2023 GROUND WATER QUALITY MONITORING REPORT

South Platte Natural Resources District

NOVEMBER 1, 2023

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Nitrates in Drinking Water

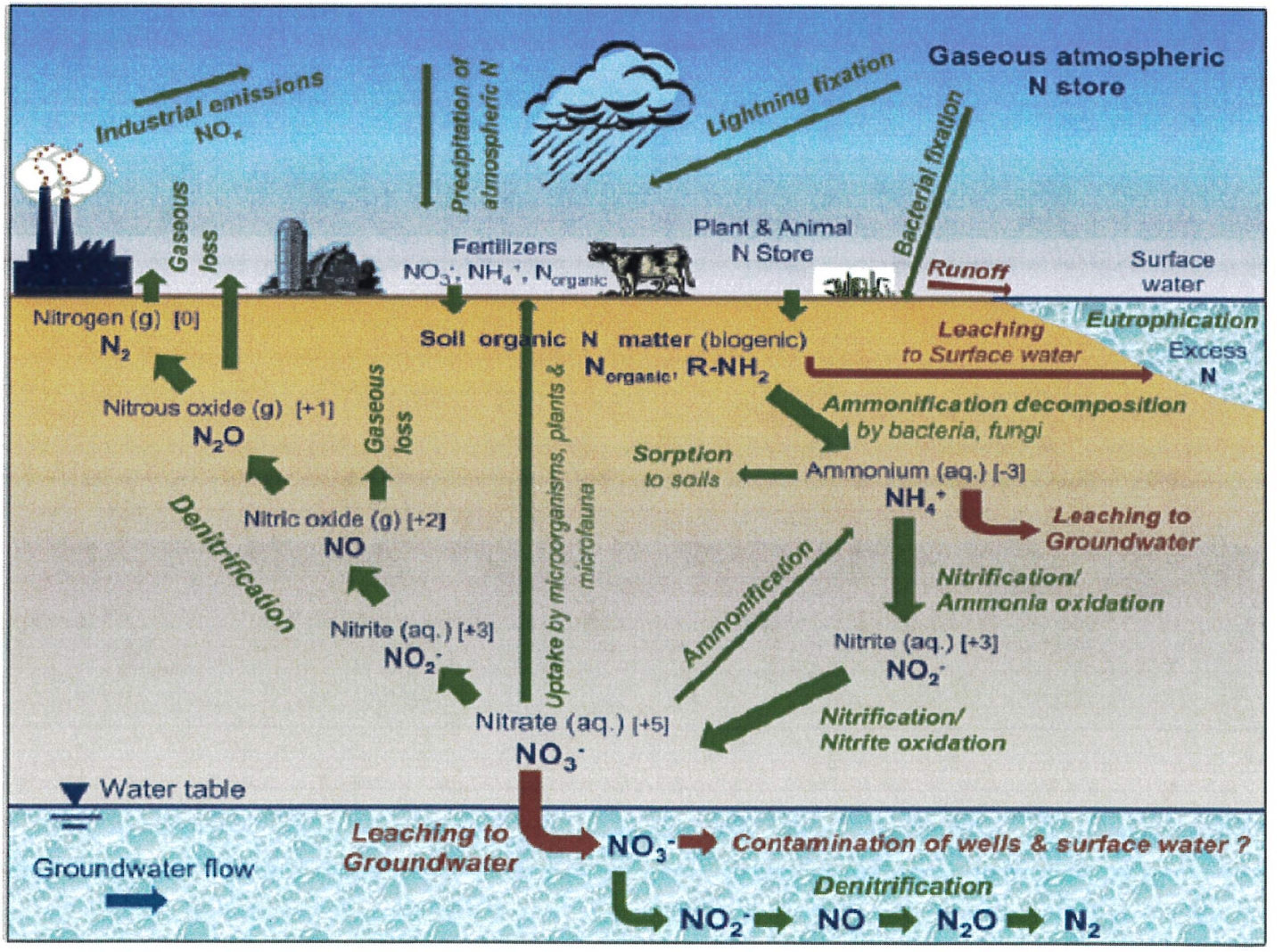
Nitrate levels are regulated within the SPNRD primarily because excess levels can cause methemoglobinemia, or "blue baby" disease. This sickness is extremely rare, but it is important to be aware of the risks. Nitrate levels that affect infants do not pose a direct threat to older children and adults until nitrate levels exceed 100 ppm, but the effect on any given person depends on many factors. (Source: Cornell University Cooperative Extension).

Methemoglobinemia is the most significant health problem associated with nitrate in drinking water. During the process of reduction, nitrite (NO2) can be formed from nitrate (NO3). When nitrite is present, hemoglobin (which is an iron-based compound which carries oxygen) can be converted to methemoglobin (which cannot carry oxygen). When oxygen cannot be carried through the blood stream, the skin turns blue and brain damage or death can occur.

The current standard for nitrate in drinking water is set at 10 ppm. Because potential health risks are often unknown or hard to predict, many drinking water standards are set at some fraction of the level of "no-observed adverse health effects". In general, the greater the uncertainty about potential health effects, the greater the margin of safety built into the standard.

Nitrate in groundwater originates primarily from synthetic fertilizers, septic systems, and manure. Nitrogen that is not taken up by plants, volatilized, or carried away by surface runoff can leach below the root zone in the form of nitrate and contaminate drinking water sources.

Nitrogen Cycle



Summary

This report summarizes the 2023 ground water quality monitoring program for the South Platte Natural Resources District (SPNRD).

The SPNRD has completed its thirty-fifth year of monitoring nitrates in the District. Of the 160 network wells in this report, 138 were sampled at least once this year. This breaks down to 47 of 51 domestic wells, 60 out of 74 irrigation wells, 26 out of 27 dedicated monitoring wells, and five out of eight municipal wells. The municipal nitrate information is collected by the city of Sidney, and they allow the NRD to use their data for this report. Some irrigation wells were unable to be sampled for the following reasons: EQIP/CREP practices (2), the well was not used this year (5), or I was unable to catch the well running (7). Most irrigation users have also gone to a set irrigation schedule which makes it difficult to catch those systems running. The domestic wells that were not sampled for the following reasons: no power to the well (3) or locked gates (1). The one monitoring well that wasn't sampled was dry. The three municipal wells that were not sampled were because the city no longer uses them in their water system and therefore isn't required to sample them anymore.

There are 62 monitoring wells established on the tablelands that are not considered in the network. All these wells have been sampled within the last few years. Except for three wells, nitrate results in these wells fall between 1-3 parts per million (ppm). We also sample several wells in the valley that are excluded from this report either because of a potential point source being possible or landowner request not to include their data in the report. These samples are still added to the database for staff information but are not included in this report.

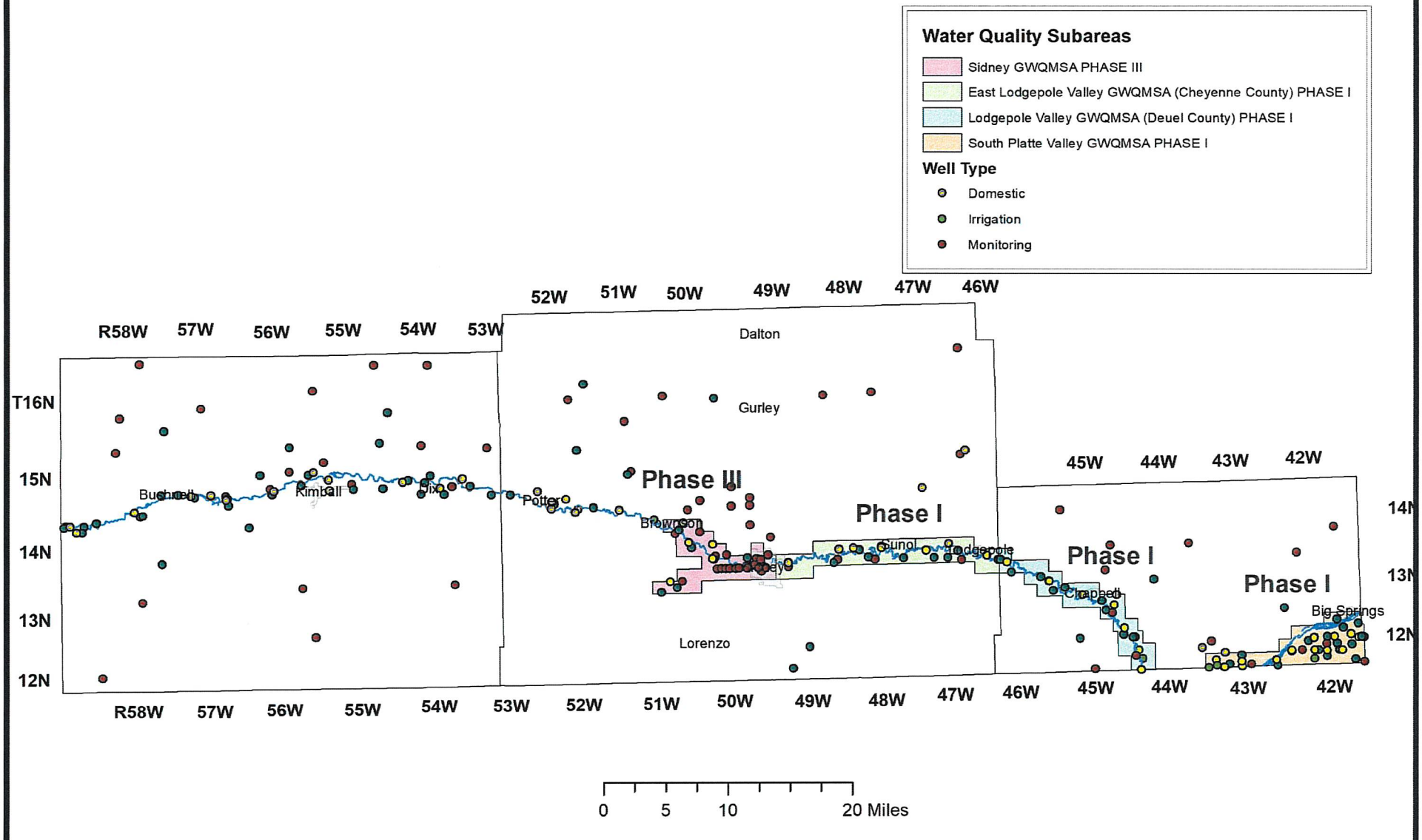
Quality Assurance/Quality Control (QA/QC) measures were followed during nitrate sampling. The primary method used for QA/QC was duplicate sampling. One duplicate was taken for every ten samples. The relative percent difference (RPD) was determined from the two duplicate samples. An average of this percent is then calculated for all the RPD's. This year's average was 7.99% for 24 duplicate samples. According to Ward Laboratories, the most precise data will fall within the 0-10% range.

