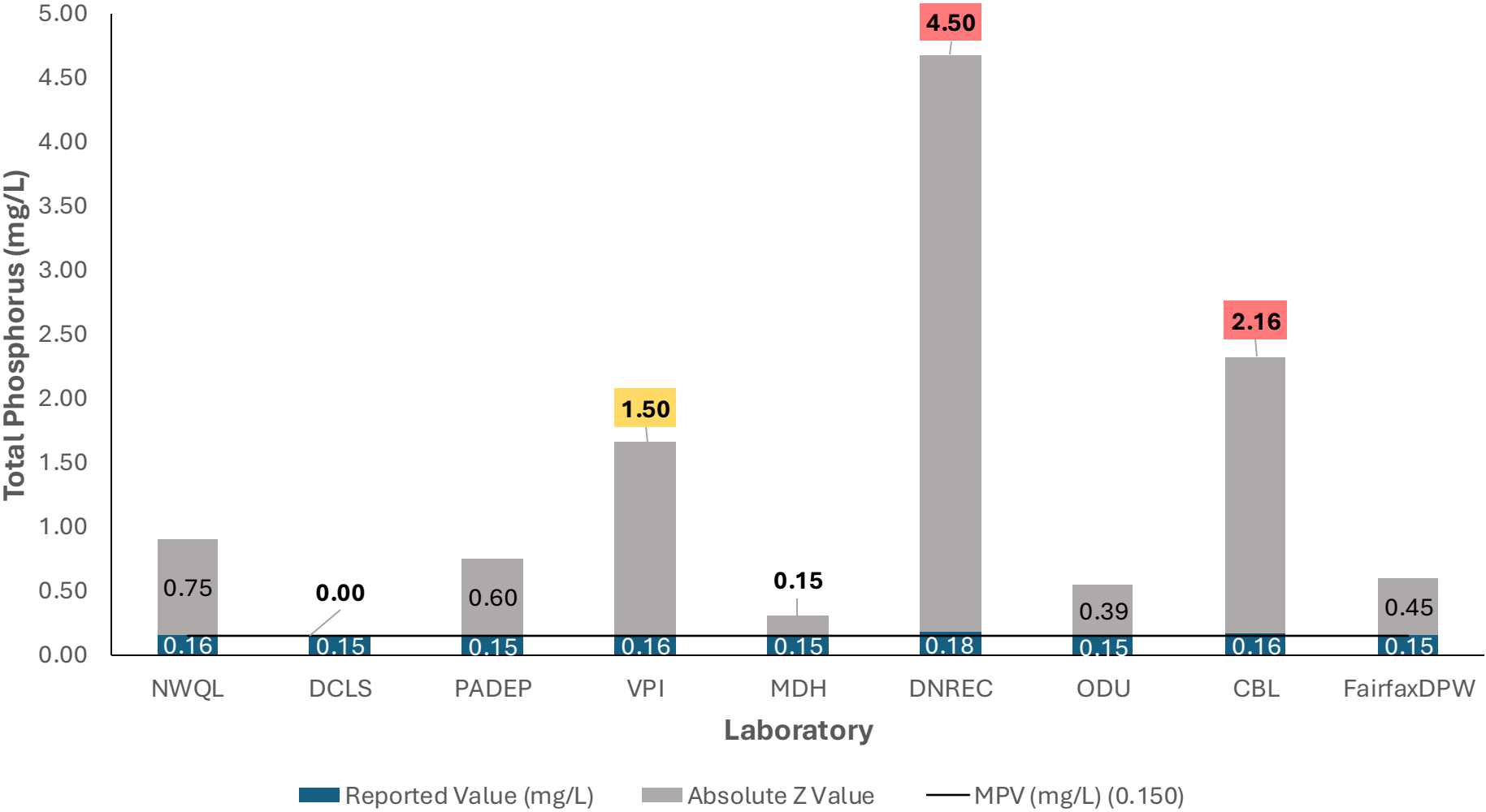


# USGS Standard Reference Samples

## Spring 2025

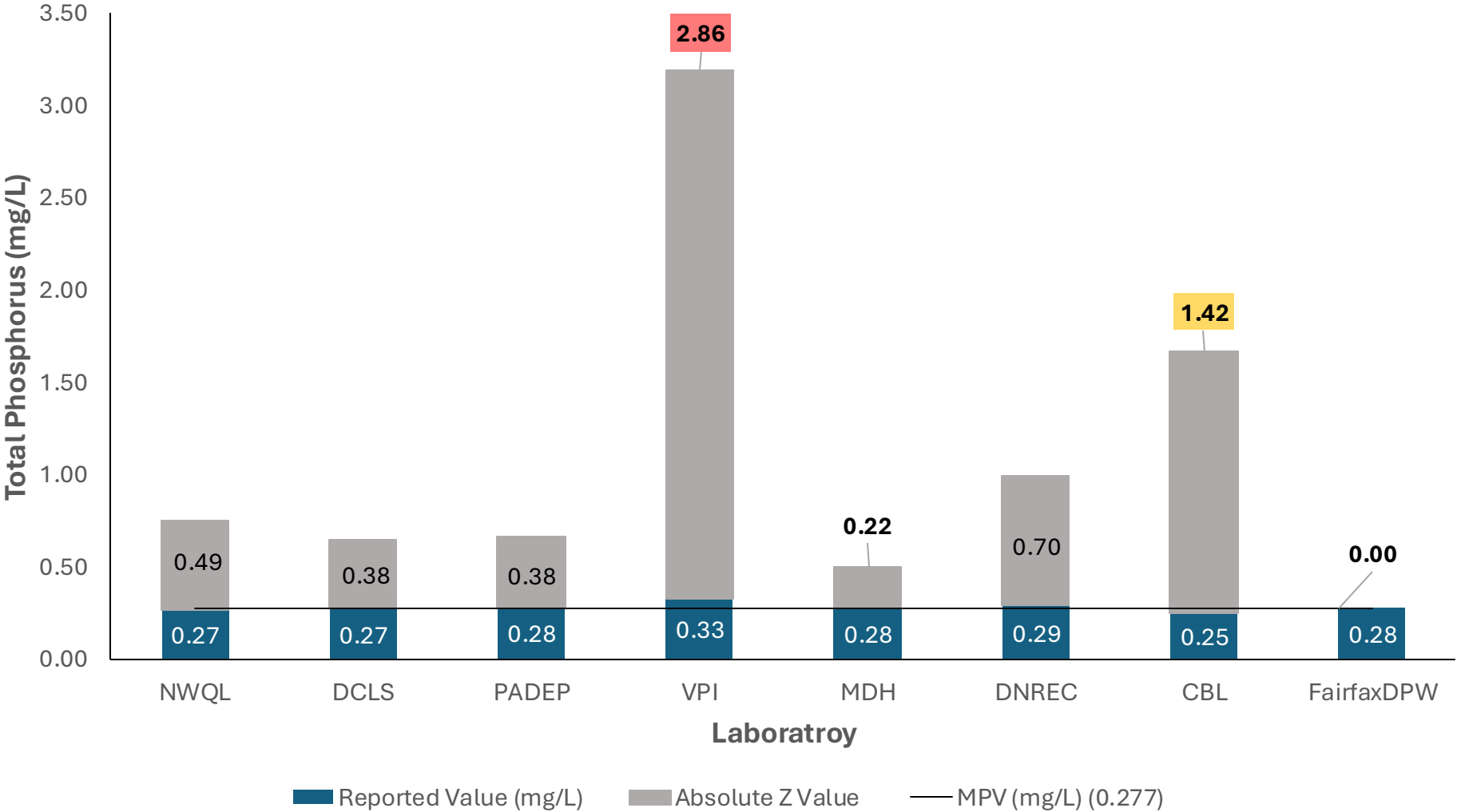
Allison Welch (CRC)

