY PARTNERS, LLC; BOSMA ENTERPRISES, INC.; HENRY BOSMA; HENRIETTA BOSMA; and KATHLEEN NICOLAUS**

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Present-Day Imminent and Substantial Endangerment

54. As of the date of this Complaint, the imminent and substantial endangerment to Residents posed by the nitrate contamination of the underground sources of drinking water has not abated.

55. Each of the Dairies continues to generate tens of millions of gallons of liquid cow manure and hundreds of thousands of tons of solid cow manure each year.

56. The Dairies continue to apply manure at Defendants' properties at rates that exceed the capacity of crops to take up the nitrogen contained in the manure. Soil sampling from the Dairies' application fields shows that as of 2023, several fields still contain moderate to high concentrations of nitrate. At least four Bosma Dairy application fields contain between 15-30 ppm of nitrate, two Bosma Dairy application fields contain 31-45 ppm of nitrate, and one DeRuyter Dairy field, GDS-SUO4, exceeds 45 ppm of nitrate.

57. Excess nitrate from field application on Defendants' properties continues to travel downward through the vadose zone and contaminates groundwater.

58. Nitrate has also accumulated in the soil around or beneath lagoons due to past or ongoing seepage from the lagoons. In September 2022, soil beneath Bosma Dairy Lagoons 1, 2, and 3 tested as high as 1,331 ppm for available nitrogen.

59. Nitrate accumulating in the soil around or beneath lagoons that have not been properly lined or abandoned continues to migrate downward through the soil and contaminates groundwater.

60. The Dairies' groundwater monitoring requirements under the Consent Order expired in Summer 2021. The Dairies have continued to voluntarily sample and report data from Monitoring Wells since Summer 2021, but that sampling and reporting is no longer subject to the parameters and validation procedures required under the Consent Order.

61. In 2022, groundwater monitoring data showed that nitrate concentrations exceeded 10 mg/L at 17 of the 22 Monitoring Wells downgradient of the Dairies for at least one quarter of the year. The highest nitrate concentration reported was 182 mg/L at DC-03, located downgradient of Bosma Lagoons 2 and 3 and adjacent to Bosma Lagoon 1.

62. The Dairies reported more recent Monitoring Well data in 2023, but that data was subject to validation errors—such as violations of sample holding times—that decrease the reliability of the data. 63. Even with less reliable data, the fourth quarter 2023 Monitoring Well data reported by the Dairies still indicates several nitrate "hot spots" on or downgradient of Defendants' properties, including:

a. DC-03 (137 mg/L), located downgradient of Bosma Dairy animal confinement and manure storage areas, application fields, and Bosma Lagoons 2 and 3, and adjacent to Bosma Lagoon 1.

b. DC-14 (43 mg/L), located downgradient of Cow Palace Dairy animal confinement areas and manure storage areas, and near Cow Palace Lagoon 1;

c. YVD-10 (64.3 mg/L), located downgradient of Cow Palace Dairy and DeRuyter Dairy animal confinement and manure storage areas, application fields, and Cow Palace lagoons;

d. YVD-14R (111 mg/L) and YVD-08 (52 mg/L), located downgradient of Bosma Dairy and Cow Palace Dairy animal confinement and manure storage areas and application fields, and downgradient or near Bosma Dairy lagoons;

e. YVD-09 (66.9 mg/L), located at Bosma Dairy animal confinement and compost areas and downgradient of Cow Palace Dairy animal confinement and manure storage areas, and application fields; and

f. YVD-11 (72.4 mg/L), located downgradient of DeRuyter Dairy animal confinement and manure storage areas, and application fields.

64. Analytical modeling based on available Monitoring Well and Residential Well data estimates that nitrate plumes from Defendants' properties extend several miles downgradient ("Affected Area").

65. The Dairies do not monitor groundwater at certain locations along their western and southern property boundaries. Consequently, some areas hydraulically downgradient of Defendants' properties lack sufficient data to estimate the extent of nitrate plumes from Defendants' properties. Modeling results indicate that Defendants contribute to nitrate exceedances of 10 mg/L more than one mile downgradient, such that Defendants may be contributing nitrate to groundwater in these data-scarce areas ("Potentially Affected Area") and possibly farther downgradient.