Attached in this report is a map indicating the current SPNRD ground water quality management subareas and the management area phase those subareas are in.

Items to take into consideration when reviewing the following information obtained in this report:

- The Sidney GWQMSA is in a Phase III management control (three consecutive years over the 95% MCL trigger). Producers in this area are required to abide by the District's Nitrogen Reporting Program.
- The board took action earlier this year to move the South Platte Valley GWQMSA from Phase I to Phase II. However, this change does not take place until the 2024 irrigation season.
- Nitrate levels along the Lodgepole Creek in Kimball county between Pine Bluffs, WY and Bushnell have been increasing over time; however, this year the levels were slightly down compared to 2022. Hopefully, this trend continues. Currently, there are no ground water quality management areas designated in Kimball county. The rules state that a subarea needs to be no less than 16 square miles and 4 monitoring wells will be sampled before a Phase area is triggered. As a reminder our Phases are as follows:
    - Phase I – nitrate-nitrogen levels of 6.5 ppm average for 3 consecutive years
    - Phase II – nitrate-nitrogen levels of 8.0 ppm average for 3 consecutive years
    - Phase III – nitrate-nitrogen levels of 9.5 ppm average for 3 consecutive years

SPNRD Ground Water Quality Subareas



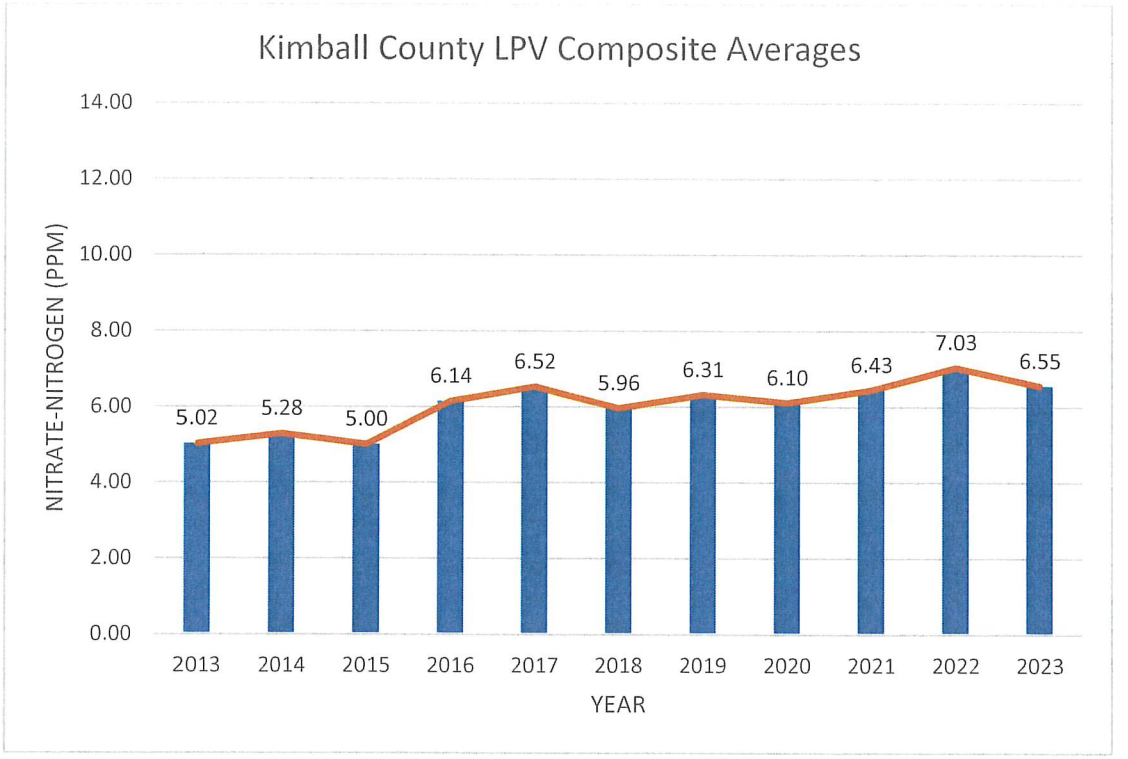
SOUTH PLATTE
NATURAL RESOURCES DISTRICT

NITRATE AVERAGES FOR TARGET SUBAREAS OF THE DISTRICT

Target Area	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
City of Sidney Municipal Wells	11.64	9.82	9.83	9.82	11.38	12.89	12.75	13.00	13.44	12.96	13.11
Sidney Draw Trigger Monitoring Wells	10.22	9.88	10.53	10.49	11.10	11.74	11.82	13.70	14.58	14.30	13.26
Sidney GWMA Network Wells	4.55	4.61	4.72	6.91	7.05	8.04	8.39	10.46	9.71	9.06	9.05
Composite Average SGWQMSA (Phase II)	**9.03**	**8.01**	**8.40**	**8.97**	**9.77**	**10.56**	**10.55**	**12.16**	**12.10**	**11.60**	11.35
East Lodgepole Valley GWMA Network Wells	7.51	7.52	7.33	7.18	7.25	7.22	6.64	7.25	6.92	7.56	7.28
East Lodgepole Valley Monitoring Wells	9.99	8.57	7.45	8.65	9.99	10.03	9.00	8.90	9.20	8.70	5.20
Composite Average East Lodgepole Valley GWQMSA (Phase I)	**8.00**	**7.74**	**7.36**	**7.51**	**7.85**	**7.92**	**7.31**	**7.66**	**7.49**	**7.82**	6.82
West Lodgepole Valley Cheyenne County	3.90	3.71	3.43	4.13	5.07	4.16	3.86	3.49	3.71	4.84	3.39
South Platte Valley GWMA Network Wells	8.63	8.97	8.75	9.98	8.50	9.29	8.70	10.32	9.97	10.38	10.09
South Platte Valley Monitoring Wells	5.90	5.32	4.73	4.42	3.90	3.82	3.92	4.87	5.38	5.07	5.31
Composite Average South Platte Valley GWQMSA (Phase I)	**8.02**	**8.21**	**7.89**	**8.79**	**7.55**	**8.20**	**7.74**	**9.23**	**8.95**	**9.28**	9.13
Lodgepole Valley (DC) GWMA Network Wells	5.69	6.16	6.36	7.57	6.90	7.21	6.76	6.61	5.24	6.84	5.89
Lodgepole Valley (DC) Monitoring Wells	5.73	5.23	4.90	3.88	3.10	3.03	3.40	3.78	3.08	4.25	3.81
Composite Average Lodgepole Valley GWQMSA Deuel County (Phase I)	**5.70**	**5.93**	**6.00**	**6.70**	**5.73**	**6.01**	**5.80**	**5.98**	**4.70**	**6.23**	5.37
Lodgepole Valley (KC) Network Wells	4.68	5.00	4.73	5.97	6.24	5.87	6.53	6.06	6.08	6.90	6.41
Lodgepole Valley (KC) Monitoring Wells	6.63	6.27	5.71	6.68	7.55	6.26	5.61	6.27	7.89	7.66	7.14
Composite Average Lodgepole Valley (KC)	**5.02**	**5.28**	**5.00**	**6.14**	**6.52**	**5.96**	**6.31**	**6.10**	**6.43**	**7.03**	6.55

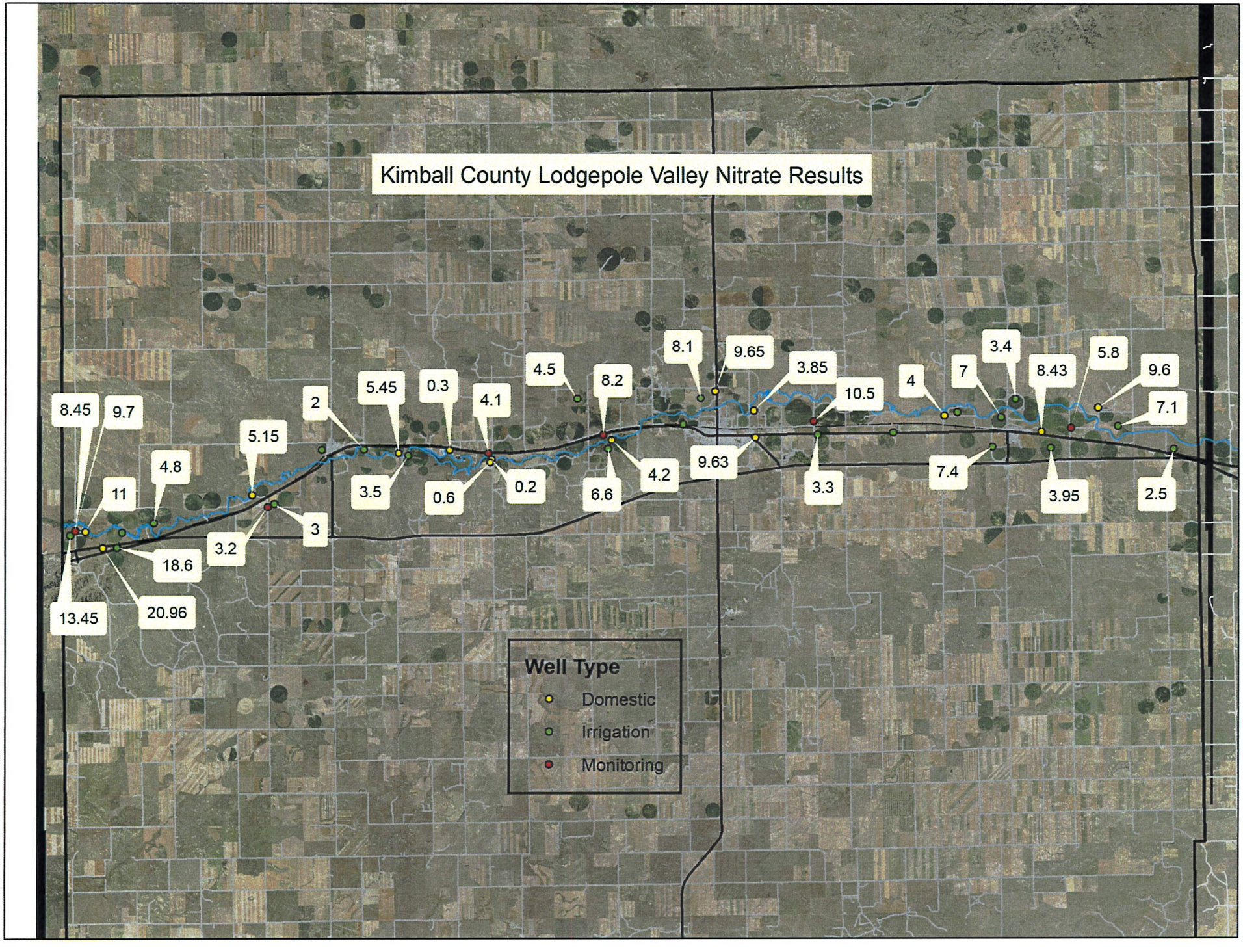
Kimball County Lodgepole Valley Composite Averages

