

This review was performed with guidance from the National Functional Guidelines for Inorganic Superfund Methods Data Review (US EPA, 2020, US EPA). This validation guidance document specifically addresses analyses performed in accordance with the CLP analytical methods and is not completely applicable to the type of analyses and analytical protocols performed for the Standard Method (SM), SW-846, ASTM, and/or US EPA methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the quality of the analytical results and compliance relative to the Standard Method (SM), SW-846, ASTM, and/or US EPA utilized by the laboratory. This QA review was performed on the data associated with Sample Delivery Group (SDG):

L1852811

The findings offered in this report are based on a review of the Chain-of-Custody Record and Case Narrative, sample preservation and condition upon laboratory receipt, holding times, chemical yield, field and laboratory blank results, laboratory and field duplicate precision, laboratory control sample / laboratory control sample duplicate recoveries and precision, matrix spike / matrix spike duplicate recoveries and precision, and/or percent solids (as applicable). All review items may not have been included in this SDG; therefore, only those items included in this SDG were addressed in the QA review.

A summary of the results of the data review process is provided below:

Sample	Sample Type	Method	Analyte	T/D	Result	Qual	Reason Code(s)	MDL	QL	Uncertainty	Unit	Detect?
GACO0428W005	N	CALC	Total Nitrogen	N	6630	J	CR	131	250		ug/L	Y

Data Qualifiers

U	The analyte was analyzed for, but was not detected above the level of the adjusted detection limit or quantitation limit, as appropriate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reason Codes and Explanations

BF	Contamination present in a field blank (e.g ., Field Blank, Equipment Blank, etc .); evaluation criteria exceeded
BL	Contamination present in a laboratory blank (e.g ., Method Blank, Instrument Blank, etc .); evaluation criteria exceeded
BT	Contamination present in the Trip Blank; evaluation criteria exceeded
CC	Possible contamination due to carryover from a previous sample
CR	Calculated result in which one or more of the components has been qualified
CRQ	Calculated result flagged due to reporting protocol
CT	Cooler temperature criteria not met
CY	Chemical Yield recovery criteria not met
EC	Result exceeds the calibration range; potential bias indeterminate
FD	Field duplicate imprecision; potential bias indeterminate
GH	Headspace present in the gamma spectrometer sample analysis vessel; potential bias indeterminate
GS	Low sample density in the gamma spectrometer sample analysis vessel; potential bias indeterminate
HT	Holding time exceeded
HV	Headspace present in volatile vials
IN	Interference (e.g ., laboratory, chemical, chromatographic/instrumental, and/or matrix) present in the analysis
LC	Laboratory control sample/laboratory control sample duplicate recovery criteria not met
LCP	Laboratory control sample/laboratory control sample duplicate precision criteria not met; potential bias indeterminate
LD	Laboratory duplicate precision criteria not met; potential bias indeterminate
MDP	Laboratory deviated from the method for a method-defined parameter, based on regulatory requirements

MS	Matrix spike/matrix spike duplicate recovery criteria not met
MSP	Matrix spike/matrix spike duplicate precision criteria not met; potential bias indeterminate
PD	Post-digestion spike recovery criteria not met
OT	Other deficiencies, see validation report for additional details
PS	Low percent solids; potential bias indeterminate
RA	Replicate/multiple analyses criteria not met; potential bias indeterminate
RL	The analysis meets all qualitative identification criteria, but the measured concentration is between the method detection limit and the quantitation or reporting limit; potential bias indeterminate
RS	Reporting limit standard(s) outside of acceptance limits
SC	Relative percent difference between two columns exceeds criteria; potential bias indeterminate
SP	Sample preservation criteria not met
SR	Surrogate recovery criteria not met
ST	Sample container type incorrect
SU	Sample result is less than the two-sigma uncertainty
SUN	Absolute value of the negative sample result is greater than the two-sigma uncertainty
SW	Sample switch suspected
TD	Result for dissolved constituent significantly exceeded result for total constituent; potential bias indeterminate
TIC	Tentatively identified compound, quantified using an assumed calibration factor; potential bias indeterminate

