SEMI-ANNUAL (March and June 2014) GROUNDWATER MONITORING REPORT

Chamberlain Flow Line Leak and Historical Contamination #1RP-1-10-2391

LAI Project No. 12-0126-01

July 11, 2014

Prepared for: Legacy Reserves, L.P. 30 West Wall Street, Suite 1400 Midland, Texas 79701

Larson & Associates, Inc. 507 North Marienfeld Street, Suite 205 Midland, Texas 79701

Prepared by:

Mark J. Larson Certified Professional Geologist No. 10490



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1.0 EXECUTIVE SUMMARY

This report has been prepared on behalf of Legacy Reserves, L.P. (Legacy) for submittal to the New Mexico Oil Conservation Division (OCD) to present laboratory analysis of 2014 quarterly (March and June) groundwater samples from a monitoring well (MW-1) near the Chamberlain Tank Battery (Site). The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, Range 37 East, in Lea County, New Mexico. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6." The surface owner is Angell Ranch Co., LLC.

The following activities occurred during 2014:

- March 11, 2014 First Quarter Gauging and Groundwater Sampling Event
- June 18, 2014 Second Quarter Gauging and Groundwater Sampling Event

The following observations are documented in this report:

- BTEX was below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards during the March and June 2014 sampling events;
- Nitrate, chloride, sulfate and TDS were below WQCC human health and domestic water quality standards during the March and June 2014 sampling events.

Legacy will continue groundwater monitoring on a quarterly (4 times per year) schedule. Notification will be provided to the OCD at least 48 hours prior to each monitoring event, and as soon as possible upon any significant change in analyte concentrations.

2.0 INTRODUCTION

Legacy Reserves, L.P. (Legacy) submits this document to the New Mexico Oil Conservation Division (OCD) to present quarterly (4 times per year) groundwater monitoring results from a monitoring well (MW-1) located near the Chamberlain Tank Battery (Site), Lea County, New Mexico. This report is for groundwater sampling performed during March and June 2014. The Site is located in Unit C (NE 1/4, NW 1/4), Section 14, Township 15 South, and Range 37 East, about 20 miles northeast of Lovington, New Mexico. The surface is owned by Angell Ranch Co., LLC. The geodetic position is north 33° 01' 16.7" and west 103° 10' 13.6". Figure 1 presents a location and topographic map. Figure 2 presents an aerial photograph. Figure 3 presents a Site drawing.

2.1 Background

In 2009, while remediating a non-reportable spill from a flow line south of the Site, a Legacy contractor encountered contamination from a historic release. The contractor excavated about 200 cubic yards of soil from the non-reportable spill to a depth of approximately 5 feet below ground surface (bgs).

In May 2010 Legacy retained Basin Environmental Consulting, LLC (Basin), located in Lovington, New Mexico, to investigate the historic contamination. Among other things Basin collected soil samples from five (5) exploratory trenches (main, east, west, north and south) and six (6) borings (SB-1 through SB-6). The trenches were excavated with a track hoe between approximately 3.5 (north) and 18 (main, west, south and east) feet bgs. On January 7, 2010, Legacy submitted the initial C-141 to the OCD District 1 office located in Hobbs, New Mexico. The OCD assigned remediation project number 1RP-2391 to the historic release.

Between April 2012 and September 2013, Larson & Associates, Inc (LAI) supervised excavation of additional soil, collected soil samples from 9 borings (BH-1 through BH-9) and installed 1 monitoring well (MW-1) about 100 feet southeast (down gradient) of the Site. Groundwater was encountered at approximately 65 feet bgs. Laboratory results from the initial groundwater sample collected on June 11, 2013 reported chloride and total dissolved solids (TDS) at 263 milligrams per liter (mg/L) and 1,180 mg/L, respectively. The OCD requested groundwater monitoring fro 8 quarters (2 years) commencing in December 2013.

LAI supervised closure of the excavation during September 2013 including installing a 20 mil polyethylene (geomembrane) liner in the bottom of the excavation, approximately 38,000 square feet, and filling with approximately 10,308 cubic yards of clean soil. The surface will be seeded when adequate moisture is available, as determined by the landowner. A final report was submitted to the OCD on March 3, 2014 ("Excavation Closure Report, Chamberlain Flow Line and Historic Contamination, 1RP-10-1-2391") that included laboratory results of groundwater samples collected from the monitoring well on June 11, 2013 and December 26, 2013. The excavation closure and laboratory results of groundwater samples was documented in a report titled, *"Excavation Closure Report, Chamberlain Flow Line and Historic Contamination, #1RP1-10-2391, March 3, 2014"*.

2.2 Setting

The surface elevation is approximately 3,791 feet above mean sea level (MSL) and slopes gently to the southeast. The soil is designated as "Kimbrough gravelly loam, 0 to 3 percent slopes (Kg)" which occurs on upland areas known locally as "scabland." The soil has a surface layer approximately 6 inches thick of dark grayish brown gravelly loam which is underlain by indurated caliche. The unit is comprised of approximately 85% Kimbrough soil with the remainder being Lea, Sharvana, Stegall and Slaughter soils.

The soil is too shallow for cropland therefore its main use is range and wildlife habitat. A well used for livestock watering is located about 1,600 feet southeast of the Site.

The Site is underlain by a thin layer of silty clay (loam) which is underlain by a resilient layer of caliche or caprock. The caliche is a hard, erosion resistant, pedogenic calcrete that between approximately 25 and 30 feet thick. The caliche grades into the Pliocene to Miocene-age Ogallala formation which is comprised of fluvial sand, silt, clay and localized gravel, with indistinct to massive crossbeds. The Ogallala sand is generally fine- to medium-grained quartz. The Ogallala formation is underlain by shale of the Triassic-age Chile formation of the Dockum Group.

Groundwater occurs in the Ogallala formation at approximately 62 feet bgs. The Triassic-age Chinle formation is the lower confining unit for the Ogallala formation and occurs at a depth of approximately 120 feet bgs according to records from the New Mexico Office of the State Engineer (OSE). The regional groundwater flow direction is to the southeast. 2.4Groundwater Occurrence

3.0 GROUNDWATER SAMPLES AND LABORATORY ANALYSIS

On March 11, 2014, groundwater samples were collected from the monitoring well during the first (1st) quarterly event and on June 18, 2014, during the second (2nd) quarterly event. The depth to groundwater was recorded prior to purging the well. On March 11, 2014, depth to groundwater was recorded at 66.34 feet from top of casing (TOC) or about 63.56 feet bgs. No static depth to groundwater reading was available for June 18, 2014. The groundwater samples were collected after removing approximately three (3) well volumes of groundwater or purging dry with dedicated disposable polyethylene bailers or pumping with an electric submersible pump and dedicated disposable tubing. The samples were carefully transferred to laboratory containers that were labeled, sealed with custody labels, packed in an ice filled chest and delivered under chain of custody control to DHL Analytical, Inc. (DHL), a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory, located in Round Rock, Texas. All metals samples were filtered by the laboratory to exclude particles larger than 0.45µ and acidified with nitric acid within 24-hours of collection. DHL analyzed the samples for benzene, toluene, ethylbenzene, xylene (BTEX) by method SW-8021B, filtered metals (calcium, magnesium, potassium, sodium) by methods SW-6020, anions, alkalinity, and total dissolved solids (TDS) by methods E-300, M2320B and M2540, respectively. Purge water was contained in a portable tank and discharged to the Facility's process water system for disposal in a permitted Class II injection well. Table 1 presents monitoring well completion and gauging summary. Table 2 presents the laboratory organic analytical data summary. Table 3 presents the laboratory inorganic analytical data summary. Appendix A presents the laboratory reports.

3.1 Organic Analysis

All BTEX values were below the analytical method reporting limit (RL) and New Mexico Water Quality Control Commission (WQCC) human health standards during the first and second 2014 quarterly monitoring events. These results are consistent with the previous monitoring event. No data quality exceptions were noted in the DHL case narratives.