66. 2 Nitrate plumes from Defendants' activities and properties may present an imminent and substantial endangerment to Residents in the Affected Area and Potentially Affected Area.

67. Recent data from Residential Wells is more limited than data from Monitoring Wells, but some data is available through the State's Ambient Groundwater Monitoring Network. The available data shows that Residential Wells in the Affected and Potentially Affected Areas continue to exceed or nearly exceed the nitrate MCL.

68. Between fall 2022 and summer 2023, Residential Wells in the Affected and Potentially Affected Areas within one mile downgradient of Defendants reported exceedances of the nitrate MCL, including but not limited to: GG-068 (13.2 mg/L); GG-071 (11.4 mg/L); GG-165 (10.7 mg/L); and GG-166 (12 mg/L).

69. In May and June 2023, Residential Wells in the Affected Area within three miles downgradient of Defendants reported exceedances of the nitrate MCL, including but not limited to: GG-179 (14 mg/L) and GG-074 (45.9 mg/L).

70. Residents in the Affected and Potentially Affected Areas who rely on drinking water from the Aquifers remain at risk of experiencing health problems associated with consuming nitrate above the MCL, including but not limited to Blue Baby Syndrome.

71. 2 Babies born in the Affected and Potentially Affected Areas remain at risk of Blue Baby Syndrome caused by consumption of nitrate above the MCL. In 2022, census data reported 3,449 births in Yakima County, which is the county where the Affected and Potentially Affected Areas are located.

72. Defendants have individually and collectively caused or contributed to, and continue to cause or contribute to, the contamination and threatened contamination of an underground source of drinking water.

73. Defendants' historical and ongoing contamination of the underground sources of drinking water may present an imminent and substantial endangerment to the health of Residents in the Affected and Potentially Affected Areas within the meaning of Section 1431 of the Act, 42 U.S.C. § 300i(a).

74. Washington Department of Ecology and Washington Department of Health have agreed that continued application of federal resources is necessary to address the public health threat posed by nitrate contamination of the underground sources of drinking water downgradient of Defendants' properties.

75. The Washington Department of Ecology has issued and implements a CAFO General Permit for Cow Palace and DeRuyter Dairies to limit nitrate discharges from their dairy operations. Pursuant to a memorandum of understanding with the Department of Ecology, the Washington Department of Agriculture helps to administer the CAFO General Permit. As of the date of this Complaint, Bosma Dairy remains unpermitted.

76. To date, the State's permitting efforts have not abated nitrate contamination over 10 mg/L in Residents' drinking water.

77. Yakima County has started to conduct limited outreach to Lower Yakima Valley residents to offer well testing and to provide alternative water. The County's outreach plans do not include Residents within one mile downgradient from Defendants and will not address source control measures.

78. State and local officials have therefore not acted as necessary to protect the health of Residents in the Affected and Potentially Affected Areas, but the Washington Departments

of Health and Ecology have deferred to EPA to protect the health of Residents endangered by Defendants' historical and ongoing nitrate contamination of the Aquifers.

Delays in Lining and Abandoning Manure Storage Lagoons

79. Under Section III(F)(6) of the Statement of Work, the Dairies were required to submit to EPA a Lagoon Review Report within 60 days of the Consent Order's effective date, documenting that each of their existing manure storage lagoons were constructed in accordance with Washington State Natural Resources Conservation Service, Conservation Practice Standard No. 313 – Waste Storage Facility (WA NRCS 313 standard).

80. Within 60 days of EPA approval of the Lagoon Review Report, for any lagoons not constructed to meet the current WA NRCS 313 standard, the Dairies were required to submit a plan for conducting an evaluation of each such lagoon at the Dairies' facilities, to determine whether each lagoon satisfies the current WA NRCS 313 standard ("Lagoon Evaluation Plan").

81. If the Lagoon Evaluation Plan concluded that a lagoon failed to meet the WA NRCS 313 standard, the Dairies were required to submit and implement a work plan describing, at the Dairies' election, measures to address leakage or how the Dairies will line those lagoons to meet the current standard at the rate of one lagoon per Dairy Facility per year ("Lagoon Work Plan").