					Lab Sample ID	L1852811-01											
					Sys Sample Code	GACO0428W005											
					Sample Name	GACO0428W005											
					Sample Date	4/28/2025 7:34:00 AM											
					Sample Type	N											
					Matrix	SW											
					Parent Sample												
					% Moisture												
Analytic Method	Chemical Name	CAS Rn	Fraction	Test Type	Result Unit	Final Result	Final Qual	Reason code	Uncertainty	Final MDL	Final RL	Final QL	Final Detect	Final Report	DF	Basis	
5310-B	TOC (Total Organic Carbon)	10-35-5	N	INITIAL	ug/L	22600				495	1000	1000	Y	Y	1	NA	
CALC	Total Nitrogen	TN	N	INITIAL	ug/L	6630	J	CR		131	250	250	Y	Y	1	NA	
E130.1	Hardness (colorimetric) as CaCO3	10-92-4	N	INITIAL	ug/L	1690000				53000	150000	150000	Y	Y	5	NA	
E300.0	Bromide	24959-67-9	N	INITIAL	ug/L		U			3400	5000	5000	N	Y	5	NA	
	Chloride	16887-00-6	N	INITIAL	ug/L	141000				2740	5000	5000	Y	Y	5	NA	
	Fluoride	16984-48-8	N	INITIAL	ug/L	1220				380	750	750	Y	Y	5	NA	
	Nitrate as (N)	14797-55-8	N	INITIAL	ug/L	4300				442	500	500	Y	Y	5	NA	
	Nitrite as (N)	14797-65-0	N	INITIAL	ug/L		U			397	500	500	N	Y	5	NA	
	Sulfate	14808-79-8	N	DILUTION	ug/L	1610000				31800	250000	250000	Y	Y	50	NA	
E351.2	Kjeldahl Nitrogen, TKN	7727-37-	N	INITIAL	ug/L	2330				131	250	250	Y	Y	1	NA	
E365.4	Phosphorus,Total	7723-14-0	N	INITIAL	ug/L	268				64.2	100	100	Y	Y	1	NA	
SM 2540C	Dissolved Solids	10-33-3	N	INITIAL	ug/L	3510000				50000	50000	50000	Y	Y	1	NA	
SM2320B	Alkalinity	TotAlk	N	INITIAL	ug/L	564000				4750	20000	20000	Y	Y	1	NA	
SM2540D	Suspended Solids	10-32-2	N	INITIAL	ug/L	8500				283	2500	2500	Y	Y	1	NA	
SM5540C	MBAS	MBAS	N	INITIAL	ug/L	177				19.0	100	100	Y	Y	1	NA	
SW6020	Cadmium,Dissolved	7440-43-9	D	INITIAL	ug/L		U			0.120	1.00	1.00	N	Y	1	NA	
	Calcium	7440-70-2	N	REANALYSIS	ug/L	347000				92.5	1000	1000	Y	Y	1	NA	
	Iron	7439-89-6	N	REANALYSIS	ug/L	140				22.6	100	100	Y	Y	1	NA	
	Lead,Dissolved	7439-92-1	D	INITIAL	ug/L		U			0.500	2.00	2.00	N	Y	1	NA	
	Magnesium	7439-95-4	N	REANALYSIS	ug/L	198000				82.7	1000	1000	Y	Y	1	NA	
	Manganese	7439-96-5	N	REANALYSIS	ug/L	1620				0.700	5.00	5.00	Y	Y	1	NA	
	Manganese,Dissolved	7439-96-5	D	INITIAL	ug/L	1460				0.700	5.00	5.00	Y	Y	1	NA	
	Nickel,Dissolved	7440-02-0	D	INITIAL	ug/L	8.17				0.500	2.00	2.00	Y	Y	1	NA	
	Potassium	7440-09-7	N	REANALYSIS	ug/L	14900				96.5	2000	2000	Y	Y	1	NA	
	Sodium	7440-23-5	N	REANALYSIS	ug/L	349000				142	2000	2000	Y	Y	1	NA	
	Zinc,Dissolved	7440-66-6	D	INITIAL	ug/L		U			4.00	25.0	25.0	N	Y	1	NA	
SW7199	Hexavalent Chromium	18540-29-9	N	INITIAL	ug/L		U			0.100	5.00	5.00	N	Y	1	NA	