3.2 Inorganic Analysis

Chloride decreased from 263 mg/L (June 11, 2013) to 147 mg/L (March 11, 2014) and 120 mg/L (June 18, 2014). The chloride concentrations were below the WQCC domestic water quality standard (250

mg/L) during March and June sample events. The TDS concentration decreased from 1,180 mg/L (June 11, 2013) to 798 mg/L (March 11, 2014) and 816 mg/L (June 18, 2014). The TDS concentrations were below WQCC domestic water quality standard (1,000 mg/L) during the March and June sampling events. The remaining inorganic constituents were within the range expected for the groundwater.

Case narrative was indicated for calcium for the low level calibration verification was slightly above the method control limits. This analyte was detected in the associated samples at greater than 10x the amount detected in the bracketing QC sample. Also the recovery of calcium for the matrix spike and matrix spike duplicate was below the method control limits. The recovery of magnesium, potassium and sodium for the Post Digestion Spike were above the method control limits. All samples in the case narrative were flagged accordingly in the QC summary report. No further corrective actions were taken by DHL. DHL indicated the response factor for internal standards for three samples, bracketing and Batch QC samples were outside of the specifications for method SW6020A, due to matrix interference.

No data quality exceptions were noted in the DHL case narratives for chloride, sulfate, TDS, and nitrate.

4.0 CONCLUSIONS

The following observations are documented in this report:

- BTEX was below the analytical method reporting limit and WQCC human health standards during the March and June 2014 sampling events;
- Chloride, nitrate, sulfate and TDS were below the WQCC human health (nitrate) and domestic water quality (chloride, sulfate and TDS) water quality standards during the March and June 2014 sampling events.

5.0 **RECOMMENDATIONS**

Legacy will monitor groundwater in monitoring well MW-1 on a quarterly (4 times per year) schedule. Depth to groundwater and groundwater samples will be collected during each event. The samples will be collected as stated earlier and analyzed for BTEX, anions (sodium, magnesium, calcium), anions (sulfate, chloride, alkalinity), nitrate and TDS. The groundwater sample results will be submitted to the OCD in semi-annual (twice yearly) reports. Notice will be provided to the OCD in Hobbs and Santa Fe, New Mexico, at least 48 hours prior to each event.

TABLES

Table 1 Monitoring Well Drilling and Completion Summary Legacy Reserves, L.P., Chamberlin Site , 1RP-2391 Lea County, New Mexico

Well Informatio	Groundwater Data									
Well ID	Date Drilled	Drilled Depth (feet bgs)	Well Depth (feet TOC)	Well Diameter (inches)	Surface Elevation	Screen Interval (feet bgs)	Casing Stickup (feet)	TOC Elevation	Date Gauged	Depth to Water (TOC)
MW-1	6/10/2013	75.42	78.40	2		54.77 - 74.72	2.78		06/10/2013	65.82
									06/11/2013	65.85
									12/26/2013	
									03/11/2014	66.34
									6/18/2014	

Notes: Monitoring well drilled using air rotary rig by Scarborough Drilling, Inc., Lamesa, Texas and constructed with 2-inch threaded schedule 40 PVC casing and screen All values are in feet, unless otherwise noted.

bgs - below ground surface

bgs - below ground su

TOC - top of casing

--: No data available

Table 2Groundwater Organic Analytical Data SummaryLegacy Reserves, L.P., Chamberlin Site, 1RP-2391Lea County, New Mexico

Sample ID	Date	Benzene	Toluene	Ethylbenzene	Xylene
WQCC Limit:		0.01	0.75	0.75	0.62
MW-1	06/11/2013	<0.001	<0.001	<0.001	<0.003
	3/11/2014	<0.002	<0.006	<0.006	<0.009
	6/18/2014	<0.002	<0.006	<0.006	<0.009
Trip Blank	3/11/2014	<0.002	<0.006	<0.006	<0.009

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 method 8021B

All values except pH reported in milligrams per Liter (mg/L) equivelent to parts per million (ppm).

Table 3Groundwater Inorganic Analytical Data SummaryLegacy Reserves, L.P., Chamberlin Site, 1RP-2391Lea County, New Mexico

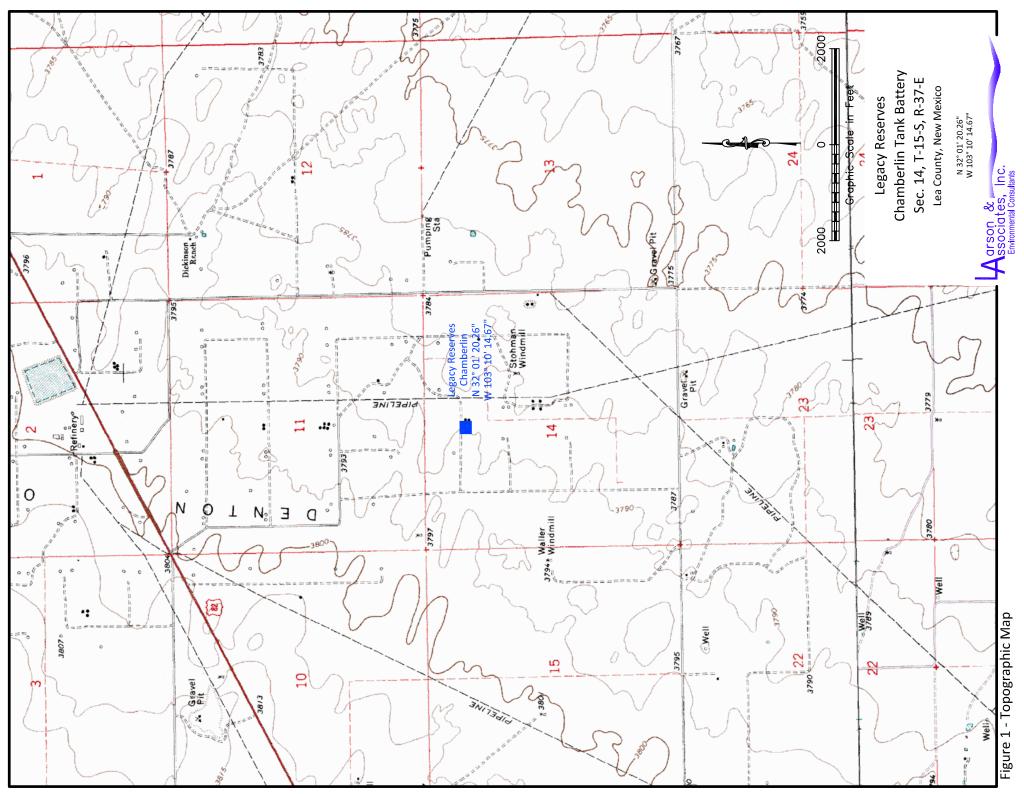
Sample ID	Date	Alkalinity	Chloride	Nitrate - N	TDS	Sulfate	Calcium	Magnesium	Potassium	Sodium
		(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
WQCC Limit	:		250	10	1,000	600				
MW-1	06/11/2013	272	263	8.53	1,180	206	94	230	7.20	51
	3/11/2014	294	147	1.96	798	93.8	361	14.1	3.05	196
	6/18/2014	353	120	2.05	816	92.7	170	13.7	2.91	223