Total Phosphorus Low Concentration



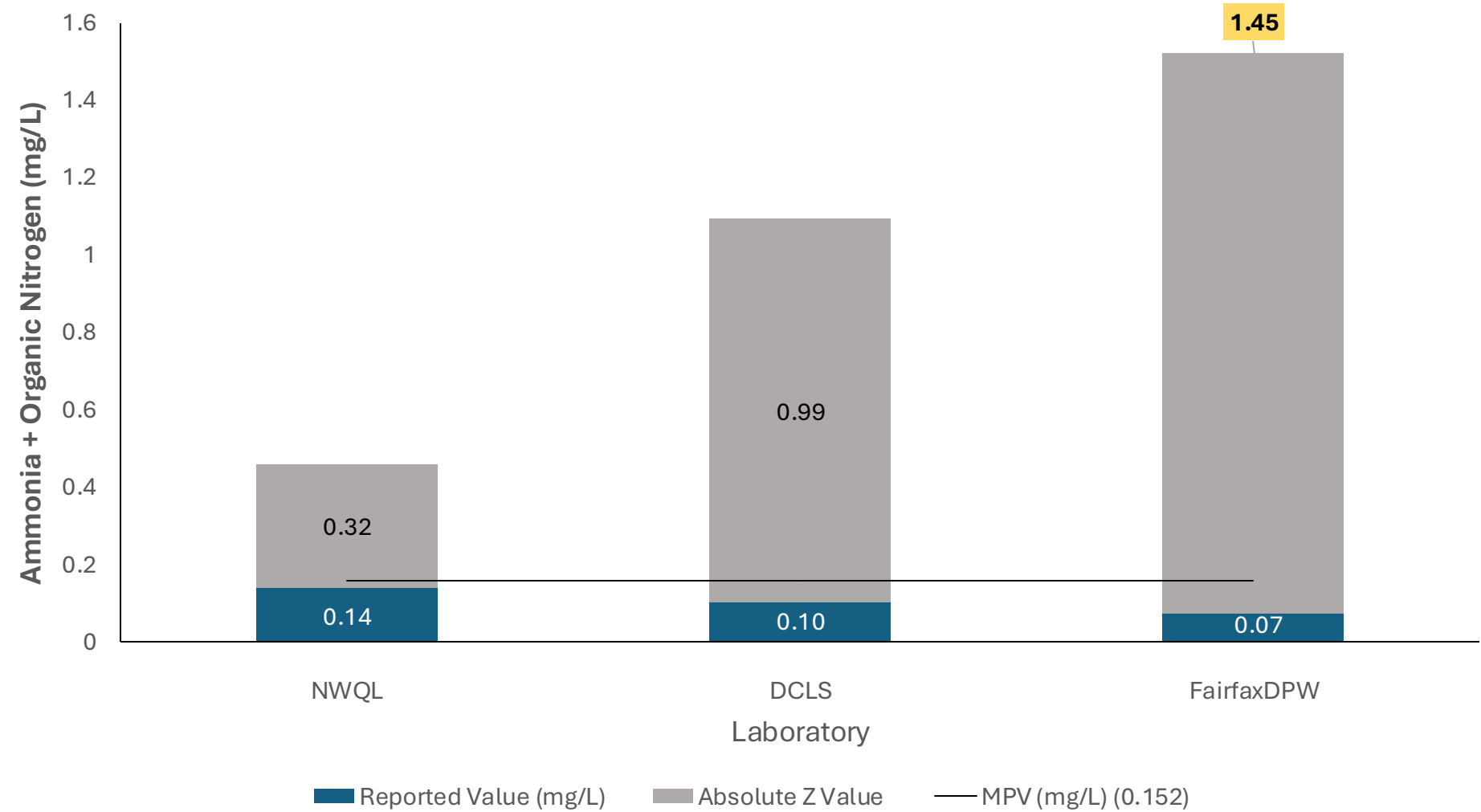
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Total Phosphorus High Concentration

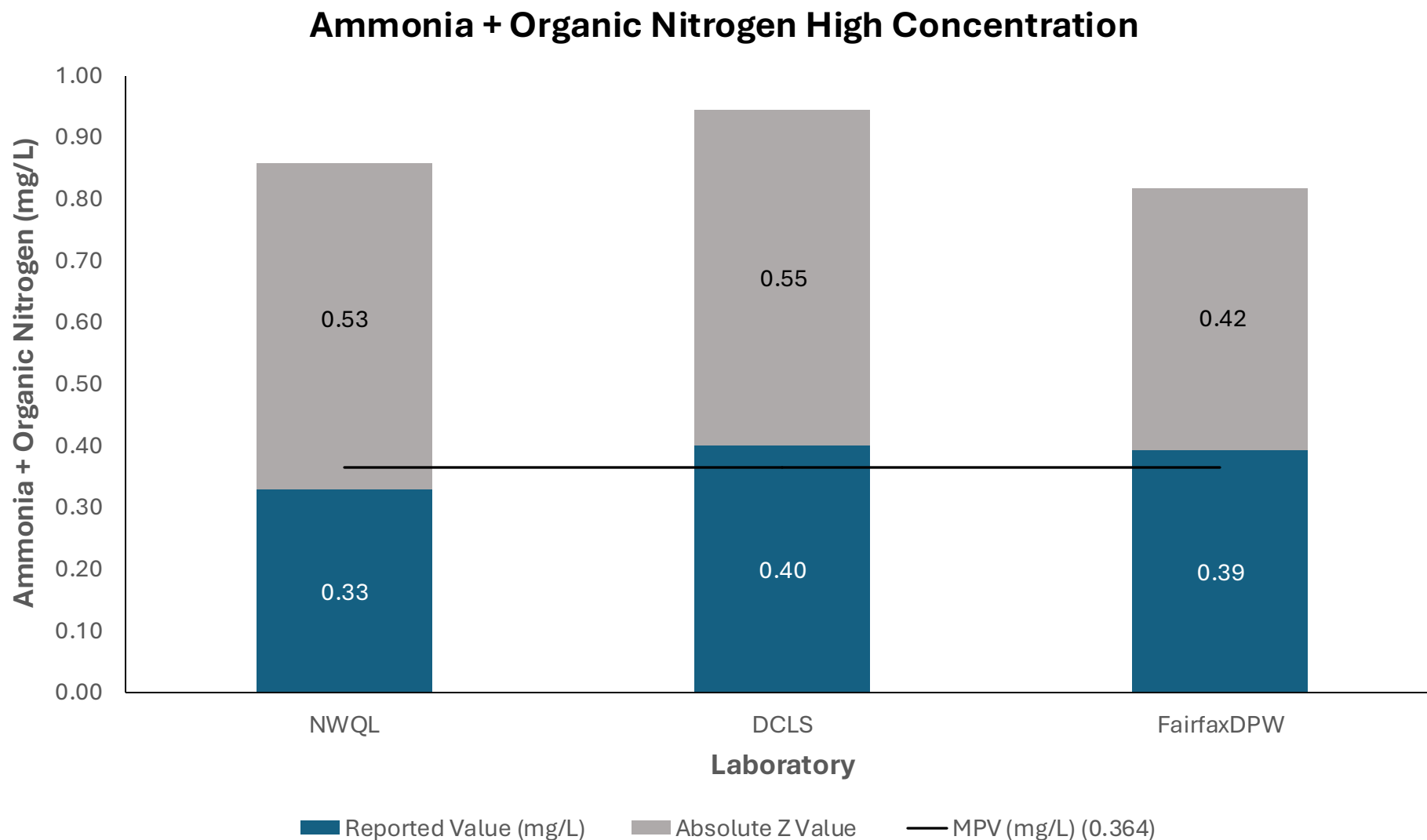


Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Ammonia + Organic Nitrogen Low Concentration