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D017	0.15	0.15	0.10	0.10	0.15	0.30	0.10	0.15	0.15	0.20	0.20
	D003	5.30	5.40	5.65	7.10	9.20	10.00	10.90	11.50	11.75	12.60	11.00
	D027	5.80	5.65	5.83	5.85	6.30	6.05	6.90	7.60	7.50	11.85	9.65
	D018	2.85	0.70	0.70	1.53	0.77	0.90	0.60	0.40	0.50	0.55	0.60
	D030					10.95	10.05	9.85	10.30	9.80	11.40	9.63
	D044	10.13	11.03	10.45	13.73	11.00	9.35	8.50	9.53	9.40	10.03	8.43
	D022	4.05	4.05	3.90	4.15	4.70	4.40	4.20	4.45	4.40	5.20	4.20
	D038	3.80	4.55	4.20	6.20	7.80	3.77	4.10	3.95	3.30	4.80	4.00
	D004	7.77	7.97	8.10	9.40	11.90	14.40	18.85	18.50	20.23	22.55	20.97
	D029	3.40	4.30	7.37	7.20	6.80	5.95	5.35	3.90	3.60	4.77	3.85
	D014	6.05	5.40	6.00	6.23	9.45	6.40	8.45	7.55	6.25	6.45	5.45
	D007	5.25	5.65	5.10	5.90	6.00	4.60	4.45	4.80	4.50	5.67	5.15
	D016	2.25	2.30	1.80	0.20	0.20	0.25	0.10	0.20	0.10	0.20	0.30
	D043	6.20	7.30	8.00	7.70	10.45	10.95	11.23	12.05	12.50	12.45	9.60
Irrigation	I011								3.60		3.80	
	I013				3.40	2.80	2.90	2.20	2.30	2.30	2.55	2.00
	I024	4.50	5.00	5.80	5.80	6.10	6.00		6.30	5.20	5.67	6.60
	I039	6.80					9.40				9.40	
	I005	5.30	5.20						6.40	8.40	10.70	
	I006	6.30	7.20		9.00	9.80		13.50	14.10	15.15	16.47	18.60
	I025	3.90	4.40								4.40	4.50
	I041		2.70	2.80			3.10		3.60	4.40	3.60	3.40
	I008					2.60	2.20	2.70	2.40	3.00	3.00	3.00
	I037	5.80	4.80	5.10	6.30	6.60	7.20		7.95		8.60	7.00
	I001	4.60				9.90					14.90	13.45
	I045	2.70	3.30	3.40	3.70	3.50	3.80		4.20	3.40	3.95	3.95
	I032				5.60	4.60	4.80		4.60	5.00		
	I040	4.10	5.40	5.10	5.80	5.80	6.20	5.00	6.40	5.80	7.10	7.40
	I046	2.40	2.70	2.20	2.50	3.00	2.50		2.50	2.50	2.70	2.50
	I023	2.40	2.20						2.80	4.20	3.20	
	I028	5.30	5.40	4.90	7.90	6.60	7.20	6.90	6.50	7.65	8.40	8.10
	I002	5.20	8.90			6.10	5.20			3.80	4.50	4.80
	I015	3.10	4.00	2.80	4.00	3.00	3.20	2.70	3.20		3.70	3.50
	I031	3.20	3.10		3.00	2.80	3.30	3.00	3.60	3.60	4.10	3.30
	I042	7.20	11.20		17.00	12.00	15.90	14.10	12.60	8.00	5.30	7.10
Monitoring	K-1-D	5.60	5.90	4.80	6.00	5.90	4.30	4.50	4.20	5.90	5.50	5.80
	K-1-S		9.20	8.10	10.50	8.90	8.50					
	K-2	11.60	11.21	7.30	8.10	9.40	5.60	5.50	5.40	9.80	11.50	10.50
	K-3	7.60	6.20	10.50	9.30	12.50	8.70	4.50	8.90	9.60	9.10	8.20
	K-4	4.20	3.84	2.50	1.95	3.60	2.40	5.10	5.10	5.10	4.10	4.10
	K-5		2.62	2.40	2.50	2.60	2.30	2.60	3.10	3.20	3.10	3.20
	K-6-D	5.40	5.50	5.00	6.87	8.00	8.20	7.90	8.40	10.00	9.70	8.45
	K-6-S	5.40	5.70	5.10	8.20	9.50	10.10	9.20	8.80	11.60	10.60	9.70
Average		**5.02**	**5.28**	**5.00**	**6.14**	**6.52**	**5.96**	**6.31**	**6.10**	**6.43**	**7.03**	**6.55**



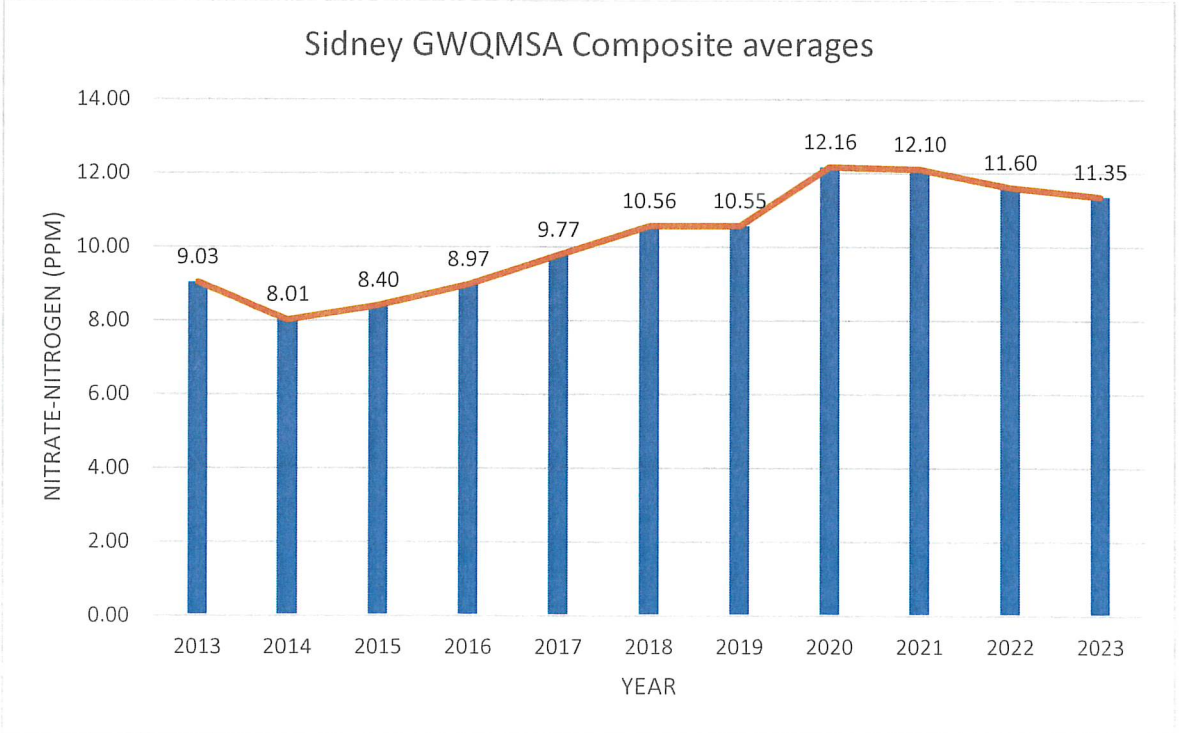
Kimball County Tablelands

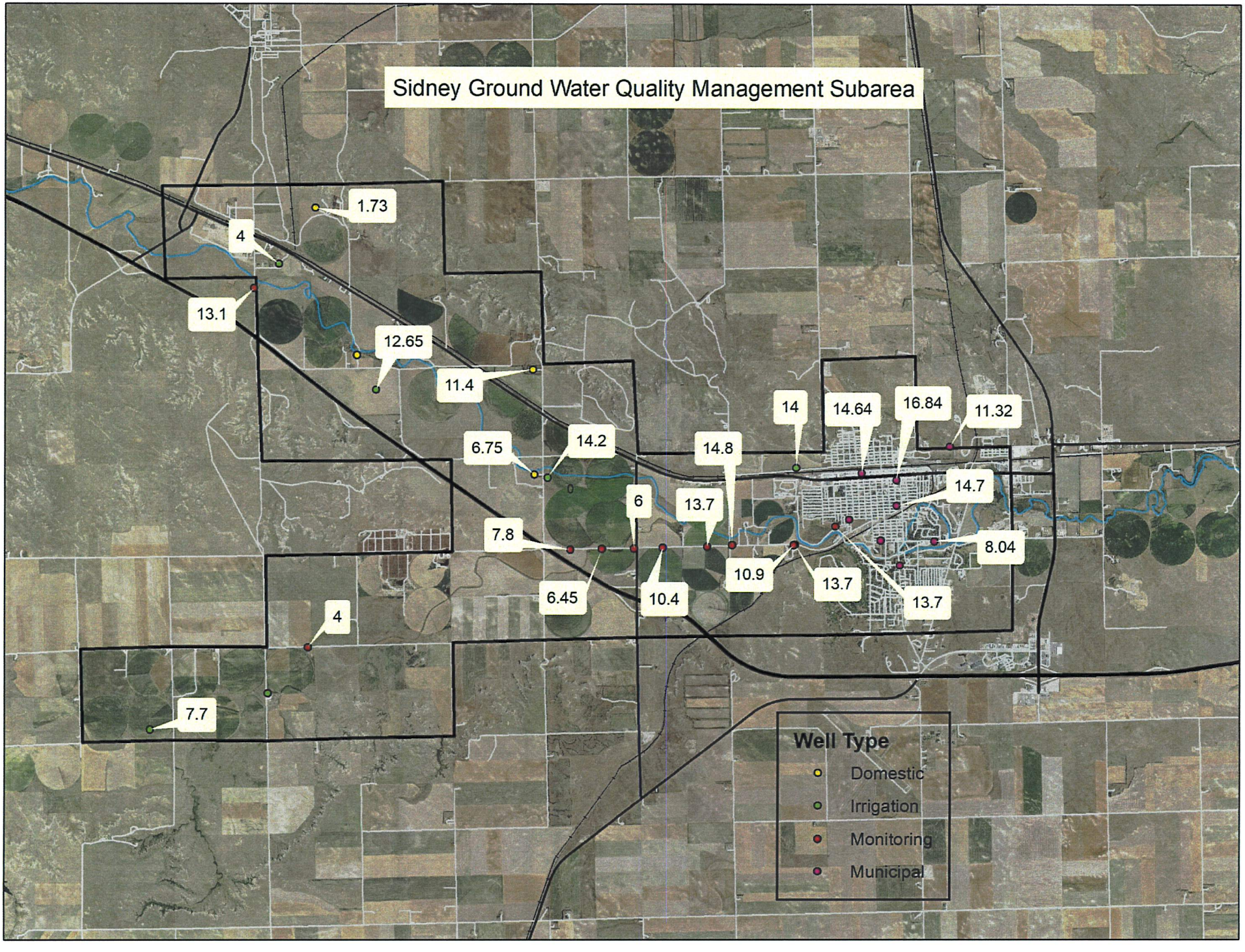
Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Irrigation	I009	3.70	5.20	4.00	4.50					4.20	6.00	5.80
	I034	2.50	2.90	2.80		2.60			2.60		3.00	2.80
	I020	2.55	2.50	2.70	2.50	2.30	2.60	1.20	1.50	2.30	2.60	2.70
	I012	2.30	3.00	3.80		3.20	3.25	3.60	3.30	4.60	3.30	2.80
	I035	3.00	2.50	2.40	2.20			2.30			2.20	2.90
Average		**2.81**	**3.22**	**3.14**	**3.07**	**2.70**	**2.93**	**2.37**	**2.47**	**3.70**	**3.42**	**3.40**