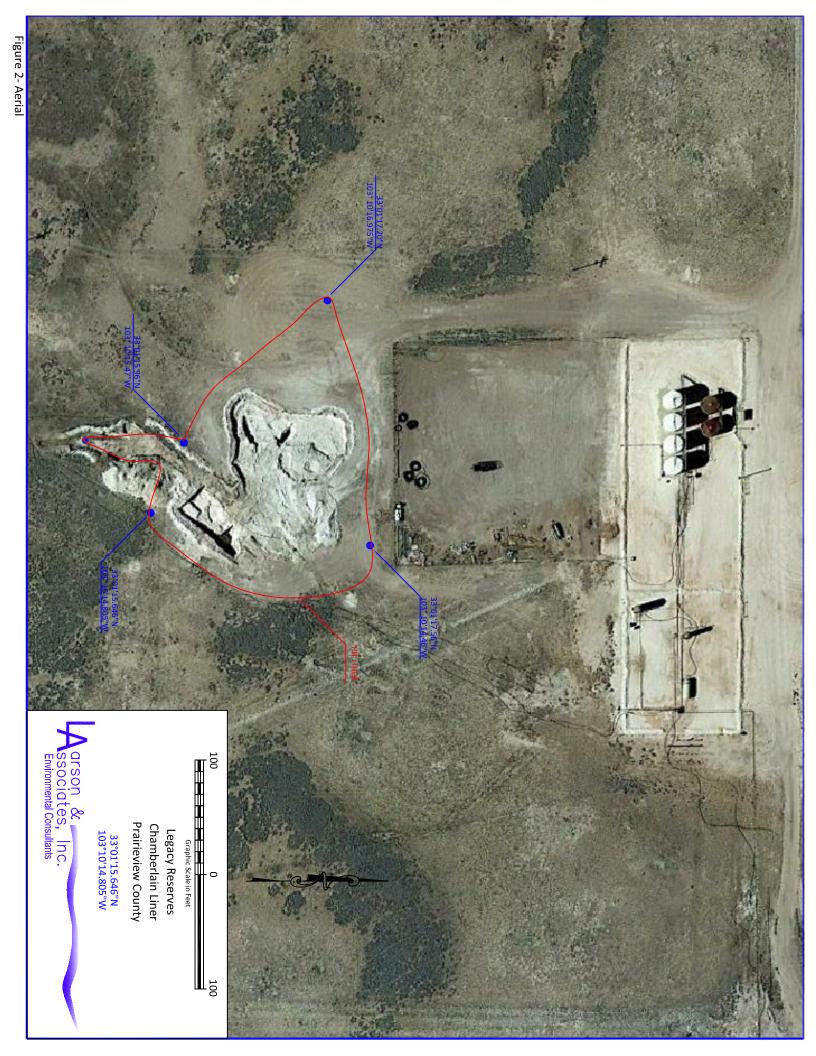
Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA method

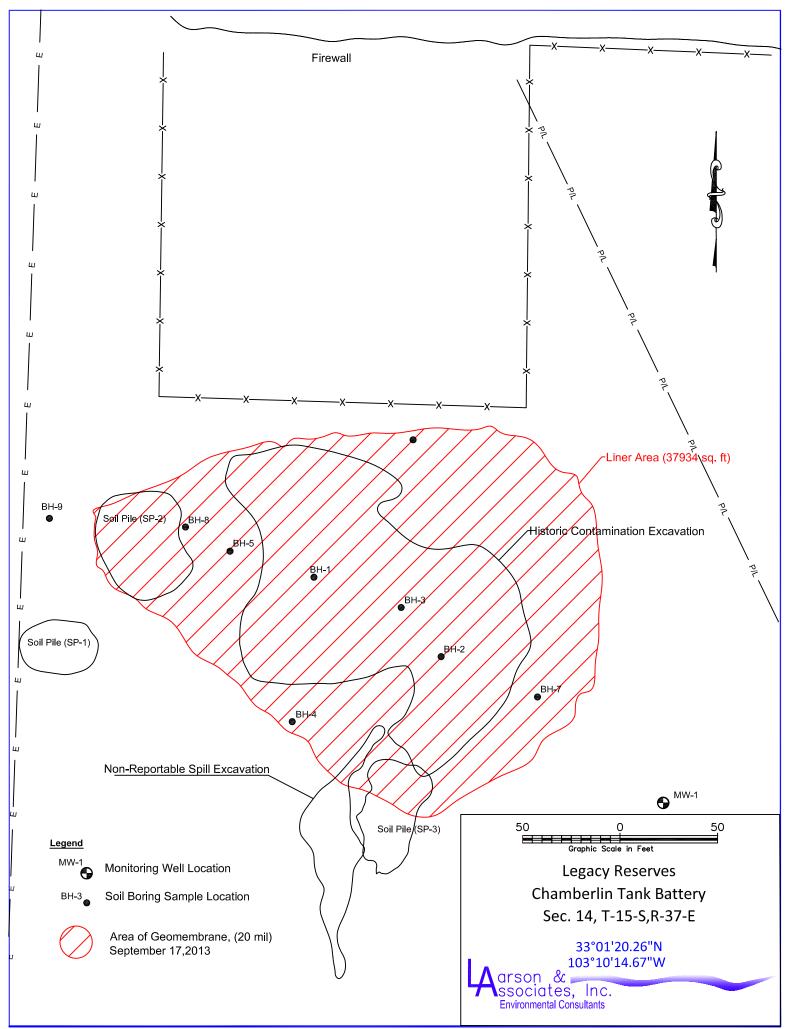
All values except pH reported in milligrams per Liter (mg/L) equivelent to parts per million (ppm).

<: Denotes concentration less than method reporting limit (RL)

FIGURES







APPENDIX A

LABORATORY ANALYTICAL REPORTS AND CHAIN OF CUSTODY DOCUMENTATION



June 26, 2014

Coty Woolf Larson & Associates 507 N. Marienfeld #200 Midland, TX 79701 TEL: (432) 687-0901 FAX (432) 687-0456 RE: Legacy Chamberlain

Order No.: 1406204

Dear Coty Woolf:

DHL Analytical, Inc. received 1 sample(s) on 6/19/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-14-12



2300 Double Creek Drive • Round Rock, TX 78664 • Phone (512) 388-8222 • FAX (512) 388-8229 www.dhlanalytical.com

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Miscellaneous Documents	
CaseNarrative 1406204	6
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PrepDatesReport 1406204	
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Analytical Report 1406204	10
AnalyticalQCSummaryReport 1406204	

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LIMIT OF LIABILITY: We are not responsible for claims in excess of \$100 for any reason unless you: 1) declare a greater value (not to exceed \$26,000); 2) pay an additional fies; 3) and document your actual loss in a linely manner. We will not pay any claim in excess of the actual loss. We are not liable for any special or consequential damages. Additional fimilations of liability are contained in our current Service Guide. If you ask us to deliver a package without obtaining a delivery signature, you release us of all liability for claims resulting from such service. NO EUVERY SIGNATURE WILL BE OBTAINED FOR LSD EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSD IS NOT INTENDED FOR LSD EARLY OVERNIGHT SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY SIGNATURE WILL BE OBTAINED FOR LSD EARLY OVERNIGHT SERVICE. PACKAGING PROVIDED BY LSD IS NOT INTENDED FOR USE ON LSD GROUND SERVICE. OVERSIZE RATES MAY APPLY. DELIVERY COMMITMENTS MAY VARY. ADDITIONAL FEES MAY APPLY.

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Water - ph>9 (S) or ph>12 (CN) acceptable upon receipt? Yes No NA I LOT # Adjusted? Checked by Any No response must be detailed in the comments section below. Client contacted Date contacted: Person contacted Contacted by: Regarding Comments:	Water - pH<2 acceptable upon receipt?		Yes 🗹			8086	
Adjusted? Checked by Any No response must be detailed in the comments section below. Client contacted Date contacted: Person contacted Contacted by: Regarding Comments:			Adjusted?			<u> </u>	
Any No response must be detailed in the comments section below. Client contacted Date contacted: Contacted by: Regarding Comments:	Water - ph>9 (S) or ph>12 (CN) acceptable up	on receipt?	Yes 🗌	No 🗔	NA 🗹 LOT #		
Client contacted Date contacted: Contacted by: Regarding Comments:			Adjusted?		Checked by		
Contacted by: Regarding Comments:	Any No response must be detailed in the comm	nents section below.					<u> </u>
Comments:	Client contacted	Date contacted:		Per	son contacted		
Comments:	Contacted by:	Regarding			·	χ.	
		· · ·				······································	
Corrective Action	Comments:	· · · · · · · · · · · · · · · · · · ·					<u> </u>
Corrective Action	·						
Corrective Action							
	Corrective Action						
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Page 1 of 1

CLIENT:Larson & AssociatesProject:Legacy ChamberlainLab Order:1406204

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis Method SW6020A - Metals Analysis Method SW8021B - Volatile Organics by GC Analysis Method M2540C - Total Dissolved Solids Analysis Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 6/19/2014. A total of 1 sample was received and analyzed. The samples arrived in good condition and were properly packaged. The Time of Collection was Mountain Standard Time.