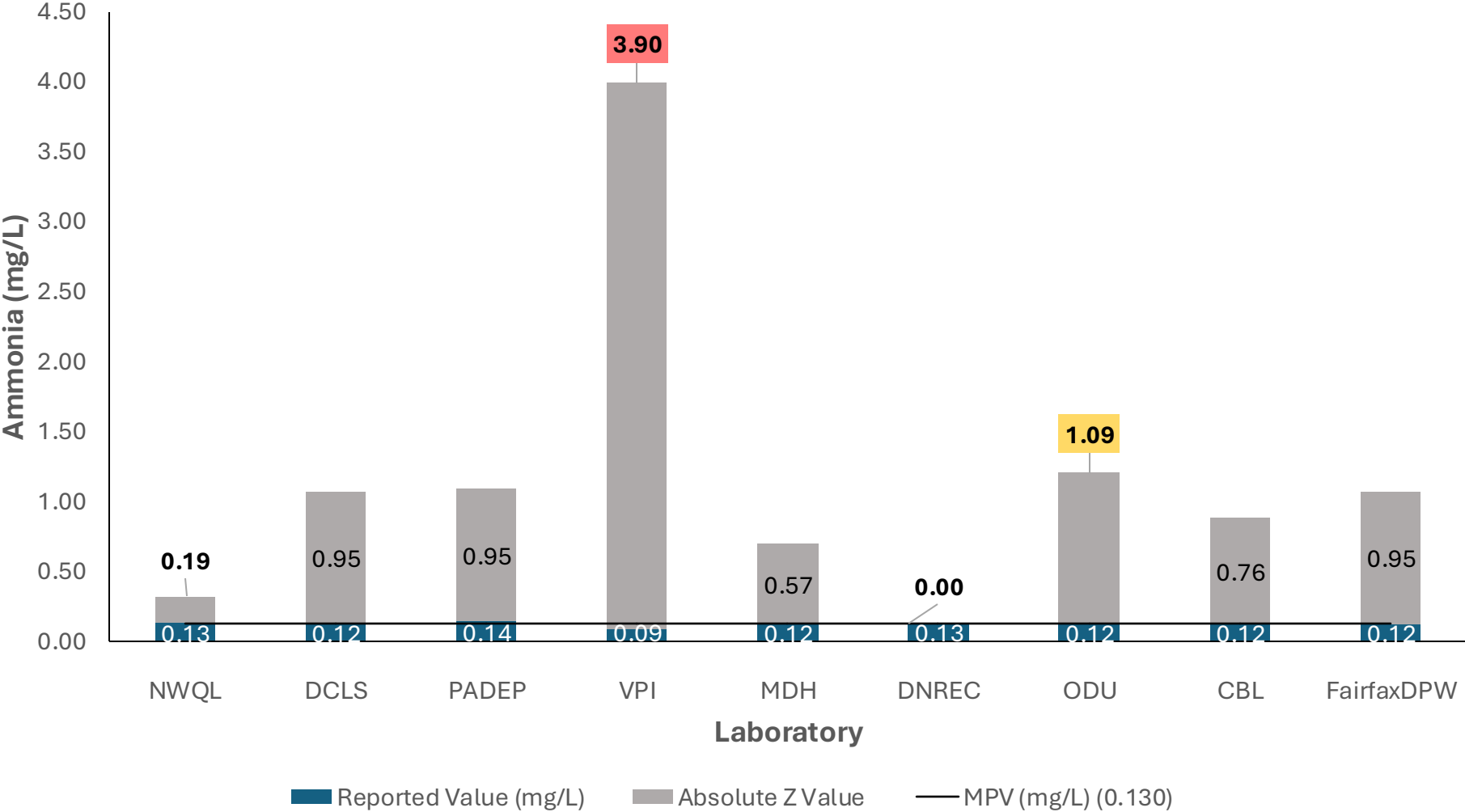


Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory



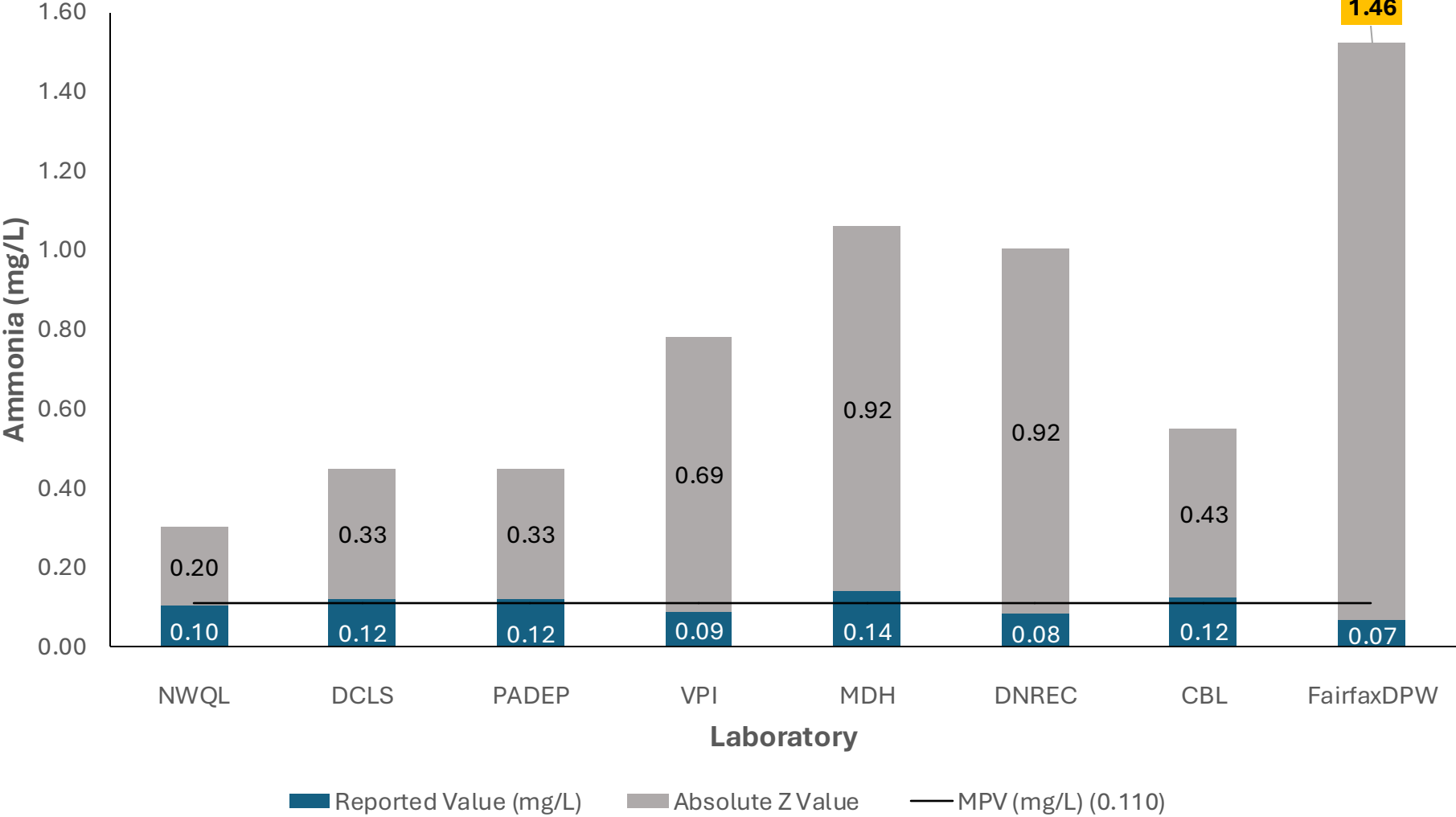
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Ammonia Low Concentration