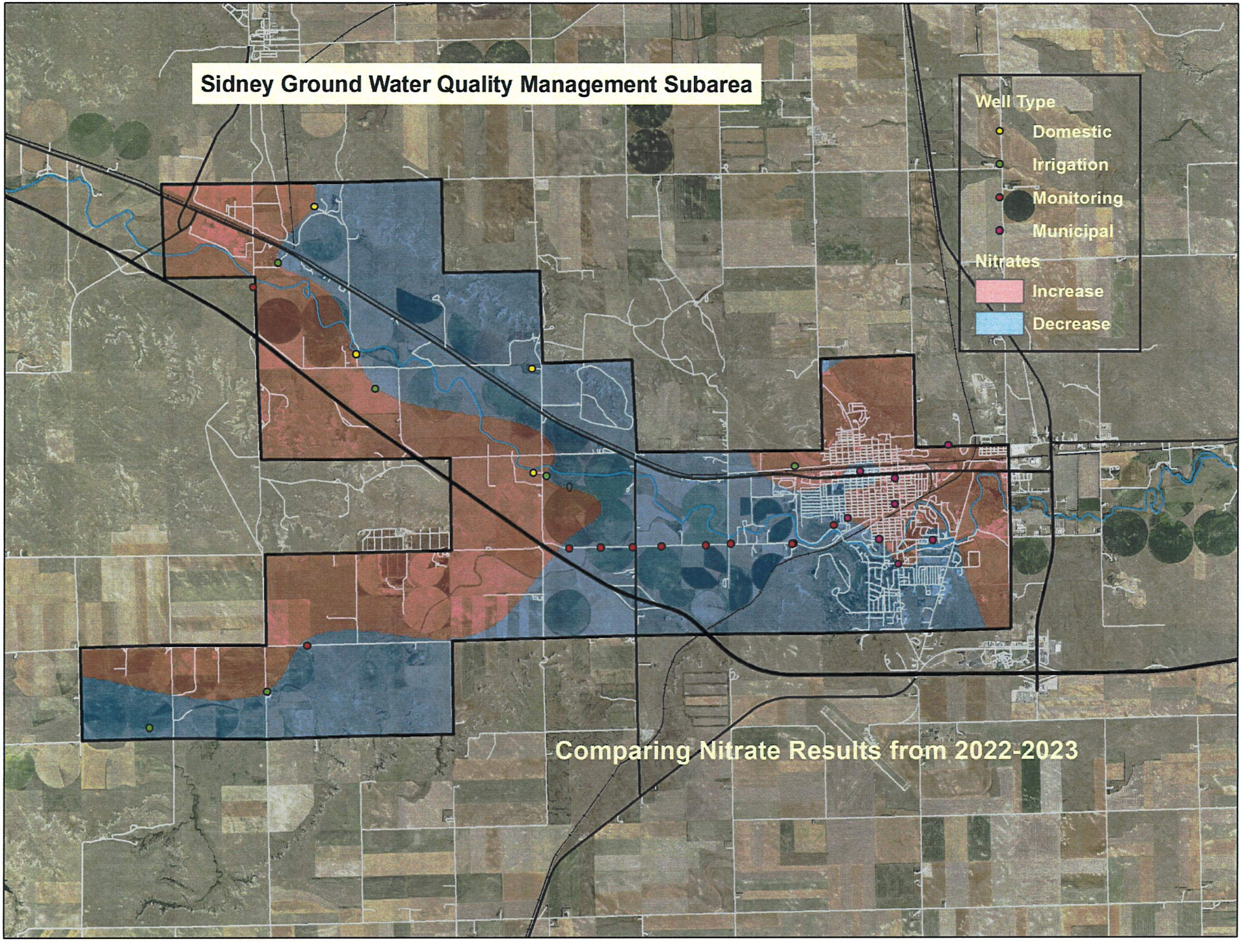

Kimball County Lodgepole Valley Nitrate Results
8.45
9.7
11
4.8
18.6
13.45
20.96
5.15
3.2
3
2
5.45
3.5
0.3
0.6
4.1
0.2
4.5
8.2
6.6
4.2
8.1
9.65
9.63
3.85
3.3
10.5
4
7.4
7
3.4
8.43
3.95
5.8
9.6
7.1
2.5
Well Type
Domestic
Irrigation
Monitoring

Sidney Ground Water Quality Management Subarea Composite Averages

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D068	2.95	0.95	8.40	7.05	8.15	6.85	9.20	13.30	8.47	1.25	6.75
	D069	5.15	5.95	5.30	10.05	6.65	8.65	6.80	12.60	13.55	15.80	11.40
	D060	1.55	1.20	1.05	0.95	1.70	2.30	1.20	2.70	1.90	1.70	1.73
	D058	5.95	7.40	5.45	6.45	6.60	9.50	8.27	6.85	9.15		
Irrigation	I061	3.80	3.40	3.80							4.25	4.00
	I063				5.40					9.30	8.70	7.70
	I067	7.90				9.50	12.50	11.10	11.70		14.70	14.20
	I059		8.90		10.10	9.70	9.40	11.40	14.50	13.50	12.60	12.65
	I064		4.50	4.30	8.40		7.10	7.40	11.60	10.20		
	I070							11.75		11.60	13.50	14.00
Municipal	SMW-1	13.85	10.42	10.85	11.87	13.95	14.26	13.65	13.72	14.69	14.76	14.64
	SMW-2	13.90	11.49	11.53	12.10	14.29	14.36	14.31	15.35	15.23	14.50	14.70
	SMW-3	14.70	11.44	11.60	10.51	14.30	16.16	16.09	15.85	17.12	16.69	16.84
	SMW-4	8.75	8.23	8.11	7.30							
	SMW-6	14.10	12.03	12.15	10.50	7.49						
	SMW-7	10.35	9.06	8.35	9.90							
	SMW-8	7.80	7.11	7.49	8.19	8.66	8.57	8.71	8.62	8.64	8.11	8.04
	SMW-9	9.70	8.78	8.58	8.15	9.56	11.12	11.00	11.47	11.51	10.76	11.32
Monitoring	SD-10	10.30	9.90	10.07	10.05	10.80	10.20	11.10	13.40	14.10	14.80	13.70
	SD-12-D	12.52	12.30	12.60	11.20	12.10	12.80	14.80	15.90	15.80	15.10	13.70
	SD-4	8.60	8.24	8.95	11.35	12.40	13.70	10.90	11.50	12.10	12.50	10.40
	SD-6	10.40	10.23	11.55	10.53	11.40	12.50	11.40	15.00	15.60	15.00	13.70
	SD-7-D	9.30	8.74	9.50	9.30	8.80	9.50	10.90	12.70	15.30	14.10	14.80
Average		**9.03**	**8.01**	**8.40**	**8.97**	**9.77**	**10.56**	**10.55**	**12.16**	**12.10**	**11.60**	**11.35**