METALS ANALYSIS

For metals Analysis, the recovery of Calcium for the Low Level Calibration Verification (LCVL-140620) was slightly above the method control limits. This is flagged accordingly in the QC Summary Report. This analyte was detected in the associated samples at greater than 10x the amount detected in the bracketing QC sample. No further corrective actions were taken.

For Metals Analysis, the recovery of Calcium for the Matrix Spike and Matrix Spike Duplicate (1406177-01 MS/MSD) was below the method control limits. These are flagged accordingly in the QC Summary Report. This analyte was within method control limits in the associated LCS. No further corrective actions were taken.

For Metals Analysis, the recoveries of Magnesium, Potassium and Sodium for the Post Digestion Spike (1406177-01 PDS) were above the method control limits. These are flagged accordingly in the QC Summary Report. These analytes were within method control limits in the associated Serial Dilution. No further corrective actions were taken.

Date: 26-Jun-14

CLIENT:	Larson & Associates	
Project: Lab Order:	Legacy Chamberlain 1406204	Work Order Sample Summary

Lab Smp ID Client Sample ID

Tag Number

1406204-01 MW-1

Date Collected	Date Recved
06/18/14 10:50 AM	6/19/2014

Lab Order:1406204Client:Larson & Associates

Project: Legacy Chamberlain

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1406204-01A	MW-1	06/18/14 10:50 AM	Aqueous	SW5030C	Purge and Trap Water GC	06/24/14 08:52 AM	64311
1406204-01B	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
	MW-1	06/18/14 10:50 AM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	06/19/14 11:35 AM	64244
1406204-01C	MW-1	06/18/14 10:50 AM	Aqueous	M2320 B	Alkalinity Preparation	06/24/14 09:02 AM	64317
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	E300	Anion Preparation	06/19/14 01:30 PM	64235
	MW-1	06/18/14 10:50 AM	Aqueous	M2540C	TDS Preparation	06/19/14 10:36 AM	64196

Lab Order:1406204Client:Larson & Associates

Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1406204-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	64311	1	06/24/14 01:52 PM	GC8_140624A
1406204-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	1	06/20/14 12:30 PM	ICP-MS4_140620B
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	64244	50	06/20/14 12:22 PM	ICP-MS4_140620B
1406204-01C	MW-1	Aqueous	M2320 B	Alkalinity	64317	1	06/24/14 10:49 AM	TITRATOR_140624B
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	10	06/19/14 04:41 PM	IC_140619A
	MW-1	Aqueous	E300	Anions by IC method - Water	64235	1	06/19/14 03:23 PM	IC_140619A
	MW-1	Aqueous	M2540C	Total Dissolved Solids	64196	1	06/20/14 09:15 AM	WC_140619D

CLIENT:	Larson & Associates			Clie	ent Sam	ple ID: MW-1		
Project:	Legacy Chamberlain				L	ab ID: 1406204	-01	
Project No:	12-0126-01			С	ollection	Date: 06/18/14	10:50	AM
Lab Order:	1406204				N	latrix: AQUEO	US	
Analyses		Result	MDL	RL	Qual	Units	DF	Date Analyzed
	GANICS BY GC		SW80)21B				Analyst: LM
Benzene		ND	0.000800	0.00200		mg/L	1	06/24/14 01:52 PM
Ethylbenzene		ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Toluene		ND	0.00200	0.00600		mg/L	1	06/24/14 01:52 PM
Xylenes, Total		ND	0.00300	0.00900		mg/L	1	06/24/14 01:52 PM
Surr: a,a,a-Trifluorotoluene		106	0	87-113		%REC	1	06/24/14 01:52 PM
FRACE METAL	S: ICP-MS - WATER		SW60)20A				Analyst: SW
Calcium		170	5.00	15.0		mg/L	50	06/20/14 12:22 PM
Magnesium		13.7	5.00	15.0	J	mg/L	50	06/20/14 12:22 PM
Potassium		2.91	0.100	0.300		mg/L	1	06/20/14 12:30 PM
Sodium		223	5.00	15.0		mg/L	50	06/20/14 12:22 PM
ANIONS BY IC	METHOD - WATER		E3	00				Analyst: AV
Chloride		120	3.00	10.0		mg/L	10	06/19/14 04:41 PM
Nitrate-N		2.05	0.100	0.500		mg/L	1	06/19/14 03:23 PM
Sulfate		92.7	1.00	3.00		mg/L	1	06/19/14 03:23 PM
ALKALINITY			M232	20 B				Analyst: LM
Alkalinity, Bicar	bonate (As CaCO3)	353	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Carb	onate (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Hydro	oxide (As CaCO3)	ND	10.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
Alkalinity, Total	(As CaCO3)	353	20.0	20.0		mg/L @ pH 4.51	1	06/24/14 10:49 AM
TOTAL DISSO	LVED SOLIDS		M254	40C				Analyst: MK
Total Dissolved Filterable)	Solids (Residue,	816	10.0	10.0		mg/L	1	06/20/14 09:15 AM

Qualifiers:

- * Value exceeds TCLP Maximum Concentration Level
- C Sample Result or QC discussed in the Case Narrative
- E TPH pattern not Gas or Diesel Range Pattern
- MDL Method Detection Limit

RL Reporting Limit

N Parameter not NELAC certified

- B Analyte detected in the associated Method Blank
- DF Dilution Factor
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit

S Spike Recovery outside control limits

Project:

CLIENT: Larson & Associates Work Order: 1406204

Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

GC8_140624A **RunID:**

									4	
The QC data in batch 64311 app	plies to the fo	ollowing s	amples: 1406							
Sample ID LCS-64311	Batch ID:	64311		TestNo:	SW	/8021B		Units:	mg/L	
SampType: LCS	Run ID:	GC8_1	40624A	Analysis	s Date: 6/2	4/2014 10:10	6:38 AM	Prep Date:	6/24/2	014
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qua
Benzene		0.0511	0.00200	0.0500	0	102	81	125		
Toluene	(0.0551	0.00600	0.0500	0	110	84	123		
Ethylbenzene	(0.0560	0.00600	0.0500	0	112	83	119		
Xylenes, Total		0.168	0.00900	0.150	0	112	81	117		
Surr: a,a,a-Trifluorotoluene		207		200.0		103	87	113		
Sample ID MB-64311	Batch ID:	64311		TestNo:	SW	/8021B		Units:	mg/L	
SampType: MBLK	Run ID:	GC8_1	40624A	Analysis	s Date: 6/2	4/2014 10:50	6:43 AM	Prep Date:	6/24/2	014
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qua
Benzene		ND	0.00200							
Toluene		ND	0.00600							
Ethylbenzene		ND	0.00600							
Xylenes, Total		ND	0.00900							
Surr: a,a,a-Trifluorotoluene		199		200.0		99.6	87	113		
Sample ID 1406203-02AMS	Batch ID:	64311		TestNo:	SW	/8021B		Units:	mg/L	
SampType: MS	Run ID:	GC8_1	40624A	Analysis	s Date: 6/2	4/2014 12:14	4:35 PM	Prep Date:	6/24/2	014
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qua
Benzene		0.0507	0.00200	0.0500	0	101	81	125		
Toluene	(0.0540	0.00600	0.0500	0	108	84	123		
Ethylbenzene	(0.0544	0.00600	0.0500	0	109	83	119		
Xylenes, Total		0.163	0.00900	0.150	0	109	81	117		
Surr: a,a,a-Trifluorotoluene		210		200.0		105	87	113		
Sample ID 1406203-02AMSD	Batch ID:	64311		TestNo:	SW	/8021B		Units:	mg/L	
SampType: MSD	Run ID:	GC8_1	40624A	Analysis	s Date: 6/2	4/2014 12:33	3:53 PM	Prep Date:	6/24/2	014
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qua
Benzene		0.0428	0.00200	0.0500	0	85.6	81	125	16.8	20
Toluene	(0.0457	0.00600	0.0500	0	91.3	84	123	16.7	20
Ethylbenzene	(0.0454	0.00600	0.0500	0	90.9	83	119	18.0	20
Xylenes, Total		0.137	0.00900	0.150	0	91.4	81	117	17.4	20
Surr: a,a,a-Trifluorotoluene		176		200.0		87.8	87	113	0	0