82. These Lagoon Work Plans proposed deadlines for completion of the lining or abandonment work.

83. Through the process of reviewing and approving each Lagoon Work Plan, EPA imposed interim deadlines including but not limited to: submission of initial, revised, and final work plans; performance of work for lining or abandonment; performance of interim measures, such as soil testing and interim containment of contamination; and submission of summaries of completed construction activities ("As-Built Reports").

84. 2 As set forth below, Bosma Dairy and DeRuyter Dairy consistently violated interim and final deadlines to complete lining or abandonment of their manure storage lagoons.

85. Bosma and DeRuyter Dairies' delays in completing lining or abandonment of their manure storage lagoons has prolonged nitrate contamination of the Aquifers from the lagoons and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Bosma Dairy

Lagoons 1-3

86. Bosma Dairy's Lagoons 1, 2, and 3 are among the largest and most contaminated of the Dairies' lagoons, with concentrations of available nitrogen in subsurface soils as high as 1,331 ppm. 87. Bosma Dairy elected to abandon Lagoons 1, 2, and 3 and submitted multiple draft plans to address clean-up of nitrate contamination at these lagoons.

88. Bosma Dairy failed to submit its plans in accordance with the Consent Order and EPA's approved deadlines.

89. Bosma Dairy submitted its Initial Abandonment Plan for Lagoons 1-3 on or around May 27, 2021.

90. Bosma Dairy was required to submit a Revised Abandonment Plan for Lagoons 1-3 by August 3, 2021, pursuant to EPA's letter dated July 2, 2021.

91. 2 Bosma Dairy did not submit its Revised Abandonment Plan for Lagoons 1-3 until on or around January 18, 2022, and its Revised Abandonment Plan failed to address EPA's comments set forth in EPA's letter dated July 2, 2021.

92. Bosma Dairy was required to submit a Second Revised Abandonment Plan for Lagoons 1-3 by April 25, 2022.

93. Bosma Dairy submitted its Second Revised Abandonment Plan for Lagoons 1-3 by the April 25, 2022 extended deadline but failed to address EPA's comments set forth in EPA's letter dated March 9, 2022.

94. Bosma Dairy was required to submit its Third Revised Abandonment Plan for Lagoons 1-3 by August 1, 2022 pursuant to EPA's letter dated May 12, 2022. 95. Bosma Dairy failed to submit its Third Revised Abandonment Plan until on or around December 30, 2022.

95. Bosma Dairy failed to submit its Third Revised Abandonment Plan until on or around December 30, 2022.

96. Bosma Dairy repeatedly failed to address EPA's comment in its revised plans for abandonment of Lagoons 1, 2, and 3, which directed Bosma Dairy to include excavation of soil highly contaminated with nitrate in any abandonment plan for these lagoons.

97. Bosma Dairy's Third Revised Abandonment Plan ignored EPA's directive to include excavation of soil highly contaminated with nitrate, and instead proposed a new plan: installation of an evapotranspiration cap ("ET cap").

98. 2 EPA evaluated Bosma Dairy's ET cap proposal and determined that, if implemented as drafted, Bosma Dairy's Third Revised Abandonment Plan will not abate the high concentrations of nitrate discharged into the Aquifers from Bosma Dairy's Lagoons 1-3.

99. Bosma Dairy's failure to submit an adequate abandonment plan for Bosma Lagoons 1-3 has prolonged nitrate contamination of the Aquifers from Lagoons 1, 2, and 3 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

100. In addition to Bosma Dairy's failure to submit an adequate abandonment plan to address the nitrate hot spot at Bosma Lagoons 1, 2, and 3, Bosma Dairy also failed to complete interim work at Lagoons 1, 2, and 3 by EPA approved deadlines.

101. To minimize nitrate leaching into groundwater while Bosma Dairy completed abandonment of Lagoons 1, 2, and 3, EPA required that Bosma Dairy take interim measures including but not limited to re-grading the lagoons, installing sumps with pumps to detect and remove accumulating water, and installing cameras to ensure the sumps with pumps were functioning, as set forth in Bosma Dairy's Interim Containment Action Plan dated December 16, 2022.