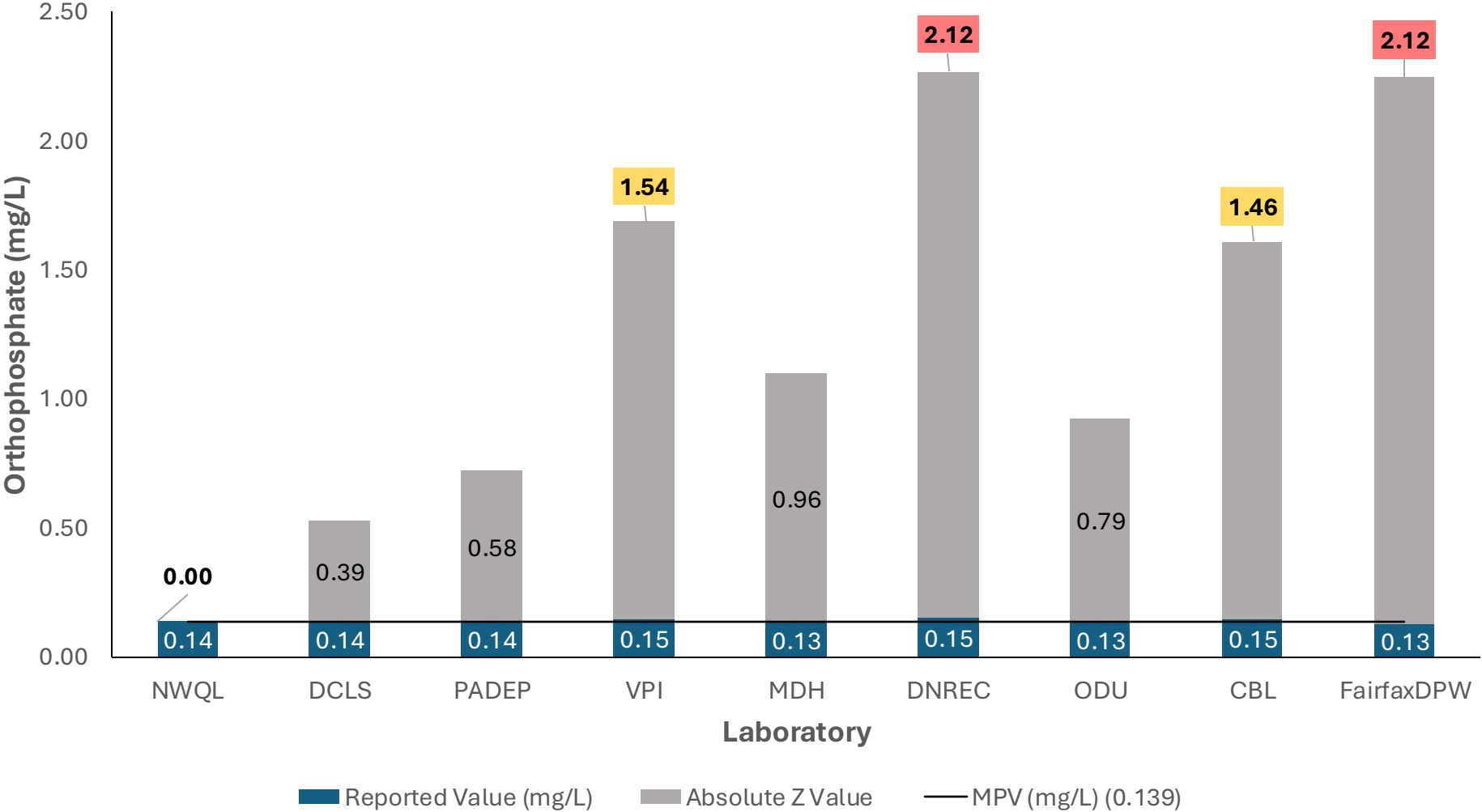
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Ammonia High Concentration



Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

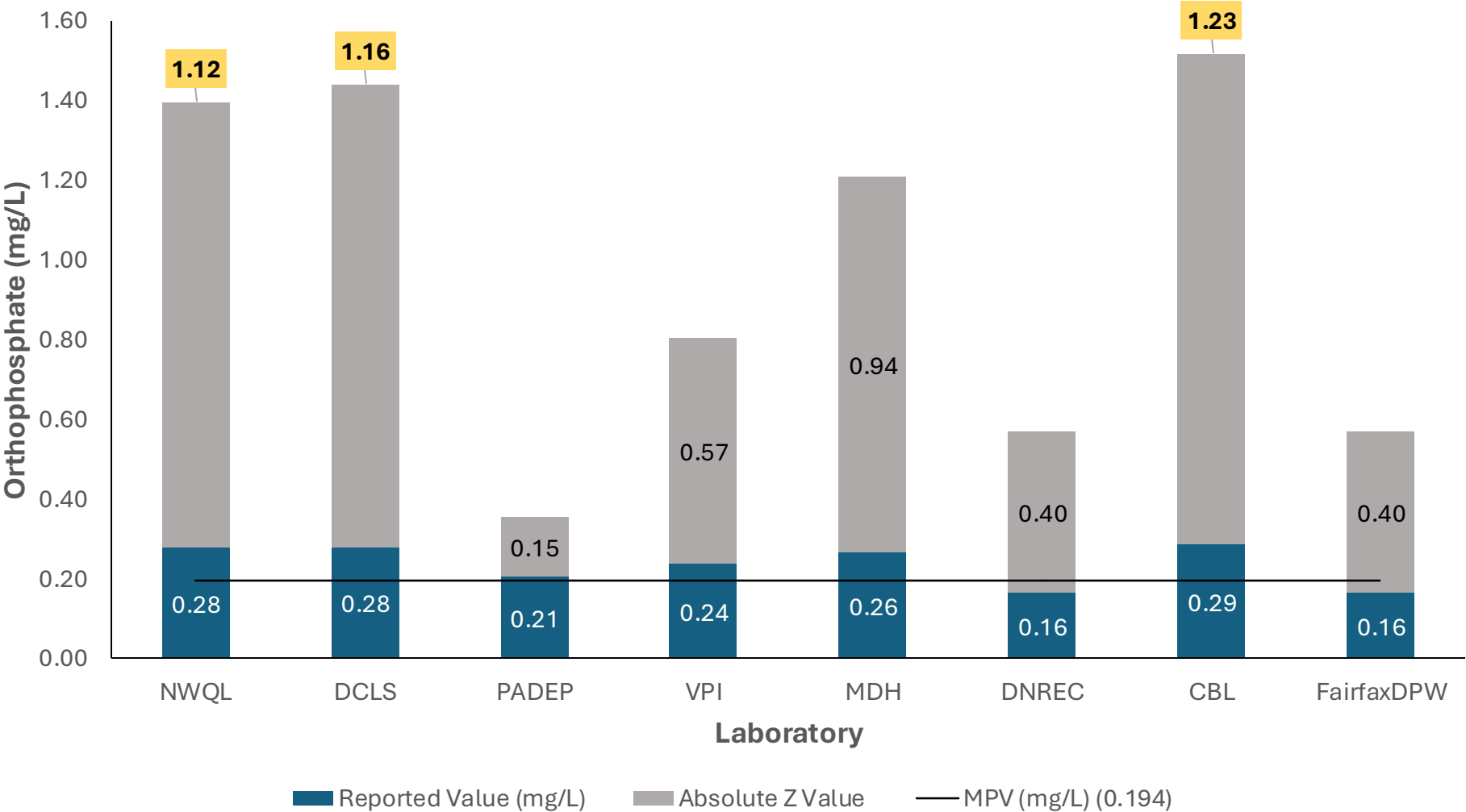
Orthophosphate Low Concentration



Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

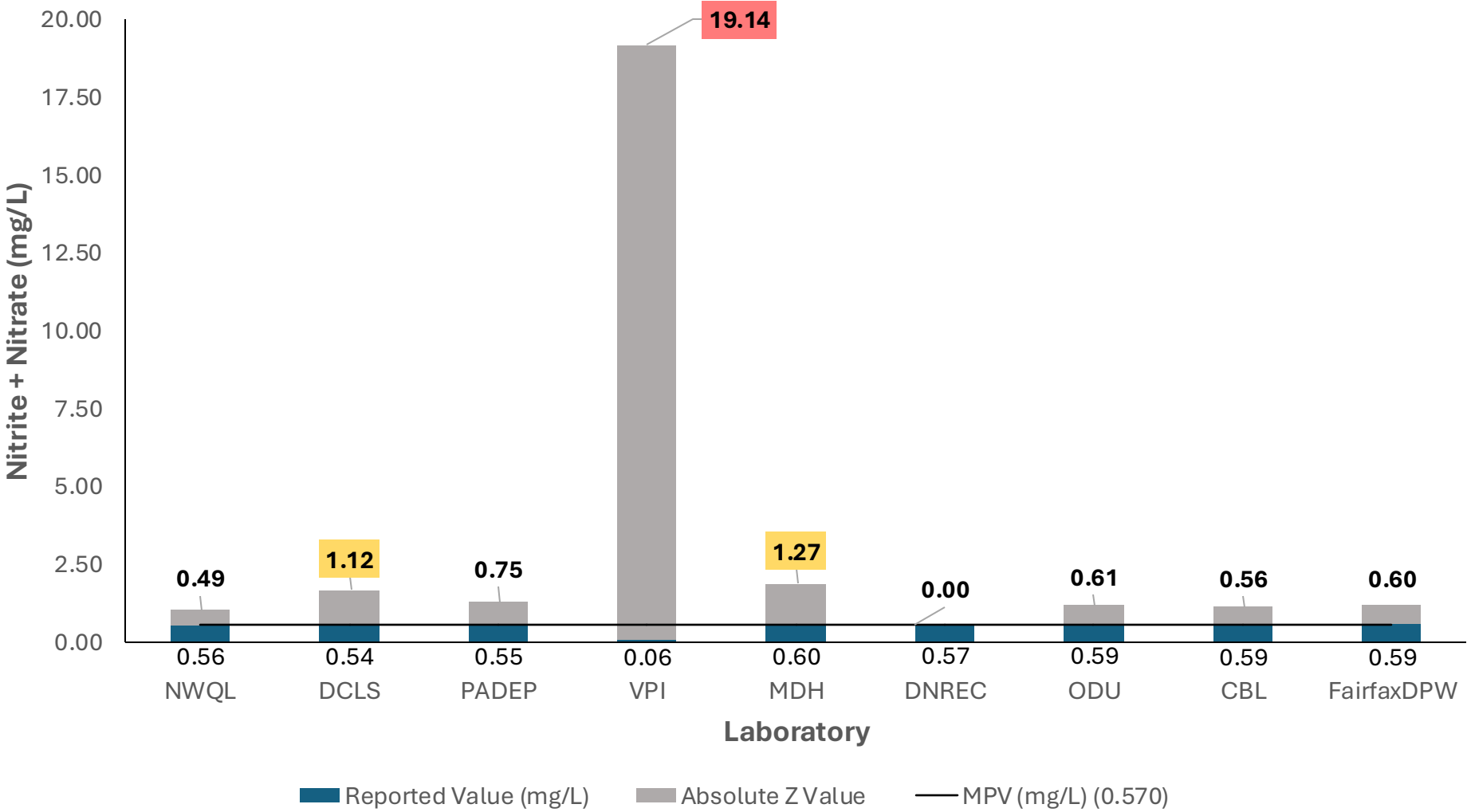


Orthophosphate High Concentration