Qualifiers:	В	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 1 of 12
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	e
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	Ν	Parameter not NELAC certified	

CLIENT: Larson & Associates Work Order: 1406204

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

RunID: GC8_140624A

Sample ID ICV-140624	Batch ID:	R73937		TestNo:	SW	8021B		Units:	mg/L
SampType: ICV	Run ID:	GC8_140)624A	Analysis	Date: 6/24	/2014 9:40:	44 AM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit	%RPD RPDLimit Qual
Benzene		0.0977	0.00200	0.100	0	97.7	80	120	
Toluene		0.103	0.00600	0.100	0	103	80	120	
Ethylbenzene		0.104	0.00600	0.100	0	104	80	120	
Xylenes, Total		0.310	0.00900	0.300	0	103	80	120	
Surr: a,a,a-Trifluorotoluene		208		200.0		104	87	113	
Sample ID CCV1-140624	Batch ID:	R73937		TestNo:	SW	8021B		Units:	mg/L
					•				•
SampType: CCV	Run ID:)624A	Analysis		/2014 3:22:	40 PM	Prep Date	-
	Run ID:		0624A RL	Analysis SPK value		/2014 3:22: %REC		•	-
SampType: CCV		GC8_140			Date: 6/24			•	:
SampType: CCV Analyte		GC8_140 Result	RL	SPK value	Date: 6/24 Ref Val	%REC	LowLimi	t HighLimit	:
SampType: CCV Analyte Benzene		GC8_140 Result 0.0489	RL 0.00200	SPK value	5 Date: 6/24 Ref Val	%REC 97.9	LowLimi 80	t HighLimit 120	:
SampType: CCV Analyte Benzene Toluene		GC8_140 Result 0.0489 0.0520	RL 0.00200 0.00600	SPK value 0.0500 0.0500	Date: 6/24 Ref Val 0 0	%REC 97.9 104	LowLimi 80 80	t HighLimit 120 120	:

Qualifiers:

Analyte detected in the associated Method Blank

- J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit
- RL Reporting Limit

В

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit

Page 2 of 12

- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

CLIENT:	Larson &	Associates	3		AN	ALYT	ICAL (DC SI	J MMAR	Y RI	EPORT
Work Orde	er: 1406204				1 1 1			-			
Project:	Legacy Ch	hamberlair	1				RunII	D: I	CP-MS4_1	40620	B
The QC data	in batch 64244 app	lies to the f	ollowing san	nples: 1406	204-01B						
Sample ID	MB-64244	Batch ID:	64244		TestNo:	SW6	6020A		Units:	mg/L	
SampType: N	MBLK	Run ID:	ICP-MS4	_140620B	Analysis	Date: 6/20	/2014 11:32	2:00 AM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Calcium			ND	0.300							
Magnesium			ND	0.300							
Potassium			ND	0.300							
Sodium			ND	0.300							
Sample ID	_CS-64244	Batch ID:	64244		TestNo:	SW6	6020A		Units:	mg/L	
SampType: L	_CS	Run ID:	ICP-MS4	_140620B	Analysis	Date: 6/20	/2014 11:36	6:00 AM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Calcium			4.74	0.300	5.00	0	94.9	80	120		
Magnesium			5.00	0.300	5.00	0	99.9	80	120		
Potassium			5.02	0.300	5.00	0	100	80	120		
Sodium			5.00	0.300	5.00	0	100	80	120		
Sample ID L	_CSD-64244	Batch ID:	64244		TestNo:	SW6	6020A		Units:	mg/L	
SampType: L	CSD	Run ID:	ICP-MS4	_140620B	Analysis	Date: 6/20	/2014 11:38	8:00 AM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Calcium			4.75	0.300	5.00	0	94.9	80	120	0.018	15
Magnesium			4.95	0.300	5.00	0	99.0	80	120	0.939	15
Potassium			5.02	0.300	5.00	0	100	80	120	0.033	15
Sodium			4.98	0.300	5.00	0	99.6	80	120	0.475	15
Sample ID 1	406177-01B SD	Batch ID:	64244		TestNo:	SWe	6020A		Units:	mg/L	
SampType: S	SD	Run ID:	ICP-MS4	_140620B	Analysis	Date: 6/20	/2014 11:46	6:00 AM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Magnesium			34.7	15.0	0	33.0				4.89	10
Potassium			0	15.0	0	2.16				0	10
Sodium			33.0	15.0	0	31.6				4.51	10
Sample ID 1	406177-01B PDS	Batch ID:	64244		TestNo:	SW6	6020A		Units:	mg/L	
SampType: F	PDS	Run ID:	ICP-MS4	_140620B	Analysis	Date: 6/20	/2014 12:05	5:00 PM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Magnesium			97.6	3.00	50.0	33.0	129	80	120		S
Maynesium			97.0	0.00	00.0	00.0	120		.=•		
Potassium			62.6	3.00	50.0	2.16	120	80	120		S

Qualifiers: В Analyte detected in the associated Method Blank DF Dilution Factor Analyte detected between MDL and RL J MDL Method Detection Limit ND Not Detected at the Method Detection Limit R

RL Reporting Limit

J Analyte detected between SDL and RL

RPD outside accepted control limits

Page 3 of 12

S Spike Recovery outside control limits

Ν Parameter not NELAC certified

CLIENT: Larson & Associates

ANALYTICAL QC SUMMARY REPORT

ICP-MS4_140620B

RunID:

Page 4 of 12

Project: Legacy Chamberlain

1406204

Work Order:

1406177-01B MS	Batch ID:	64244		TestNo:	SI	W6020A		Units:	mg/L		
MS	Run ID:	ICP-MS4_	140620B	Analysis	Analysis Date: 6/20/2014 12:07:			Prep Date:	6/19/2	014	
		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %		PDLimit	Qual
		122	3.00	5.00	124	-43.8	80	120			S
		37.7	3.00	5.00	33.0	92.3	80	120			
		6.90	3.00	5.00	2.16	94.7	80	120			
		35.8	3.00	5.00	31.6	84.5	80	120			
1406177-01B MSD	Batch ID:	64244		TestNo:	SI	W6020A		Units:	mg/L		
MSD	Run ID:	ICP-MS4_	140620B	Analysis	3 Date: 6/ 2	20/2014 12:09	:00 PM	Prep Date:	6/19/2	014	
		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %		PDLimit	Qual
		124	3.00	5.00	124	-10.7	80	120	1.35	15	S
		38.4	3.00	5.00	33.0	107	80	120	1.90	15	
		7.04	3.00	5.00	2.16	97.5	80	120	2.01	15	
		36.4	3.00	5.00	31.6	96.0	80	120	1.59	15	
1406177-01B SD	Batch ID:	64244		TestNo:	SI	N6020A		Units:	mg/L		
SD	Run ID:	ICP-MS4_	140620B	Analysis	3 Date: 6/2	20/2014 12:38	:00 PM	Prep Date:	6/19/2	014	
		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %		PDLimit	Qual
		125	75.0	0	122				1.93	10	
1406177-01B PDS	Batch ID:	64244		TestNo:	SI	W6020A		Units:	mg/L		
PDS	Run ID:	ICP-MS4_	140620B	Analysis	3 Date: 6/ 2	20/2014 12:40	:00 PM	Prep Date:	6/19/2	014	
		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit (Qual
		376	15.0	250	123	101	80	120			
	MS 1406177-01B MSD MSD 1406177-01B SD SD 1406177-01B PDS	MS Run ID: 1406177-01B MSD Batch ID: MSD Batch ID: Run ID: Run ID: 1406177-01B SD Batch ID: SD Batch ID: Run ID: Run ID: 1406177-01B SD Batch ID: SD Batch ID: Run ID: Run ID:	MS Run ID: ICP-MS4_ Result 122 37.7 6.90 35.8 1406177-01B MSD Batch ID: 64244 ICP-MS4_ MSD Batch ID: 64244 38.4 7.04 36.4 36.4 36.4 1406177-01B SD Batch ID: 64244 Ger-MS4_ SD Exesult 125 125 1406177-01B PDS Batch ID: 64244 Ger-MS4_ PDS Batch ID: 64244 Ger-MS4_	MS Run ID: ICP-MS4_140620B Result RL 122 3.00 37.7 3.00 6.90 3.00 35.8 3.00 1406177-01B MSD Batch ID: MSD 64244 MSD 64244 MSD Result Run ID: 124 124 3.00 38.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 3.00 36.4 <	MS Run ID: ICP-MS4_140620B Analysis Result RL SPK value 122 3.00 5.00 37.7 3.00 5.00 37.7 3.00 5.00 6.90 3.00 5.00 35.8 3.00 5.00 1406177-01B MSD Batch ID: 64244 TestNo: MSD Run ID: ICP-MS4_140620B Analysis MSD Run ID: ICP-MS4_140620B Analysis MSD Batch ID: 64244 TestNo: MSD Run ID: ICP-MS4_140620B Analysis 124 3.00 5.00 38.4 3.00 5.00 36.4 3.00 5.00 36.4 3.00 5.00 1406177-01B SD Batch ID: 64244 TestNo: SPK value SD Run ID: ICP-MS4_140620B Analysis PDS Batch ID: 64244 TestNo: Run ID: ICP-MS4_140620B Analysis PDS Batch ID: <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/ Result RL SPK value Ref Val 122 3.00 5.00 124 37.7 3.00 5.00 33.0 6.90 3.00 5.00 2.16 35.8 3.00 5.00 31.6 1406177-01B MSD Batch ID: 64244 TestNo: SN MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ 124 3.00 5.00 124 38.4 3.00 5.00 31.6 1406177-01B SD Batch ID: 64244 TestNo: SN SD Run ID: ICP-MS4_140620B Analysis Date: 6/ SD Run ID: ICP-MS4_140620B Analysis Date: 6/ PDS Run ID: 64244 TestNo: SN PDS Batch ID: 6</td> <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07: Result RL SPK value Ref Val %REC 122 3.00 5.00 124 -43.8 37.7 3.00 5.00 33.0 92.3 6.90 3.00 5.00 2.16 94.7 35.8 3.00 5.00 31.6 84.5 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: 124 3.00 5.00 124 -10.7 38.4 3.00 5.00 31.6 96.0 1406177-01B SD Batch ID: 64244 TestNo: SW6020A SD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:38: Result RL SPK value Ref Val</td> <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Result RL SPK value Ref Val %REC LowLimi 122 3.00 5.00 124 -43.8 80 37.7 3.00 5.00 33.0 92.3 80 6.90 3.00 5.00 2.16 94.7 80 35.8 3.00 5.00 31.6 84.5 80 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM 124 3.00 5.00 124 -10.7 80 38.4 3.00 5.00 31.6 96.0 80 1406177-01B SD Batch ID: 64244 TestNo: SW6020A SD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:38:00 PM 1406177-01B SD Batch ID: 64244 TestNo: SW6020A <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: Result RL SPK value Ref Val %REC LowLimit HighLimit % 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 6.90 3.00 5.00 2.16 94.7 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 124 3.00 5.00 32.0 120 38.4 120 38.4 3.00 5.00 31.6 96.0 80 120 1406177-01B SD Batc</td><td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/20 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD Ri 122 3.00 5.00 124 -43.8 80 120 7.7 3.00 5.00 33.0 92.3 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.9</td><td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/2014 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: mg/L MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: RESULt RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit MSD Run ID: ICP-MS4_140620B S.00 33.0 107</td></td>	MS Run ID: ICP-MS4_140620B Analysis Date: 6/ Result RL SPK value Ref Val 122 3.00 5.00 124 37.7 3.00 5.00 33.0 6.90 3.00 5.00 2.16 35.8 3.00 5.00 31.6 1406177-01B MSD Batch ID: 64244 TestNo: SN MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ MSD Run ID: ICP-MS4_140620B Analysis Date: 6/ 124 3.00 5.00 124 38.4 3.00 5.00 31.6 1406177-01B SD Batch ID: 64244 TestNo: SN SD Run ID: ICP-MS4_140620B Analysis Date: 6/ SD Run ID: ICP-MS4_140620B Analysis Date: 6/ PDS Run ID: 64244 TestNo: SN PDS Batch ID: 6	MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07: Result RL SPK value Ref Val %REC 122 3.00 5.00 124 -43.8 37.7 3.00 5.00 33.0 92.3 6.90 3.00 5.00 2.16 94.7 35.8 3.00 5.00 31.6 84.5 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09: 124 3.00 5.00 124 -10.7 38.4 3.00 5.00 31.6 96.0 1406177-01B SD Batch ID: 64244 TestNo: SW6020A SD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:38: Result RL SPK value Ref Val	MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Result RL SPK value Ref Val %REC LowLimi 122 3.00 5.00 124 -43.8 80 37.7 3.00 5.00 33.0 92.3 80 6.90 3.00 5.00 2.16 94.7 80 35.8 3.00 5.00 31.6 84.5 80 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM 124 3.00 5.00 124 -10.7 80 38.4 3.00 5.00 31.6 96.0 80 1406177-01B SD Batch ID: 64244 TestNo: SW6020A SD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:38:00 PM 1406177-01B SD Batch ID: 64244 TestNo: SW6020A <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: Result RL SPK value Ref Val %REC LowLimit HighLimit % 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 6.90 3.00 5.00 2.16 94.7 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 124 3.00 5.00 32.0 120 38.4 120 38.4 3.00 5.00 31.6 96.0 80 120 1406177-01B SD Batc</td> <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/20 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD Ri 122 3.00 5.00 124 -43.8 80 120 7.7 3.00 5.00 33.0 92.3 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.9</td> <td>MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/2014 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: mg/L MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: RESULt RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit MSD Run ID: ICP-MS4_140620B S.00 33.0 107</td>	MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: Result RL SPK value Ref Val %REC LowLimit HighLimit % 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 6.90 3.00 5.00 2.16 94.7 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 124 3.00 5.00 32.0 120 38.4 120 38.4 3.00 5.00 31.6 96.0 80 120 1406177-01B SD Batc	MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/20 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD Ri 122 3.00 5.00 124 -43.8 80 120 7.7 3.00 5.00 33.0 92.3 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.7 80 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.8 120 7.9	MS Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:07:00 PM Prep Date: 6/19/2014 Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit 122 3.00 5.00 124 -43.8 80 120 37.7 3.00 5.00 33.0 92.3 80 120 1406177-01B MSD Batch ID: 64244 TestNo: SW6020A Units: mg/L MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:09:00 PM Prep Date: 6/19/2014 MSD Run ID: RESULt RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit MSD Run ID: ICP-MS4_140620B S.00 33.0 107