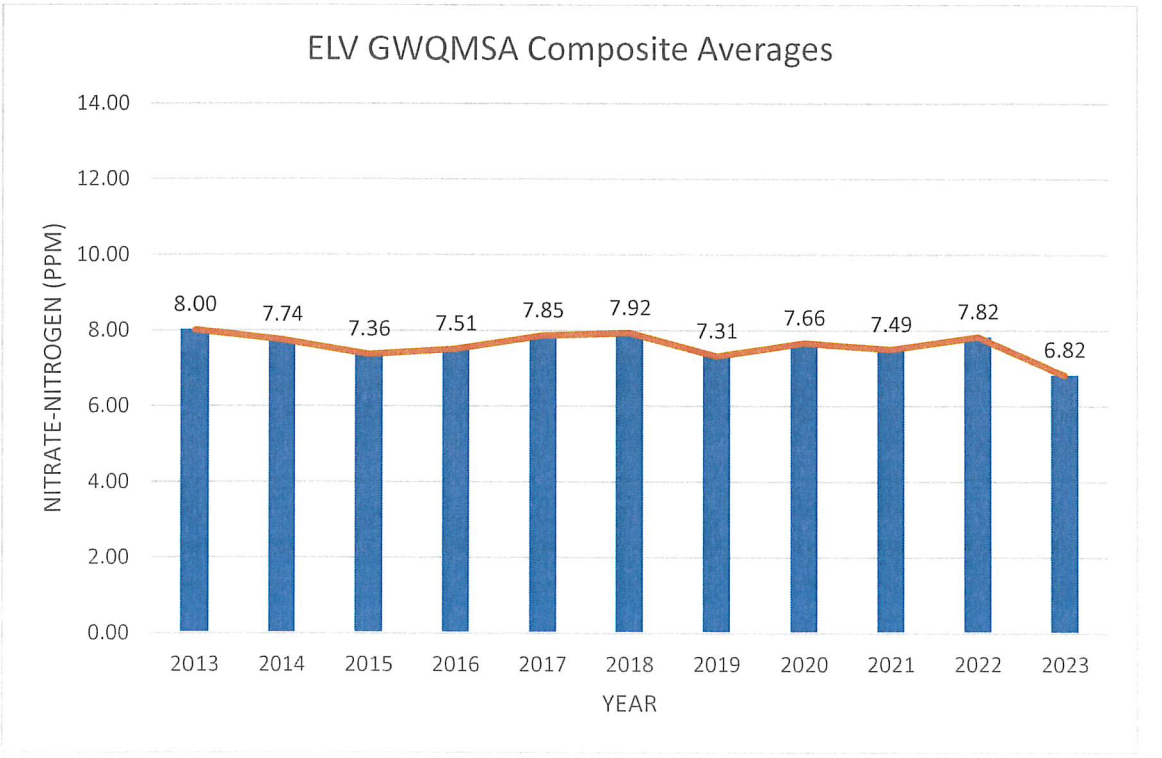


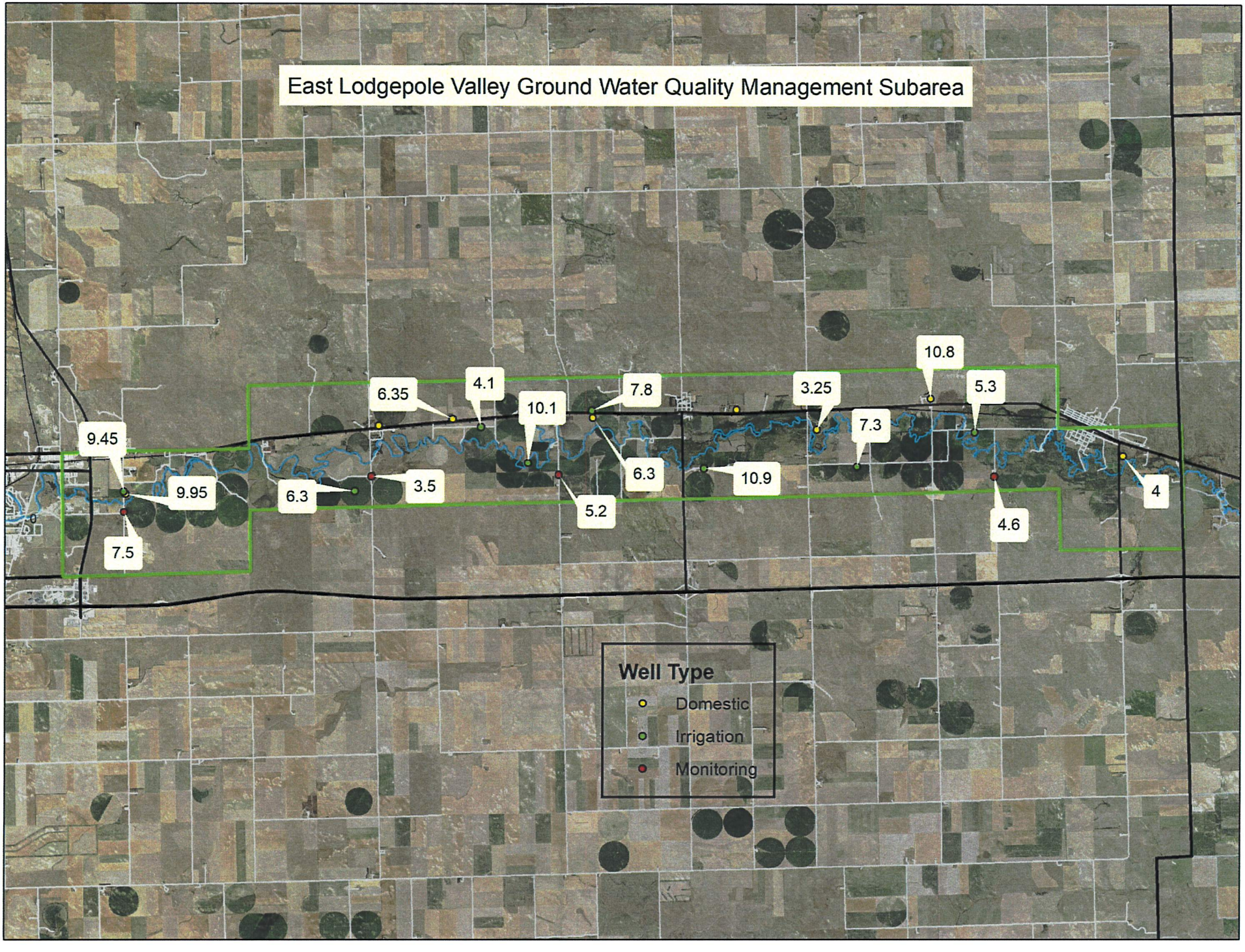

Sidney Ground Water Quality Management Subarea
1.73
4
13.1
12.65
11.4
6.75
14.2
14
14.64
16.84
11.32
14.8
14.7
6
13.7
7.8
8.04
10.9
13.7
6.45
10.4
13.7
4
7.7
Well Type
Domestic
Irrigation
Monitoring
Municipal


Sidney Ground Water Quality Management Subarea
Well Type
Domestic
Irrigation
Monitoring
Municipal
Nitrates
Increase
Decrease
Comparing Nitrate Results from 2022-2023

East Lodgepole Valley Ground Water Quality Management Subarea (Cheyenne County)

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D152	6.10	8.00	7.40	7.80	7.20						
	D151	7.70	8.80	8.23	7.45	7.75	7.35	6.85	6.70	6.40	7.60	6.30
	D153	4.90	4.55	4.50	4.40	6.43	5.40	4.20	3.63	3.43	4.40	3.25
	D150	6.90	8.55	8.20	7.45	7.95	7.80	7.30	7.23	6.20	7.45	6.35
	D082	13.25	14.55	10.75	13.60	11.30	10.10	11.70	10.65	9.20	11.10	9.95
	D154	6.40	8.50	8.50	8.10	8.40	8.00	7.70	7.80	7.80	9.35	10.80
	D146	3.40	4.20	4.00	4.05	4.50	4.05	3.60	4.05	3.80	4.73	4.00
	D147	6.65	6.00			7.50						
Irrigation	I085	7.30	7.20	7.70	6.00	6.20	6.40	6.90		6.30	6.40	7.30
	I157	11.10	12.60	13.45	9.30	13.60	13.50		13.70	11.50	11.00	10.90
	I087	11.40	9.45	7.30	6.80	4.30	7.30		5.20	6.60	6.30	5.30
	I130	6.30	6.30	6.90	6.60	6.20		7.05	9.00	9.00	8.50	10.10
	I151	6.30	5.70	5.15	9.00		7.90	7.10	8.00	8.40	7.90	7.80
	I148	6.80	5.20	5.00	6.50	6.70	5.90		7.60		7.20	6.30
	I156	2.80	3.20	2.70	3.50	3.40	2.90	4.00	3.40	4.35	4.37	4.10
	I083	12.80		10.20							9.60	9.45
Monitoring	E-1	5.10	4.94	3.30	4.10	4.30	5.50	5.10	4.00	4.40	4.40	4.60
	E-2	6.85	6.50	6.00	5.80	5.40	6.00	6.40	5.60	7.00	7.30	5.20
	E-3	20.95	15.23	14.30	19.10	23.40	21.30	17.90	19.60	18.10	15.40	3.50
	E-4	7.07	7.60	6.20	5.60	6.85	7.30	6.60	6.40	7.30	7.70	7.50
Average		**8.00**	**7.74**	**7.36**	**7.51**	**7.85**	**7.92**	**7.31**	**7.66**	**7.49**	**7.82**	**6.82**




East Lodgepole Valley Ground Water Quality Management Subarea
9.45
9.95
7.5
6.3
3.5
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3.25
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5.3
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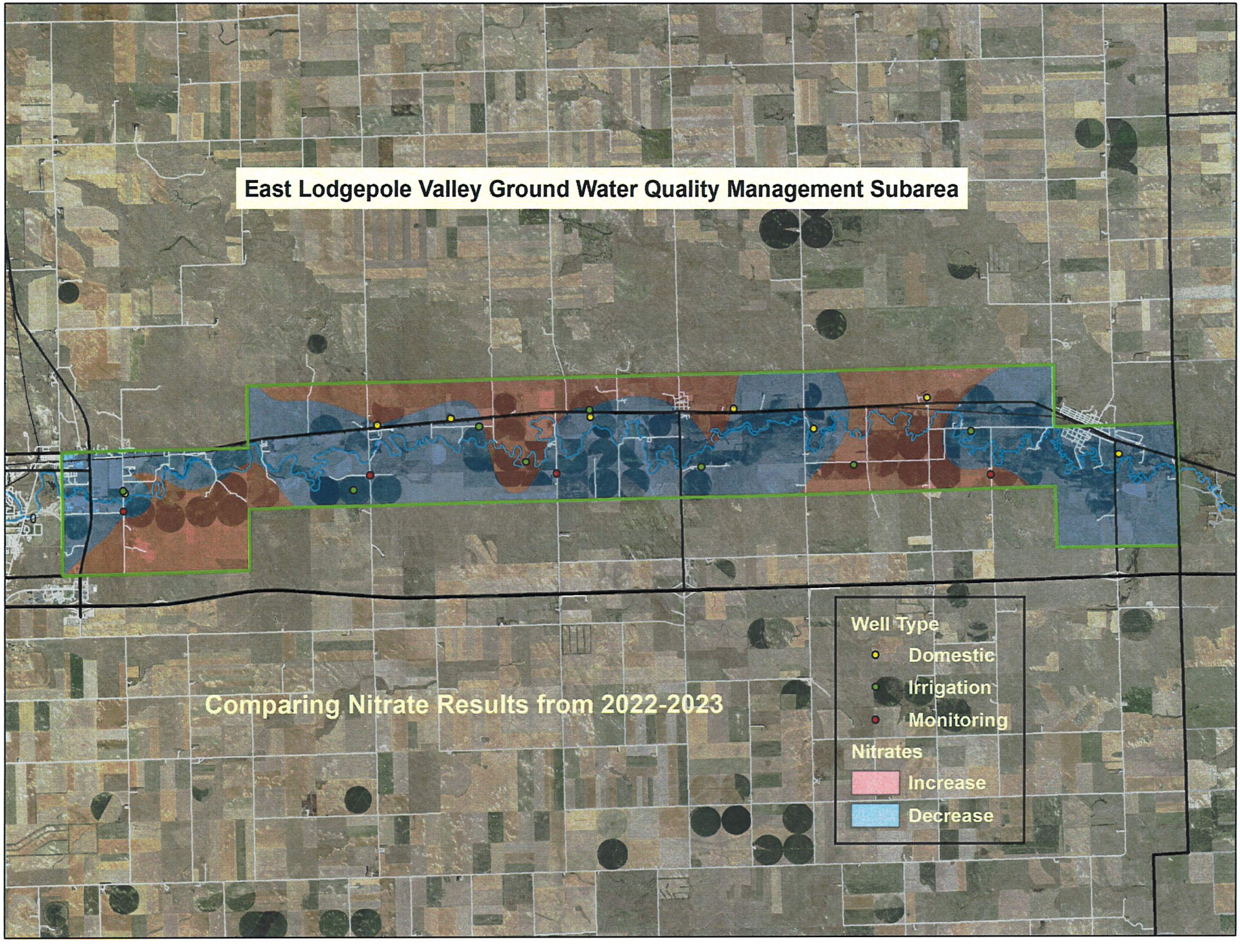
4
Well Type
Domestic
Irrigation
Monitoring