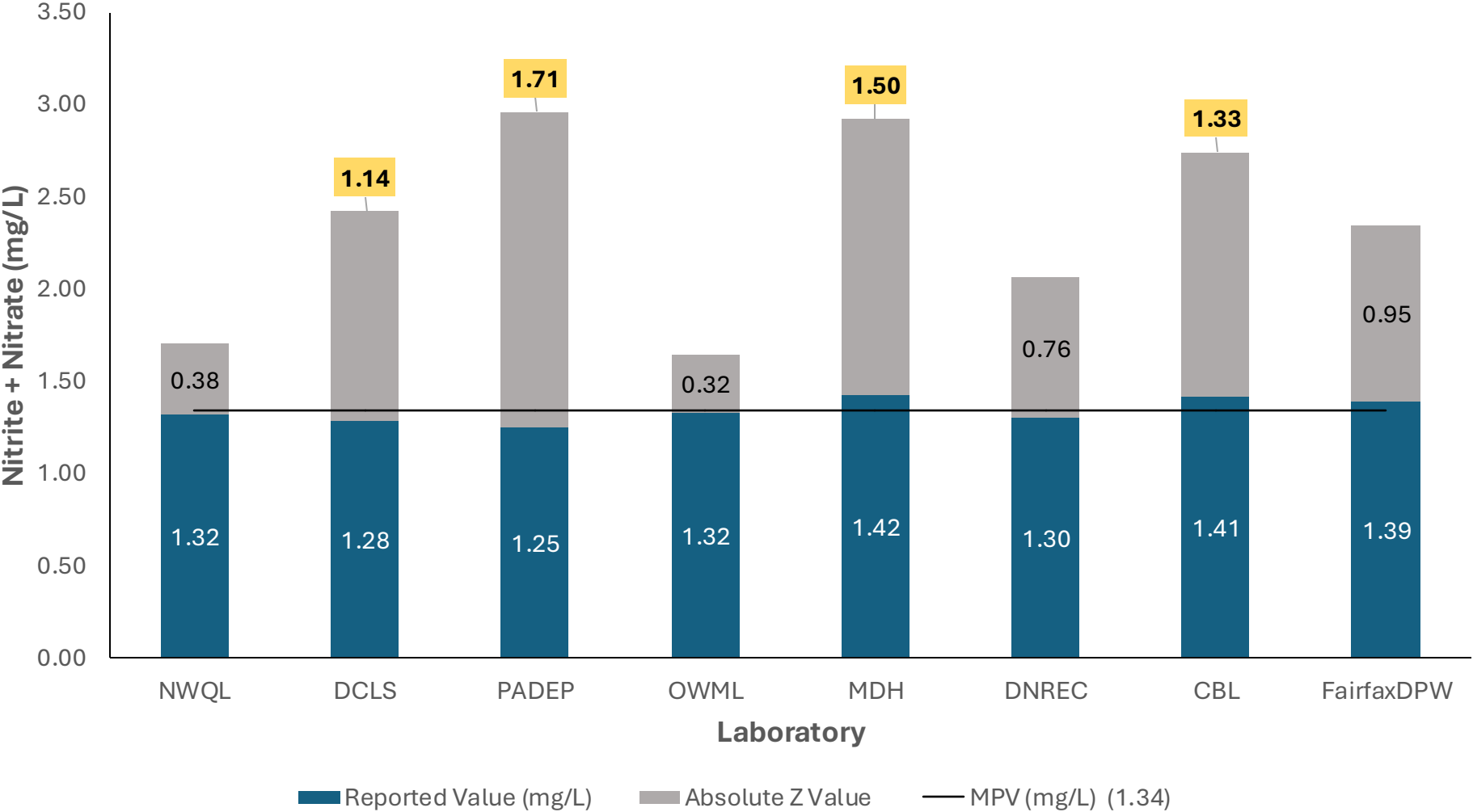
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Nitrite + Nitrate Low Concentration



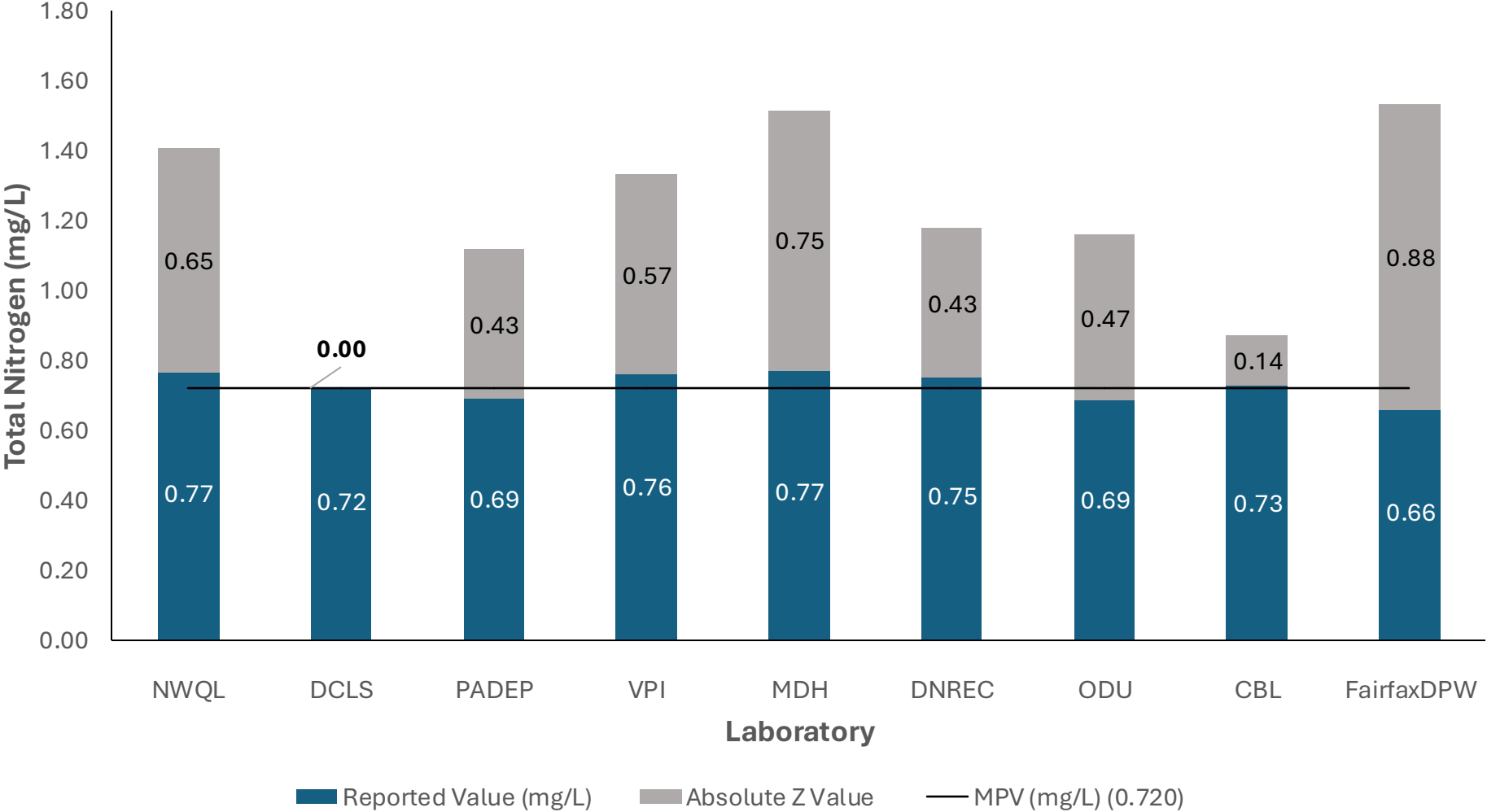
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Nitrite + Nitrate High Concentration