Qualifiers:	В	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL I	Reporting Limit	S	Spike Recovery outside control limits
		Analyte detected between SDL and RL	Ν	Parameter not NELAC certified

CLIENT: Larson & Associates Work Order: 1406204

ANALYTICAL QC SUMMARY REPORT

RunID:

ICP-MS4_140620B

Project: Legacy Chamberlain

Ilaindertain								_140020D	
Batch ID:	R73874		TestNo	: SW	6020A		Units:	mg/L	
Run ID:	ICP-MS4_	140620B	Analysi	s Date: 6/20)/2014 11:21	I:00 AM	Prep Date	:	
	Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD RPDLimit Qual	
	2.56	0.300	2.50	0	103	90	110		
	2.74	0.300	2.50	0	110	90	110		
	2.74	0.300	2.50	0	110	90	110		
	2.75	0.300	2.50	0	110	90	110		
Batch ID:	R73874		TestNo	: SW	6020A		Units:	mg/L	
Run ID:	ICP-MS4_	140620B	Analysi	s Date: 6/20)/2014 11:24	4:00 AM	Prep Date		
	Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD RPDLimit Qual	
	0.105	0.300	0.100	0	105	70	130		
	0.109	0.300	0.100	0	109	70	130		
	0.112	0.300	0.100	0	112	70	130		
	0.136	0.300	0.100	0	136	70	130	S	
Batch ID:	R73874		TestNo	: SW	6020A		Units:	mg/L	
Run ID:	ICP-MS4_	140620B	Analysis Date: 6/20/2014 12:11			1:00 PM	PM Prep Date:		
	Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD RPDLimit Qual	
	4.62	0.300	5.00	0	92.5	90	110		
	4.95	0.300	5.00	0	99.0	90	110		
	4.79	0.300	5.00	0	95.8	90	110		
	4.96	0.300	5.00	0	99.1	90	110		
Batch ID:	R73874		TestNo	: SW	6020A		Units:	mg/L	
Run ID:	ICP-MS4_	140620B	Analysi	s Date: 6/20	0/2014 12:18	3:00 PM	Prep Date	::	
	Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD RPDLimit Qual	
	0.102	0.300	0.100	0	102	70	130		
	0.113	0.300	0.100	0	113	70	130		
	0.115	0.300	0.100	0	115	70	130		
	0.122	0.300	0.100	0	122	70	130		
Batch ID:	R73874		TestNo	: SW	6020A		Units:	mg/L	
Run ID:	ICP-MS4_	140620B	Analysi	s Date: 6/20)/2014 12:42	2:00 PM	Prep Date	:	
	Result	RL	SPK value	Ref Val	%REC	LowLimi	it HighLimit	%RPD RPDLimit Qual	
	4.66	0.300	5.00	0	93.2	90	110		
	4.66 4.97	0.300 0.300	5.00 5.00	0 0	93.2 99.4	90 90	110 110		
	Run ID: Batch ID: Run ID: Batch ID: Run ID: Batch ID: Run ID: Batch ID: Run ID:	Run ID: ICP-MS4_ Result 2.56 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.74 2.75 Batch ID: R73874 Run ID: 0.105 0.109 0.112 0.102 0.103 Batch ID: R73874 Run ID: 4.62 4.95 4.79 4.96 4.95 4.79 4.96 Batch ID: R73874 Run ID: ICP-MS4_ 0.102 0.113 0.112 0.102 0.113 0.115 0.122 129	Run ID: ICP-MS4_140620B Result RL 2.56 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.74 0.300 2.75 0.300 2.76 0.300 0.105 0.300 0.105 0.300 0.109 0.300 0.109 0.300 0.112 0.300 0.112 0.300 0.136 0.300 0.136 0.300 4.62 0.300 4.95 0.300 4.96 0.300 4.96 0.300 4.96 0.300 4.95 0.300 4.96 0.300 4.96 0.300 0.102 0.300 0.113 0.300 0.114 0.300 0.115 0.300 0.112	Run ID: ICP-MS4_140620B Analysis Result RL SPK value 2.56 0.300 2.50 2.74 0.300 2.50 2.74 0.300 2.50 2.75 0.300 2.50 Batch ID: R73874 TestNo Run ID: ICP-MS4_140620B Analysis 0.105 0.300 0.100 0.105 0.300 0.100 0.105 0.300 0.100 0.105 0.300 0.100 0.105 0.300 0.100 0.112 0.300 0.100 0.112 0.300 0.100 0.105 0.300 0.100 Batch ID: R73874 TestNo Run ID: ICP-MS4_140620B Snol 4.62 0.300 5.00 4.95 0.300 5.00 4.96 0.300 5.00 4.96 0.300 5.00 4.96 0.300 5.00 4.96 0.300 0.100 0.113	Run ID: ICP-MS4_140620B Analysis Date: 6/20 Result RL SPK value Ref Value 2.56 0.300 2.50 0 2.74 0.300 2.50 0 2.74 0.300 2.50 0 2.74 0.300 2.50 0 2.75 0.300 2.50 0 Batch ID: R73874 TestNo: SW Run ID: ICP-MS4_140620B Analysis Date: 6/20 0.105 0.300 0.100 0 0.105 0.300 0.100 0 0.105 0.300 0.100 0 0.109 0.300 0.100 0 0.112 0.300 0.100 0 0.112 0.300 0.100 0 Batch ID: R73874 TestNo: SW Run ID: ICP-MS4_140620B Analysis Date: 6/20 Batch ID: R73874 TestNo: SW Run ID: ICP-MS4_140620B Analysis Date: 6/20 Batch ID: R73874 TestNo: SW<	Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:24 Result RL SPK value Ref Val %REC 2.56 0.300 2.50 0 103 2.74 0.300 2.50 0 110 2.75 0.300 2.50 0 110 2.75 0.300 2.50 0 110 Batch ID: R73874 TestNo: SW60204 Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:24 0.105 0.300 0.100 0 105 0.105 0.300 0.100 0 105 0.105 0.300 0.100 0 112 0.105 0.300 0.100 0 112 0.102 0.300 0.100 0 112 0.112 0.300 0.100 0 112 0.136 0.300 5.00 0 92.5 Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 12:12 12 Batch ID: R73874 TestNo: SW6020A <t< td=""><td>Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:21:00 AM Result RL SPK value Ref Val %REC LowLind 2.56 0.300 2.50 0 103 90 2.74 0.300 2.50 0 100 90 2.74 0.300 2.50 0 110 90 2.75 0.300 2.50 0 110 90 Batch ID: R73874 TestNo: SW602U14 11:24:00 AM MREC LowLind Run ID: ICP-MS4_140620B Analysis Date: 6/20/2U14 11:24:00 AM 70 70 70 0.105 0.300 0.100 0 105 70 0.112 0.300 0.100 0 105 70 0.112 0.300 0.100 0 112 70 0.112 0.300 0.100 0 136 70 0.112 0.300 0.100 0 128 70 0.112 0.300 0.100 0 90 90 4.62 0.300</td><td>Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:21:00 AM Prep Date Result RL SPK value Ref Val $\%$REC LowLimit HighLimit 2.56 0.300 2.50 0 103 90 110 2.74 0.300 2.50 0 110 90 110 2.74 0.300 2.50 0 110 90 110 2.75 0.300 2.50 0 110 90 110 2.75 0.300 2.50 0 110 90 110 Batch ID: R73874 TestNo: SW6020A Units: Prep Date Result RL SPK value Ref Val %REC LowLimit HighLimit 0.105 0.300 0.100 0 105 70 130 0.112 0.300 0.100 0 112 70 130 0.112 0.300 0.100 0 112 70 130 0.112 0.300 0.100 0 122 70 130</td></t<>	Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:21:00 AM Result RL SPK value Ref Val %REC LowLind 2.56 0.300 2.50 0 103 90 2.74 0.300 2.50 0 100 90 2.74 0.300 2.50 0 110 90 2.75 0.300 2.50 0 110 90 Batch ID: R73874 TestNo: SW602U14 11:24:00 AM MREC LowLind Run ID: ICP-MS4_140620B Analysis Date: 6/20/2U14 11:24:00 AM 70 70 70 0.105 0.300 0.100 0 105 70 0.112 0.300 0.100 0 105 70 0.112 0.300 0.100 0 112 70 0.112 0.300 0.100 0 136 70 0.112 0.300 0.100 0 128 70 0.112 0.300 0.100 0 90 90 4.62 0.300	Run ID: ICP-MS4_140620B Analysis Date: 6/20/2014 11:21:00 AM Prep Date Result RL SPK value Ref Val $\%$ REC LowLimit HighLimit 2.56 0.300 2.50 0 103 90 110 2.74 0.300 2.50 0 110 90 110 2.74 0.300 2.50 0 110 90 110 2.75 0.300 2.50 0 110 90 110 2.75 0.300 2.50 0 110 90 110 Batch ID: R73874 TestNo: SW6020A Units: Prep Date Result RL SPK value Ref Val %REC LowLimit HighLimit 0.105 0.300 0.100 0 105 70 130 0.112 0.300 0.100 0 112 70 130 0.112 0.300 0.100 0 112 70 130 0.112 0.300 0.100 0 122 70 130	