East Lodgepole Valley Ground Water Quality Management Subarea
Comparing Nitrate Results from 2022-2023
Well Type
Domestic
Irrigation
Monitoring
Nitrates
Increase
Decrease

Cheyenne County West Lodgepole Valley

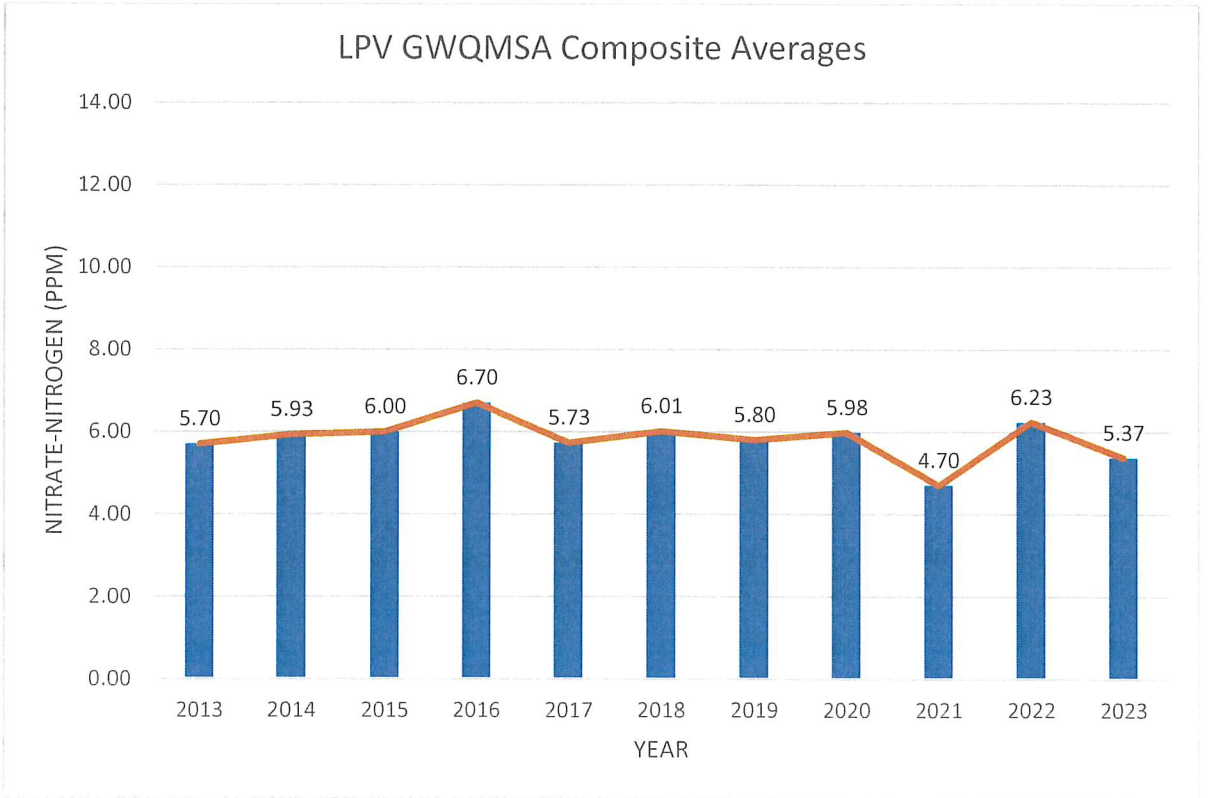
Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D051	10.25	7.70	5.13	6.20	6.80	6.90	5.80	3.70	5.40		
	D048	3.60	3.50	3.25	3.35	3.90	4.50	3.80	4.10	3.20	4.95	4.50
	D056	1.37	1.35	1.30	1.27	1.97	1.70	1.60	1.60	2.05	2.30	1.70
	D053	1.55	1.45	1.35	1.20	1.70	1.60	1.30	3.50	1.45	1.75	1.60
	D049	4.20	6.47	7.55	8.10	14.90	6.70	7.65	3.40	5.95	6.70	5.05
Irrigation	I047	3.90	3.70		7.00	5.90	6.30	5.40	6.50	8.20	7.05	6.70
	I057	1.60	1.20	1.30	1.40	0.80	0.90	0.70	1.30	0.60		0.90
	I050	5.00	5.00	4.10	4.50	4.60	4.70	4.60	3.85	2.80	7.30	3.10
	I055	3.60	3.00								3.80	3.60
Average		**3.90**	**3.71**	**3.43**	**4.13**	**5.07**	**4.16**	**3.86**	**3.49**	**3.71**	**4.84**	**3.39**

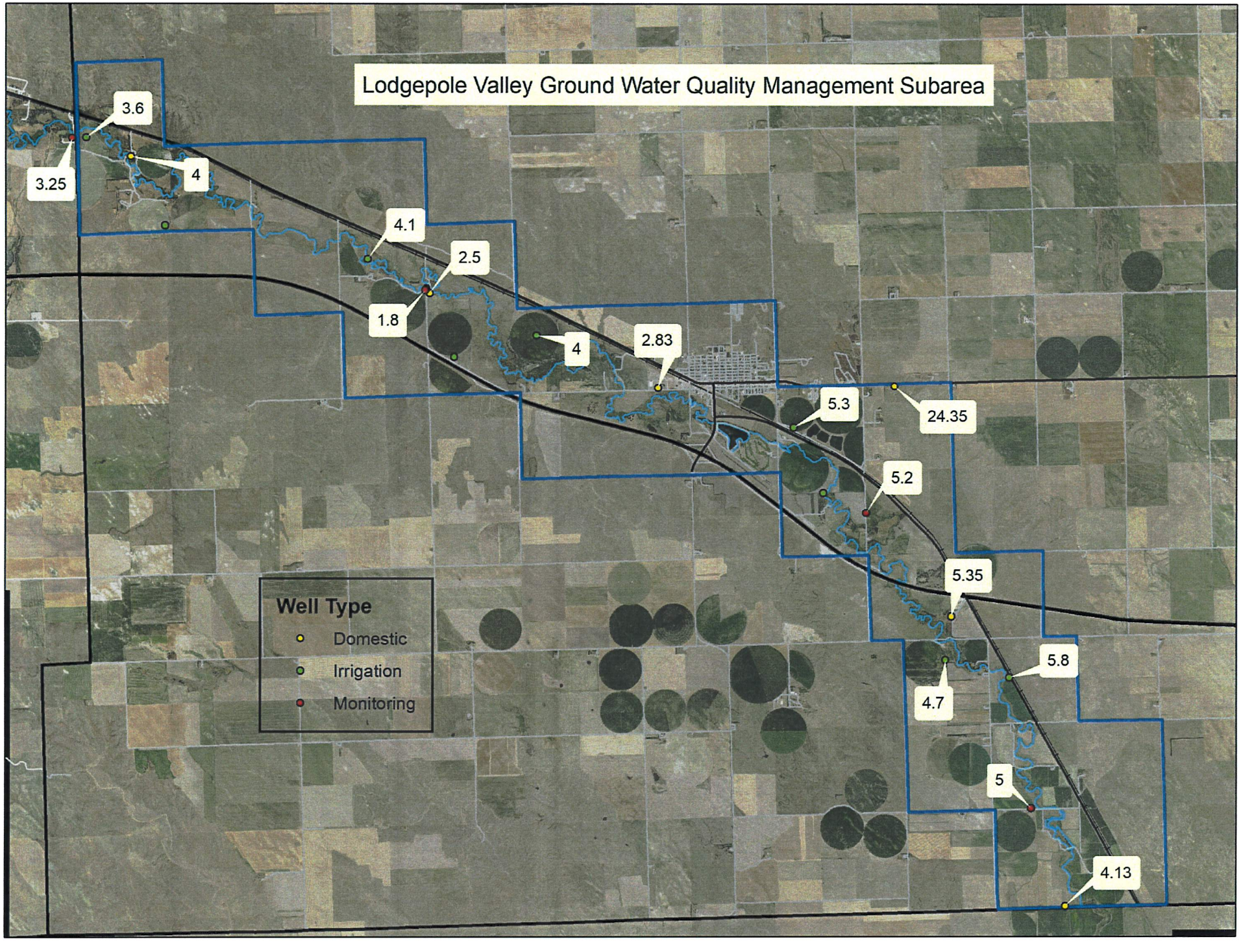
Cheyenne County Tablelands

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D122	5.80	6.60	6.85	6.90	7.30	7.70	6.65	6.10	6.65	7.80	7.25
Irrigation	I129								3.60		4.90	
	I127			1.20	1.80	1.60				1.60	2.00	2.30
	I123			1.30				1.20			1.70	1.80
	I125				2.30	2.00	1.90		2.00		2.50	
	I126								1.30		2.60	3.30
	I128			3.50		3.30					3.70	
Average		**5.80**	**6.60**	**3.21**	**3.67**	**3.55**	**4.80**	**3.93**	**3.25**	**4.13**	**3.60**	**3.66**