102. Bosma Dairy was required to complete installation of interim containment measures by December 31, 2022 for Lagoons 1 and 2 pursuant to EPA's letters dated November 15, 2022 and December 9, 2022.

103. Bosma Dairy was required to complete installation of interim containment measures at Lagoon 3 by April 1, 2022 pursuant to EPA's letter dated March 9, 2022.

104. Bosma Dairy did not complete interim containment measures for Lagoons 1, 2, and 3 until on or around February 13, 2023.

105. Bosma Dairy's failure to timely complete interim containment measures at Lagoons 1, 2, and 3 prolonged nitrate contamination of the Aquifers from Lagoons 1, 2, and 3 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

106. Bosma Dairy was also required to conduct soil sampling at Lagoons 1, 2, and 3 pursuant to Bosma Dairy's April 22, 2022 Second Revised Abandonment Plan.

107. Bosma Dairy's Second Revised Abandonment Plan required Bosma Dairy to conduct soil testing at specified locations within Lagoons 1-3, including testing for total Kjeldahl nitrogen ("TKN"), sampling using a backhoe machine ("backhoe testing"), and follow-up sampling using an auger depending on the sampling results from backhoe testing.

108. Bosma Dairy failed to timely complete all required soil sampling for Lagoons 1-3. Bosma Dairy's failure to timely complete soil sampling has prevented a determination of the extent of nitrate contamination beneath the lagoons. This determination is necessary to inform work to address nitrate leaching from beneath Lagoons 1-3 into groundwater.

109. Bosma's failure to timely complete the required soil sampling has delayed further work to address this nitrate source, which has prolonged nitrate contamination of the Aquifers from Lagoons 1, 2, and 3 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Lagoon 18

110. Bosma Dairy initially elected to line Lagoon 18.

111. Bosma Dairy was required to complete Lagoon 18 soil testing by April 1, 2020 and submit designs for the lagoon liner by June 1, 2020, pursuant to EPA's letter dated February 18, 2020.

112. On August 27, 2020, EPA notified Bosma Dairy that its deliverables were past due.

113. Bosma Dairy then elected to abandon Lagoon 18. On or around September 17, 2020, Bosma Dairy submitted a lagoon abandonment plan to EPA in lieu of a liner design for Lagoon 18.

114. Bosma Dairy was required to complete abandonment of Lagoon 18 by December 31, 2020, pursuant to its Revised Abandonment Plan dated November 3, 2020.

115. Based on its completion report submitted on or around May 16, 2022, Bosma Dairy claims it completed abandonment of Lagoon 18 on or around May 2022.

116. Bosma Dairy's failure to timely complete abandonment of Lagoon 18 prolonged nitrate contamination of the Aquifers from Lagoon 18 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Lagoons 8, 9, and 19

117. Bosma Dairy elected to abandon Lagoons 8, 9, and 19.

118. Bosma Dairy was required to complete abandonment, including site restoration, at these three lagoons by December 31, 2019, pursuant to EPA's letters dated September 18, 2019 and November 7, 2019.

119. Bosma Dairy did not complete abandonment, including site restoration, of Lagoons 8, 9, and 19 until on or around April 1, 2021.

120. Bosma Dairy's failure to timely complete abandonment of Lagoons 8, 9, and 19 prolonged nitrate contamination of the Aquifers from Lagoons 8, 9, and 19 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

DeRuyter Dairy

Take-Up Pond

121. DeRuyter Dairy elected to abandon its Take-Up Pond. DeRuyter was required to complete abandonment of its Take-Up Pond by December 31, 2021, pursuant to EPA's letter dated January 8, 2021.

122. DeRuyter Dairy did not complete abandonment of its Take-Up Pond until on or around June 10, 2022.

123. DeRuyter Dairy repeatedly failed to address EPA's comments in its revised plans for abandonment of its Take-Up Pond. These failures resulted in DeRuyter submitting five abandonment plans on or around June 1, 2021, August 18, 2021, October 8, 2021, November 16, 2021, and November 23, 2021, before it submitted a final plan on or around December 21, 2021 that EPA approved.