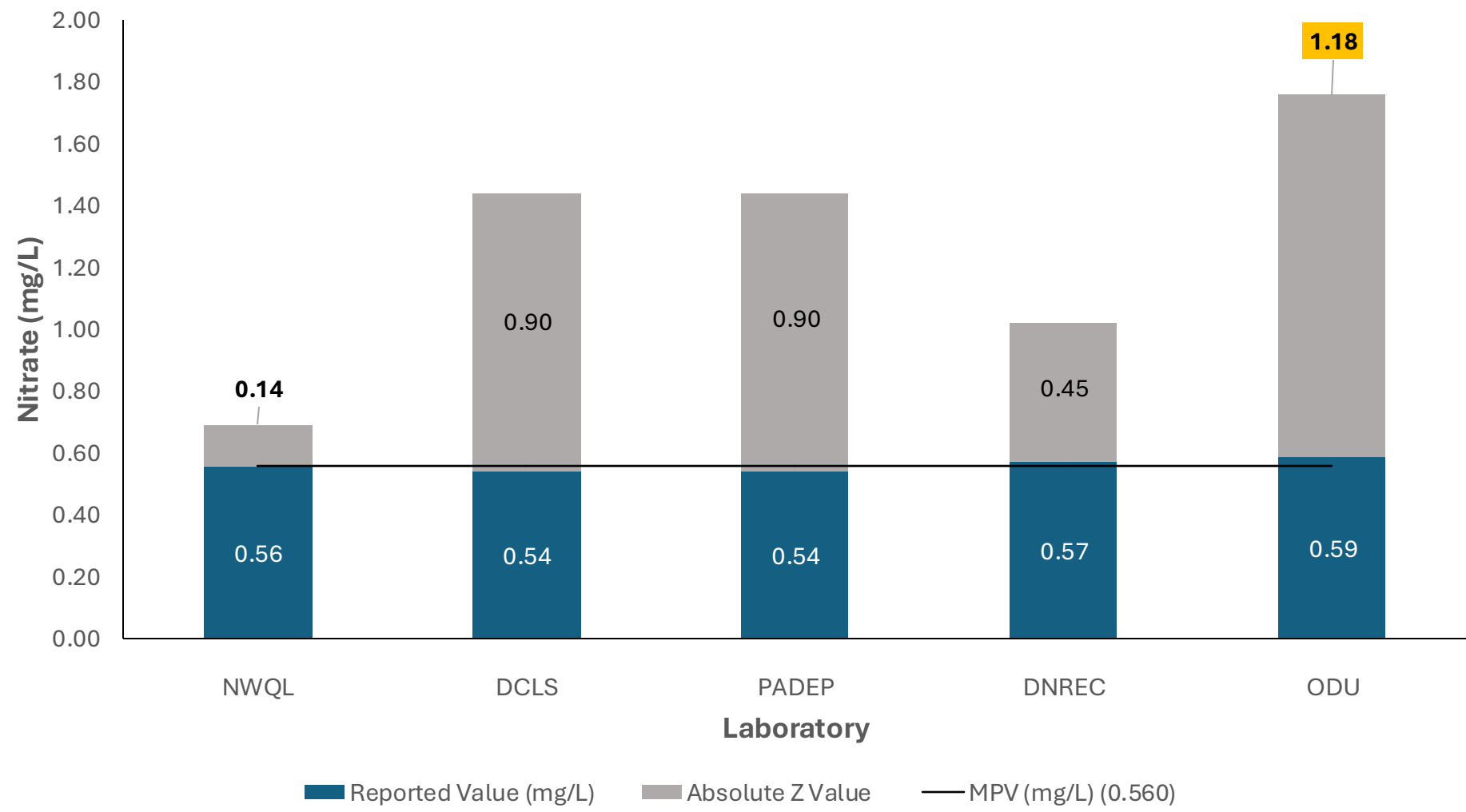
Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Total Nitrogen Low Concentration



Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Nitrate Low Concentration

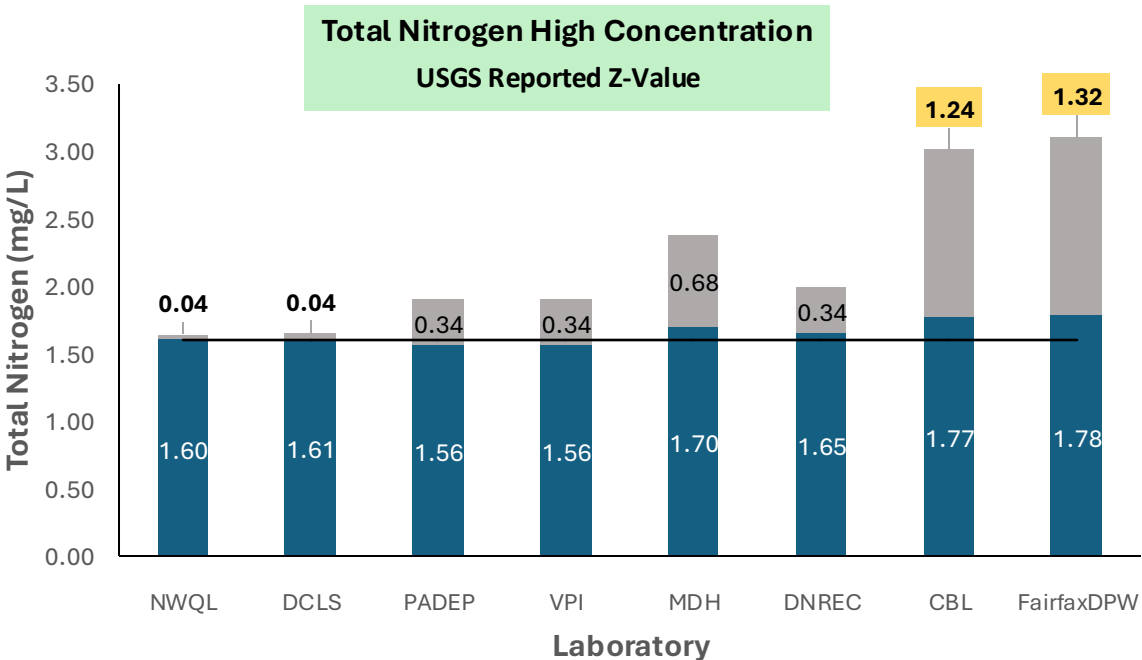
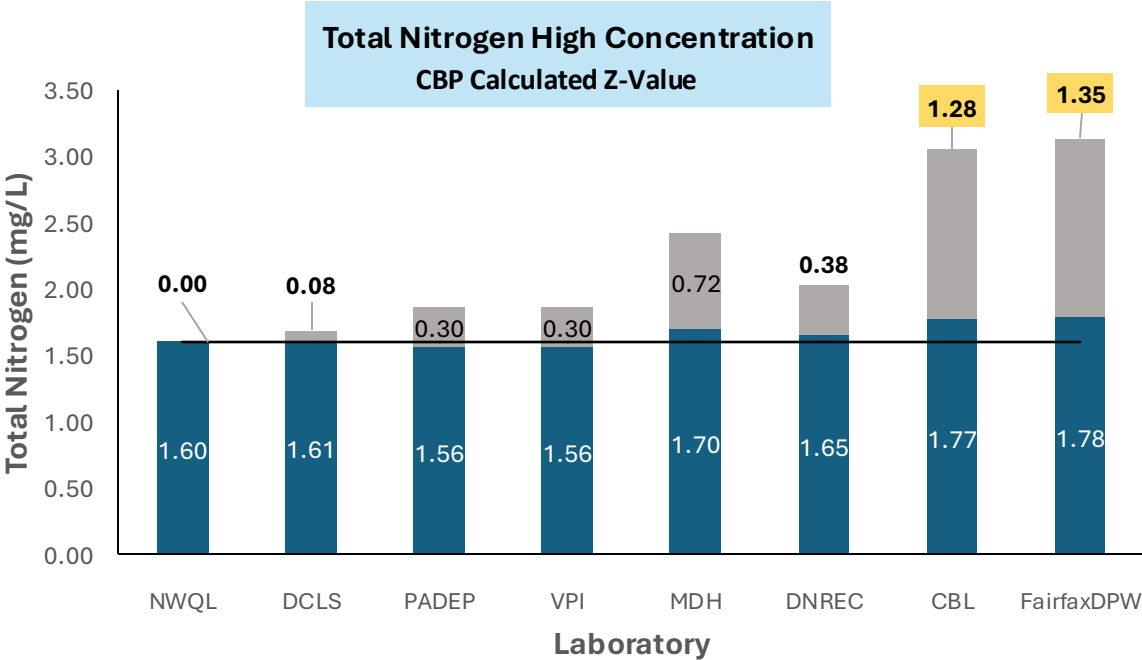


Absolute Z Value	Rating
<0.5	Excellent
0.51-1.0	Good
1.01-1.50	Satisfactory
1.51-2.0	Marginal
>2.0	Unsatisfactory

Inconsistency in the Z-values reported by USGS based on provided MPV and F-ps values in Total Nitrogen and Nitrate High Concentration Data.