Lodgepole Valley Ground Water Quality Subarea (Deuel County)

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D101	5.25	8.70	5.70	6.60	3.75	3.00	1.75	1.90	3.40	4.35	4.13
	D090	4.75	4.10	4.70	6.10	6.10	5.00	4.20	5.40	3.95	4.23	4.00
	D098	5.95	5.60	5.00	5.05	5.55	5.25	5.10	5.10	4.63	6.15	5.35
	D094	3.70	4.20	4.20	4.20		4.20	3.85	3.80	2.50	2.80	2.83
	D097	24.20	15.90	20.00	27.80	20.40	23.15	31.25	33.00	20.70	34.05	24.35
	D092	1.85	2.30	1.73	2.05	1.90	1.35	2.75	2.35	0.95	3.00	2.50
Irrigation	I088	3.50	2.60	10.90	10.30				2.50	2.30	2.67	3.60
	I089	4.10	4.60	4.30	4.30			4.50	5.30	5.80	6.20	
	I132	4.50		4.00	8.20	6.70	6.30	4.00	4.60		5.20	4.70
	I095	8.10	7.90				8.40					
	I158				1.90	4.30			6.60	3.40	7.25	5.80
	I093	2.30	7.00	8.00	7.80	8.50	9.10	5.40	5.90	8.10		
	I134	5.30	5.40	6.10	7.60	4.90	6.30	4.80	6.60	3.20	5.05	5.30
	I133	5.60	5.60		6.50				6.60	3.90	4.15	4.00
	I091	3.40		1.70								
	I135	2.80							2.90		3.80	4.10
Monitoring	D-6	10.45	9.10	7.40	3.30	0.90	1.10	2.80	4.10	0.50	5.00	5.00
	D-7	5.85	5.80	5.90	6.00	5.50	5.50	5.40	5.20	5.30	4.80	5.20
	D-8	2.60	2.10	2.30	1.90	2.10	2.00	1.80	2.10	2.30	2.50	1.80
	D-9	4.03	3.93	4.00	4.30	3.90	3.50	3.60	3.70	4.20	4.70	3.25
Average		**5.70**	**5.93**	**6.00**	**6.70**	**5.73**	**6.01**	**5.80**	**5.98**	**4.70**	**6.23**	**5.37**




Lodgepole Valley Ground Water Quality Management Subarea
3.6
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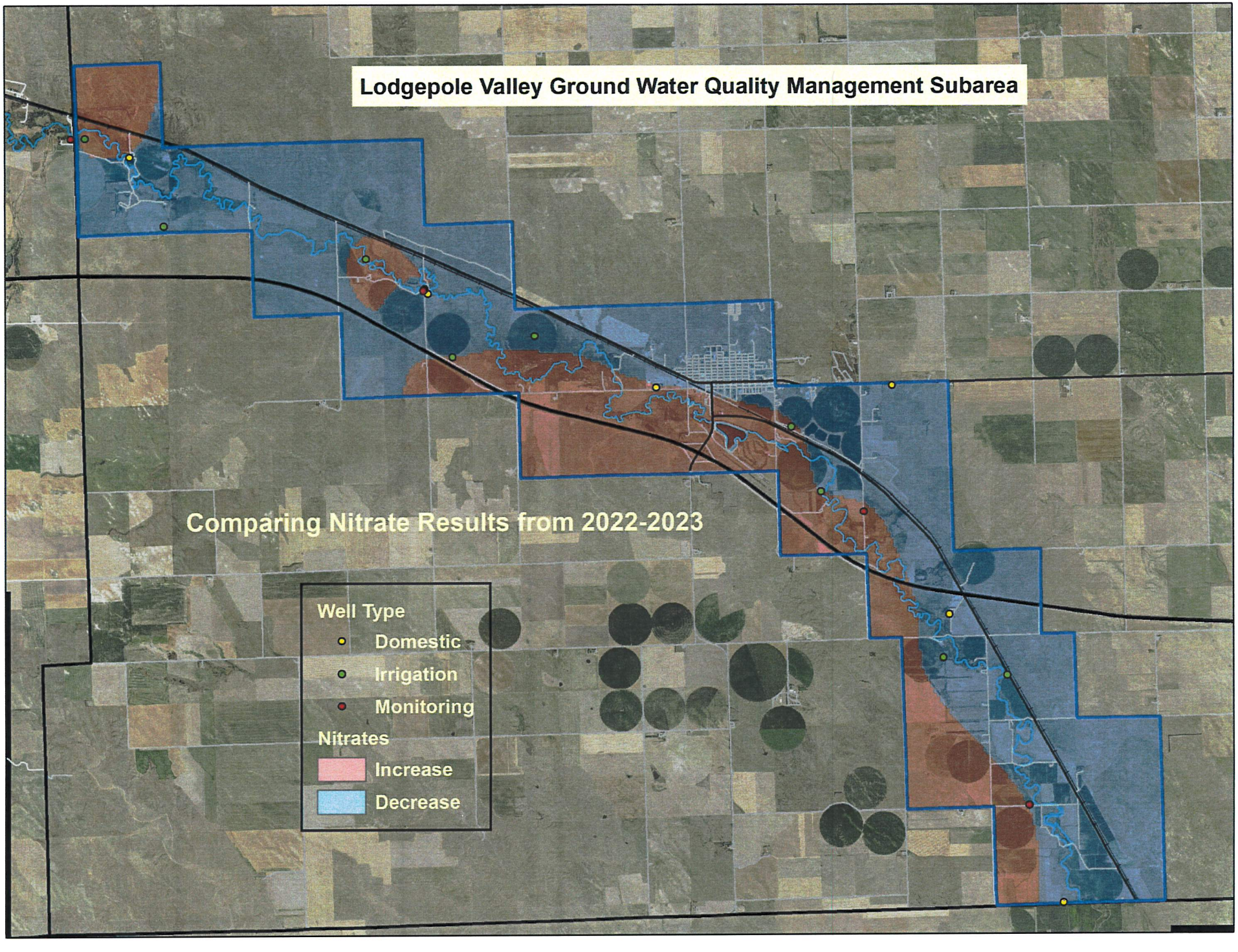
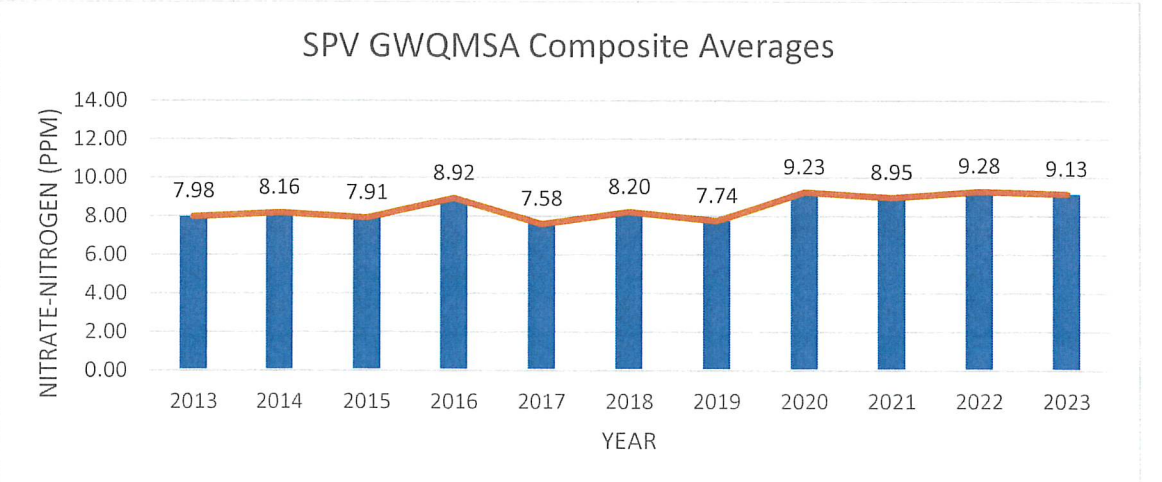
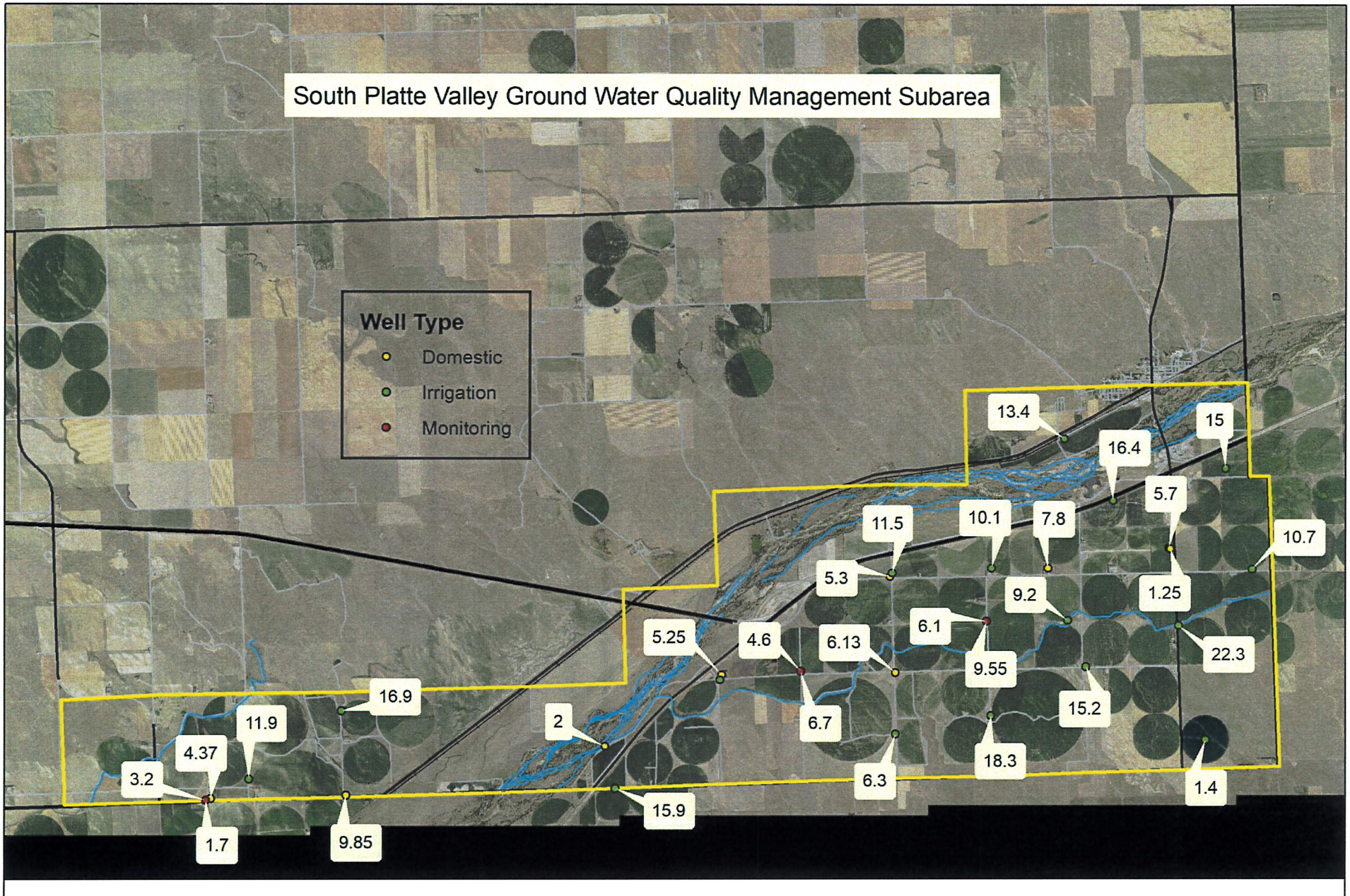
Well Type
Domestic
Irrigation
Monitoring