124. DeRuyter Dairy's failure to timely complete abandonment of its Take Up Pond prolonged nitrate contamination of the Aquifers from the DeRuyter Take Up Pond and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Lagoon 1

125. DeRuyter Dairy elected to line Lagoon 1.

126. DeRuyter Dairy was required to complete construction of the Lagoon 1 liner by December 31, 2021, pursuant to EPA's letter dated January 8, 2021.

127. DeRuyter Dairy did not complete lining of Lagoon 1 until on or around June 9, 2022.

128. DeRuyter Dairy repeatedly failed to address EPA's comments in its revised plans for lining Lagoon 1. These failures resulted in DeRuyter Dairy submitting four liner construction plans on or around May 26, 2021, September 23, 2021, October 8, 2021, and December 21, 2021, before it submitted a final plan on January 11, 2022 that EPA approved.

129. DeRuyter Dairy was required to complete soil testing on Lagoon 1 by April 1, 2021, pursuant to EPA's letter dated January 8, 2021.

130. DeRuyter Dairy did not complete soil testing on Lagoon 1 until on or around October 30, 2021.

131. DeRuyter Dairy's failure to timely complete soil testing at Lagoon 1 delayed determination of the extent of nitrate contamination beneath the lagoons, which was

necessary to inform work to address nitrate leaching from beneath Lagoon 1 into groundwater.

132. DeRuyter Dairy's failure to timely complete the required soil sampling delayed further work to address this nitrate source, which prolonged nitrate contamination of the Aquifers from Lagoon 1 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Failure to Report Liner Issues at Cow Palace Lagoon 1

133. Cow Palace Dairy elected to line Lagoon 1.

134. On or about November 28, 2019, during installation of the liner for Lagoon 1, a windstorm damaged the lower liner by ripping a 350-foot tear across the middle of the liner.

135. Cow Palace Dairy was required to disclose the Lagoon 1 lower-liner tear to EPA in December 2019, when it submitted its Monthly Progress Report.

136. Cow Palace Dairy did not disclose the Lagoon 1 lower-liner tear to EPA until on or around March 31, 2020, when it submitted its As-Built Report summarizing completion of Lagoon 1 lining activities.

137. Cow Palace Dairy was required to submit to EPA the As-Built Report for completion of construction activities at Lagoon 1 by February 1, 2020, pursuant to EPA's letter dated December 1, 2019.

138. Cow Palace Dairy's March 31, 2020 As-Built Report stated that Cow Palace Dairy repaired the torn lower liner between November 29 and December 6, 2020 and installed it at Lagoon 1.

139. Beginning on or around February 2020, approximately 122,051 gallons of liquid manure leaked through the upper liner in Lagoon 1. The leak required Cow Palace Dairy to make repairs to the Lagoon 1 upper liner in May 2020 before returning it to service.

140. Under the Cow Palace Dairy Facility Operations, Maintenance, and Monitoring Plan ("O&M Plan"), approved by EPA on or around April 19, 2019, Cow Palace Dairy is required to report large leaks—meaning leaks greater than or equal to 2,800 gallons per day—to EPA within seven days of detection.

141. The February 2020 leak of approximately 122,051 gallons was a large leak requiring disclosure to EPA within seven days of detection.

142. An inspection report, submitted to EPA with Cow Palace Dairy's 2020 Annual Report, indicated that Cow Palace Dairy detected the leak at Lagoon 1 no later than March 4, 2020, such that reporting to EPA was required no later than March 11, 2020.

143. Cow Palace Dairy did not disclose to EPA the February 2020 large leak from Lagoon 1 until on or around March 1, 2021, when it submitted its 2020 Annual Report.

144. Cow Palace Dairy also did not disclose to EPA the February 2020 large leak from Lagoon 1 in any of its subsequent Monthly Progress Reports.

145. Cow Palace Dairy's failure to timely report to EPA issues installing and operating the liner at Cow Palace Lagoon 1 prevented EPA oversight of repair efforts to ensure that Cow Palace Dairy implemented effective repairs.