Z-value: (reported value - MPV) / F-pseudosigma

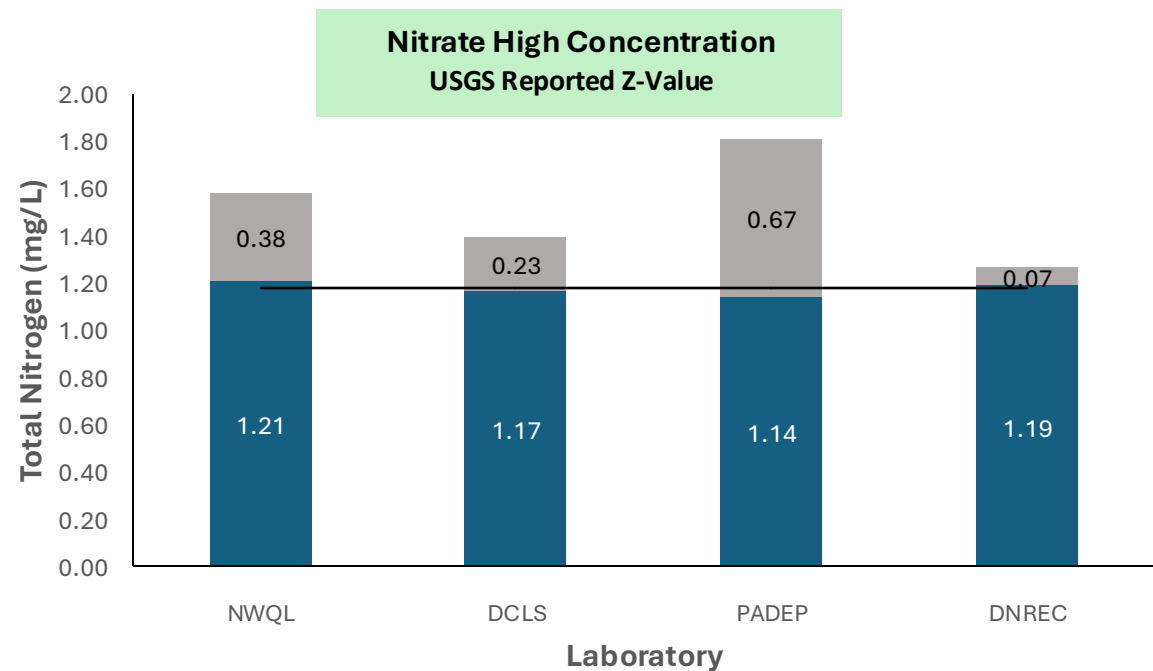
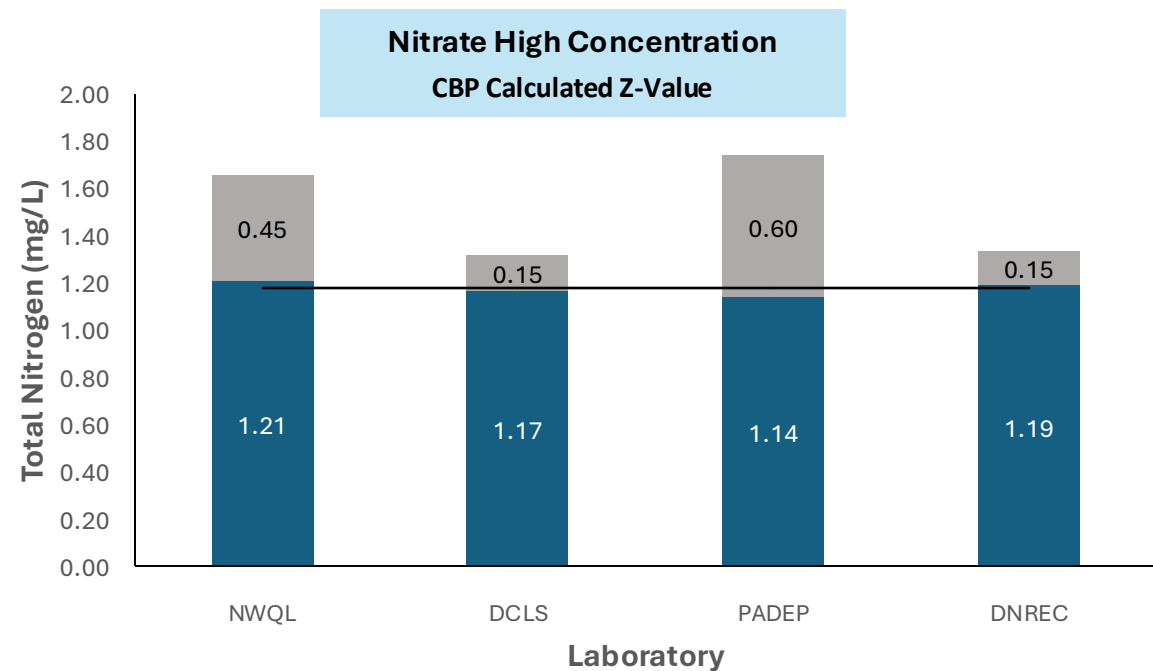
Lab ID	Lab	Reported Value (mg/L)	MPV (mg/L) (1.60)	F-ps (0.133)	CBP Calculated Absolute Z Value	USGS Reported Absolute Z Value
1	NWQL	1.60	1.60	0.133	0.00	0.04
59	DCLS	1.61	1.60	0.133	0.08	0.04
105	PADEP	1.56	1.60	0.133	0.30	0.34
118	VPI	1.56	1.60	0.133	0.30	0.34
198	MDH	1.70	1.60	0.133	0.72	0.68
297	DNREC	1.65	1.60	0.133	0.38	0.34
318	CBL	1.77	1.60	0.133	1.28	1.24
319	FairfaxDPW	1.78	1.60	0.133	1.35	1.32



Reported Value (mg/L) CBP Calculated Absolute Z Value MPV (mg/L) (1.60)

Reported Value (mg/L) USGS Reported Absolute Z Value MPV (mg/L) (1.60)

Same Inconsistency with Nitrate High Concentration Data



Lab ID	Lab	Reported Value (mg/L)	MPV (mg/L) (1.18)	F-ps (0.0667)	CBP Calculated Absolute Z Value	USGS Reported Absolute Z Value
1	NWQL	1.21	1.18	0.0667	0.45	0.38
59	DCLS	1.17	1.18	0.0667	0.15	0.23
105	PADEP	1.14	1.18	0.0667	0.60	0.67
297	DNREC	1.19	1.18	0.0667	0.15	0.07