Lodgepole Valley Ground Water Quality Management Subarea
Comparing Nitrate Results from 2022-2023
Well Type
Domestic
Irrigation
Monitoring
Nitrates
Increase
Decrease

South Platte Valley Ground Water Quality Management Subarea

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D078	4.20	4.20		3.80		5.80	4.50	5.13	5.80	6.90	5.25
	D110	10.50	15.70	16.10	15.60	12.80	14.90	13.60	8.50	5.90	8.15	9.85
	D077	5.10	4.60	5.95		4.70	4.85	4.35	5.40		5.25	5.30
	D076	7.33	10.20	9.00	8.25	7.97	8.15	7.10	6.30	5.70	7.47	7.80
	D109	9.65	1.63	2.15	5.50	5.25	3.50	2.10	7.75	4.20	7.25	4.37
	D100						10.60	1.30	7.80		8.10	5.70
	D074	4.70	1.30	1.15	5.30	2.10	1.15	1.10	1.35	1.25	1.50	1.25
	D113	2.70	2.30	1.40	1.95	2.43	2.80	2.13	2.00	2.00	2.00	2.00
	D079	3.95	4.80	4.10	3.60	4.60	3.55	4.25	5.15	4.10	5.75	6.13
Irrigation	I119	5.20	5.20	10.50	14.20	8.50	10.40	6.80	6.60	6.10	5.60	13.40
	I139	8.10	11.90	12.70	13.90	8.40	11.30	10.50	10.20	7.90	7.50	11.50
	I141	10.20	11.80	9.90	10.60	10.60	10.70	10.10	10.80	7.40	8.10	9.20
	I144	1.35	1.20	1.40	1.20	1.20	0.90	1.10	1.70	1.20	1.65	1.40
	I112		19.60	16.20	16.90	12.20	11.50	16.20	11.10	16.60	14.40	16.90
	I143	19.80	18.90	17.70	20.55	16.90	20.40	17.70	23.70	20.60	21.28	22.30
	I114	6.50	6.20	5.50	11.00	10.00	12.40	12.07	17.30	15.90	13.05	15.90
	I115											
	I108	12.80	10.20	12.30		12.90	9.30	10.70	10.40	11.10	13.50	11.90
	I116				4.00	3.00	4.50	3.60	10.40	14.20		6.30
	I145		10.90	11.60	17.00	15.70	19.40	18.70	22.90	21.60	21.80	18.30
	I159	16.10	15.70	11.30	14.00	8.90	11.20	10.90	13.60	12.10	14.20	10.70
	I142	18.60	19.70	15.40	20.00	15.70	17.70	16.50	18.50	18.80	20.90	15.20
	I118	7.50	5.40	5.20	7.20	6.40	6.20	10.80	15.30		16.40	15.00
	I138	6.80	6.40	6.20	8.60	7.90	9.50	10.20	9.10	10.20	10.70	10.10
	I137	10.90	8.80	9.30	11.10	10.60	12.30	12.40	16.80	16.80	17.35	16.40
Monitoring	D-3-M	10.40	10.42	9.40	7.60	5.70	5.10	5.10	7.80	10.90	10.50	9.55
	D-3-S	8.05	7.90	4.60	3.50	3.20	4.20	5.90	6.50	7.20	6.60	6.10
	D-4-M	4.25	3.80	6.60	6.50	5.20	6.40	6.10	5.90	6.90	4.90	6.70
	D-4-S	3.05	2.80	5.20	3.80	6.20	3.50	3.10	4.30	2.80	4.00	4.60
	D-5-M	7.10	4.90	1.55	3.90	1.90	2.80	2.50	3.40	3.70	3.60	3.20
	D-5-S	2.55	2.11	1.05	1.20	1.20	0.90	0.80	1.30	0.80	0.80	1.70
Average		**7.98**	**8.16**	**7.91**	**8.92**	**7.58**	**8.20**	**7.74**	**9.23**	**8.95**	**9.28**	**9.13**




South Platte Valley Ground Water Quality Management Subarea
Well Type
Domestic
Irrigation
Monitoring
13.4
15
16.4
5.7
11.5
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7.8
10.7
5.3
9.2
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6.1
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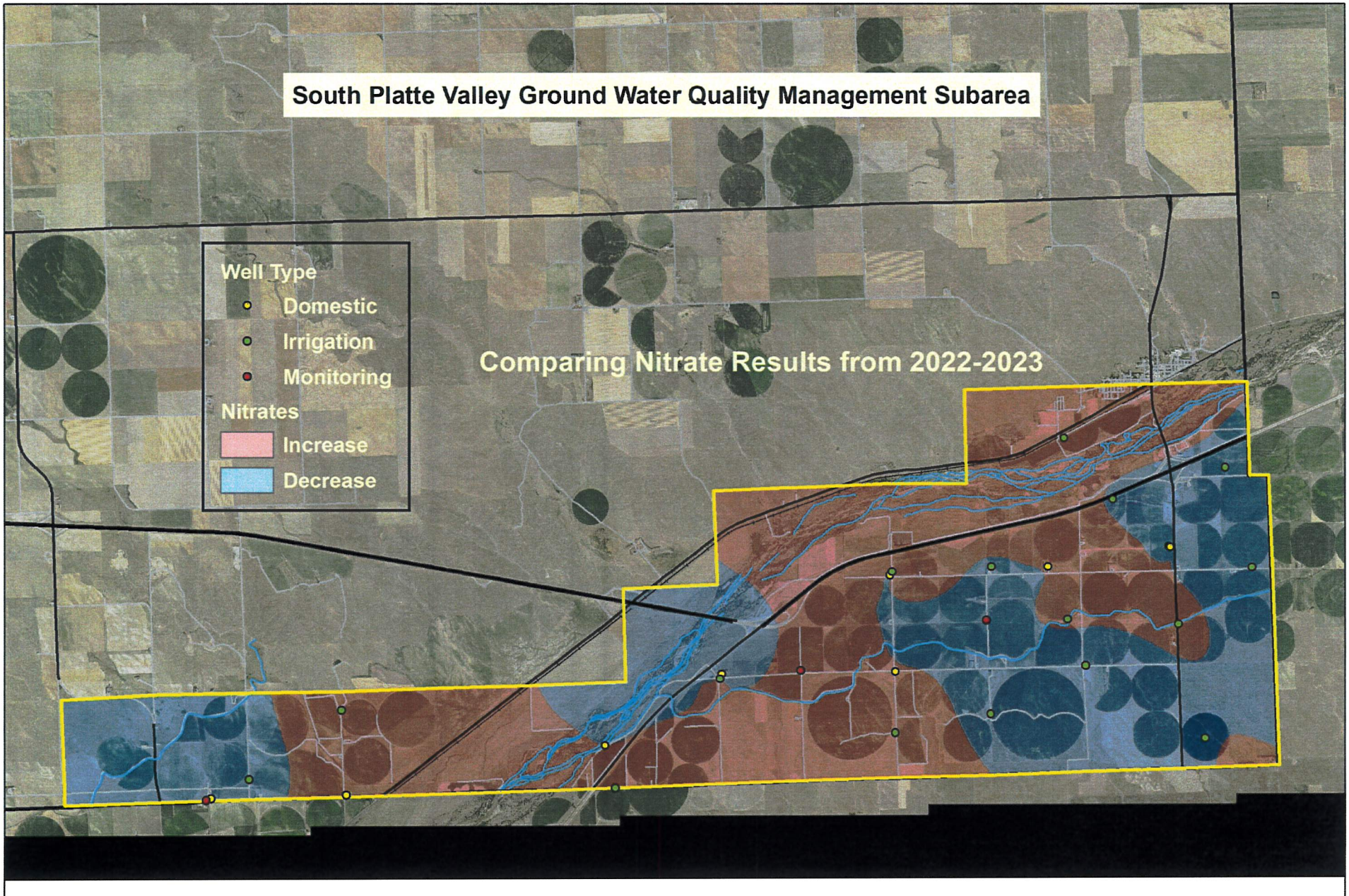
South Platte Valley Ground Water Quality Management Subarea
Well Type
Domestic
Irrigation
Monitoring
Nitrates
Increase
Decrease
Comparing Nitrate Results from 2022-2023

Deuel County Tablelands

Well Type	Well ID	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Domestic	D106	2.65	2.70	2.30	2.50	3.30	2.80	2.30	2.80	2.00	2.85	2.55
	D155			6.90	10.40	10.70	9.30	10.50	15.30	6.30		13.45
	D095			6.35	6.30	7.50	7.85	6.90	8.00	7.10		8.50
	D107	2.67	3.00	2.65	2.50	3.00	2.75	2.45	2.45	2.50	3.10	2.40
Irrigation	I120		8.00		3.60					3.80	4.45	4.00
	I102	2.00	1.80	1.75	2.00	1.90	1.70	2.50	2.00	2.05	2.27	2.00
	I072	2.60	2.90	2.80	2.90			1.80	2.70	3.20	3.25	3.60
Average		**2.48**	**3.68**	**3.79**	**4.31**	**5.28**	**4.88**	**4.41**	**5.54**	**3.85**	**3.18**	**5.21**