146. EPA's inability to review Cow Palace Dairy's repair efforts has potentially prolonged nitrate contamination of the Aquifers from Lagoon 1 and delayed abatement of the imminent and substantial endangerment to Residents.

Ongoing Leakage from Cow Palace Lagoon 1

147. From September 2016 until June 2020, monitoring well DC-14, located about 50 yards downgradient of Lagoon 1, consistently tested below 10 mg/L.

148. In June 2020, nitrate levels at DC-14 exceeded 10 mg/L for the first time since September 2016.

149. On or around January 27, 2022, EPA wrote to Cow Palace Dairy regarding its concern that the liner system in Lagoon 1 may be leaking based on spiking nitrate levels at monitoring well DC-14.

150. On or around April 20, 2022, EPA directed Cow Palace Dairy to prepare and submit by May 20, 2022 materials to address the potential leakage at Cow Palace Lagoon 1, including an addendum to its Quality Assurance and Quality Control Manual ("QA/QC Manual") for tests to determine whether Lagoon 1 was leaking and a schedule to test Lagoon 1 for leakage.

151. Cow Palace Dairy never submitted the addendum to the QA/QC Manual and has not tested Lagoon 1 for leakage.

152. Since June 2020, monitoring well DC-14 has tested above 10 mg/L in every quarter, with concentrations reaching as high as 57.4 mg/L in June 2022. Based on the spiking nitrate levels at DC-14, Lagoon 1 is likely leaking due to a liner failure such that immediate testing for leakage is appropriate.

153. Cow Palace's failure to test Cow Palace Lagoon 1 for leakage has potentially prolonged nitrate contamination of the Aquifers from Cow Palace Lagoon 1 and/or underlying soil and delayed abatement of the imminent and substantial endangerment to Residents.

Failure to Operate Moisture Sensors in Application Fields

154. Under Section III(F)(2) of the Statement of Work, the Dairies must work with a professional irrigation consultant to prepare and submit an Irrigation Water Management Plan that describes a system for irrigation water management.

155. To minimize the amount of nitrate leaching past the root zone, the Irrigation Water Management Plan requires the installation of electronic sensors in and below the crop root zone in each application field to provide for automatic shut-off of the irrigation system if moisture is detected below the root zone at the three-foot depth.

156. The Dairies submitted their Irrigation Management Plans on August 4, 2014, which were conditionally approved by EPA on August 12, 2014. The Dairies submitted their final Irrigation Water Management Plans on August 15, 2014.

157. Each Irrigation Water Management Plan requires monitoring of soil moisture in application field soils at various depths during active irrigation.

158. Each Irrigation Water Management Plan prohibits irrigation of application fields when moisture sensors are not in use.

159. Each Irrigation Water Management Plan requires either two or three soil moisture monitoring locations in each of the Dairies' 34 application fields. Each monitoring location includes three moisture sensors at different soil depths.

160. The Dairies installed moisture sensors as provided in the Irrigation Water Management Plans on or around November 2014.

161. The Dairies, individually and collectively, failed to consistently operate moisture sensors between 2019 and 2023, on or around the dates set forth in Appendix A.

162. The Dairies' failure to consistently operate moisture sensors prevented shut-off of the irrigation systems, which prolonged nitrate contamination of the Aquifers from manure application fields and delayed abatement of the imminent and substantial endangerment to Residents.

Overapplication of Manure to Fields

163. Section III(F)(7) of the Statement of Work requires the Dairies to "endeavor to avoid transporting manure to locations where groundwater is known by [the Dairies] to currently exceed 10 mg/L nitrate." It also prohibits manure application to crop fields in such areas if the post-harvest soil sample exceeds ppm nitrate at the 2-foot depth.

164. In 2019, DeRuyter Dairy transported and applied 1,116,000 gallons of liquid manure to a field without having collected the requisite soil sampling data.

165. Based on the field's location on or near the 1-mile downgradient boundary under the Consent Order, and nitrate data from nearby residential well GG-068, groundwater in this area was known by DeRuyter Dairy to exceed 10 mg/L.

166. DeRuyter Dairy's excessive application of manure to fields and failure to collect the requisite soil data before application has prolonged nitrate contamination of the Aquifers and delayed abatement of the imminent and substantial endangerment to Residents.

Failure to Report Off-Site Transportation of Manure

167. Section III(F)(7) of the Statement of Work requires the Dairies to maintain records of locations to which manure is transported off-site from Dairies' facilities and to submit those records in the Annual Report submitted to EPA.

168. In 2022, all the Dairies collectively reported that more than 16 million gallons of liquid manure and over 110,000 tons of solid manure were transported off-site that year, but failed to maintain and submit to EPA any records of where that manure was transported.

a. Bosma Dairy reported approximately 1 million gallons of liquid manure and 33,000 tons of solid manure transported off-site in 2022, without providing EPA with records of where the manure was transported.

b. DeRuyter Dairy reported 12.78 million gallons of liquid manure and 44,378 tons of solid manure transported off-site in 2022, without providing EPA with records of where the manure was transported.

c. Cow Palace Dairy reported 4.23 million gallons of liquid manure and 33,600 tons of solid manure transported off-site in 2022, without providing EPA with records of where the manure was transported.

169. In 2023, all the Dairies collectively reported that more than 9 million gallons of liquid manure and almost 80,000 tons of solid manure were transported off-site that year, but failed to maintain and submit to EPA any records of where that manure was transported.

a. Bosma Dairy reported approximately 2 million gallons of liquid manure and 32,000 tons of solid manure transported off-site in 2023, without providing EPA with records of where the manure was transported.

b. DeRuyter Dairy reported 2.4 million gallons of liquid manure and 19,339 tons of solid manure transported off-site in 2023, without providing EPA with records of where the manure was transported.

c. Cow Palace Dairy reported 4.63 million gallons of liquid manure and 28,483 tons of solid manure transported off-site in 2023, without providing EPA with records of where the manure was transported.

170. The Dairies' failure to provide to EPA records of the locations where manure is transported has impeded EPA oversight of the Dairies' off-site transport of manure to ensure that the Dairies are not applying manure to nitrate-saturated fields. EPA's lack of oversight into the Dairies' off-site transport of manure has potentially prolonged nitrate contamination of the Aquifers from manure application fields and delayed abatement of the imminent and substantial endangerment to Residents.

Incomplete Soil Sampling and Reporting

171. Under Section III(F)(1)(c) and (e) of the Statement of Work, the Dairies must take spring "pre-planting" and fall "post-harvest" soil samples from their manure application fields at specified locations and depths.

172. The soil samples are to provide information on soil nitrate concentrations in and moving below the crop root zones in the Dairies' application fields.

173. The soil samples must be collected in accordance with the Dairies' Dairy Facility Application Field Management Plans, Nutrient Management Plans, and U.S. Natural Resources Conservation Service's soil sampling guidance.

174. On September 23, 2021, EPA advised the Dairies that soil sampling of manure application fields must continue until termination of the Consent Order. Nevertheless, the Dairies stopped soil sampling required by the Consent Order at their application fields in or around Spring 2022.

175. Instead, the Dairies have conducted soil sampling since Fall 2022 under the CAFO General Permit, which lacks sufficient information for EPA to assess whether the Dairies complied with Consent Order requirements. The missing information includes but is not limited to data validation reports and the number and locations of samples collected from each application field.

176. The Dairies failed to provide the fall "post-harvest" soil samples for 2022 as required under Section III(F)(1)(c) and (e).

177. The Dairies failed to provide the spring "pre-planting" and fall "post harvest" soil samples for 2023 as required under Section III(F)(1)(c) and (e).

178. The Dairies' failure to provide current, accurate soil sampling data prevents EPA oversight of nitrate levels in application fields to ensure that the Dairies are not over-applying manure.

179. The Dairies' failure to comply with soil sampling and reporting requirements for their manure application fields has potentially prolonged nitrate contamination of the Aquifers from manure application fields and delayed abatement of the imminent and substantial endangerment to Residents.