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

D Not Detected at the Method Detection Lin

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDLMethod Detection LimitRRPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAC certified

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CLIENT: Larson & Associates Work Order: 1406204 **Project:** Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID:

ICP-MS4_140620B

Sample ID LCVL2-140620	Batch ID:	R73874		TestNo	swe	6020A		Units:	mg/L
SampType: LCVL	Run ID:	ICP-MS4_	_140620B	Analysi	s Date: 6/20	/2014 12:47	:00 PM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qual
Calcium		0.104	0.300	0.100	0	104	70	130	
Magnesium		0.114	0.300	0.100	0	114	70	130	
Potassium		0.111	0.300	0.100	0	111	70	130	
Sodium		0.109	0.300	0.100	0	109	70	130	

Qualifiers:

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND

- Not Detected at the Method Detection Limit
- RL Reporting Limit

В

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit

Page 6 of 12

- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- Ν Parameter not NELAC certified

CLIENT: Work Order:	Larson & 1406204	Associates	8		ANALYTICAL QC SUMMARY REPORT							
Project:		hamberlair	n				RunII): I	[C_140619	A		
The QC data in ba	•••			oles: 1406	6204-01C							
Sample ID MB-6		Batch ID:			TestNo	E30	0		Units:	mg/L		
SampType: MBLI		Run ID:	IC_140619	Α	Analysi	s Date: 6/19	/2014 9:53:	27 AM	Prep Date:	6/19/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	6RPD R	PDLimit Qual	
Chloride			ND	1.00								
Nitrate-N			ND	0.500								
Sulfate			ND	3.00								
Sample ID LCS-	64235	Batch ID:	64235		TestNo	E30	0		Units:	mg/L		
SampType: LCS		Run ID:	IC_140619	Α	Analysi	s Date: 6/19	/2014 10:08	3:04 AM	Prep Date:	6/19/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	6RPD R	PDLimit Qual	
Chloride			10.0	1.00	10.00	0	100	90	110			
Nitrate-N			4.98	0.500	5.000	0	99.6	90	110			
Sulfate			30.2	3.00	30.00	0	101	90	110			
Sample ID LCSE	0-64235	Batch ID:	64235		TestNo	E30	0		Units:	mg/L		
SampType: LCSE)	Run ID:	IC_140619	Α	Analysi	s Date: 6/19	/2014 10:22	2:40 AM	Prep Date:	6/19/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual	
Chloride			9.94	1.00	10.00	0	99.4	90	110	0.932	20	
Nitrate-N			4.92	0.500	5.000	0	98.5	90	110	1.16	20	
Sulfate			29.8	3.00	30.00	0	99.5	90	110	1.25	20	
Sample ID 14061	179-01AMS	Batch ID:	64235		TestNo	E30	0		Units:	mg/L		
SampType: MS		Run ID:	IC_140619	Α	Analysi	s Date: 6/19	/2014 1:25:	10 PM	Prep Date:	6/19/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual	
Chloride			2320	100	2000	384.8	96.6	90	110			
Nitrate-N			429	50.0	451.6	0	94.9	90	110			
Sulfate			4210	300	2000	2180	102	90	110			
Sample ID 14061	179-01AMSD	Batch ID:	64235		TestNo	E30	0		Units:	mg/L		
SampType: MSD		Run ID:	IC_140619	Α	Analysi	s Date: 6/19	/2014 1:39:	47 PM	Prep Date:	6/19/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	nit HighLimit %	6RPD R	PDLimit Qual	
Chloride			2300	100	2000	384.8	95.7	90	110	0.760	20	
Nitrate-N			424	50.0 200	451.6	0	93.9	90	110	1.02	20	
Sulfate			4190	300	2000	2180	101	90	110	0.390	20	
Sample ID 14062	200-02AMS	Batch ID:	64235		TestNo	E30	0		Units:	mg/L		
SampType: MS		Run ID:	IC_140619	A	Analysi	s Date: 6/19	/2014 1:54:	23 PM	Prep Date:	6/19/2	014	

Qualifiers:

CLIENT:

Larson & Associates

- В Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit R RPD outside accepted control limits
 - S Spike Recovery outside control limits
 - Ν Parameter not NELAC certified

ANALYTICAL QC SUMMARY REPORT

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CLIENT: Larson & Associates Work Order: 1406204

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

RunID: IC_140619A

Sample ID	1406200-02AMS	Batch ID:	64235		TestNo:	E300)		Units:	mg/L	
SampType:	MS	Run ID:	IC_14061	9A	Analysis	s Date: 6/19/	/2014 1:54:	23 PM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	HighLimit	%RPD R	PDLimit Qual
Chloride			2190	100	2000	256.3	96.8	90	110		
Nitrate-N			418	50.0	451.6	0	92.6	90	110		
Sulfate			4180	300	2000	2271	95.5	90	110		
Sample ID	1406200-02AMSD	Batch ID:	64235		TestNo:	E300)		Units:	mg/L	
SampType:	MSD	Run ID:	IC_14061	9A	Analysis	s Date: 6/19/	/2014 2:08:	59 PM	Prep Date:	6/19/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	HighLimit	%RPD R	PDLimit Qual
Chloride			2200	100	2000	256.3	97.3	90	110	0.472	20
Nitrate-N			420	50.0	451.6	0	93.0	90	110	0.408	20
Sulfate			4190	300	2000	2271	95.7	90	110	0.113	20

Qualifiers:

Analyte detected in the associated Method Blank

- J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit
- RL Reporting Limit

В

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit

Page 8 of 12

- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- N Parameter not NELAC certified

CLIENT: Larson & Associates Work Order: 1406204

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

RunID: IC_140619A

Sample ID	ICV-140619	Batch ID:	R73863		TestNo	: E30	0		Units:	mg/L	
SampType:	ICV	Run ID:	IC_140	619A	Analysi	s Date: 6/19	/2014 9:36:	24 AM	Prep Date	e :	
Analyte		l	Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RP	DLimit Qual
Chloride			25.2	1.00	25.00	0	101	90	110		
Nitrate-N			12.5	0.500	12.50	0	99.9	90	110		
Sulfate			75.2	3.00	75.00	0	100	90	110		
Sample ID	CCV1-140619	Batch ID:	R73863		TestNo	: E30	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC_140	619A	Analysi	s Date: 6/19	/2014 2:23:	36 PM	Prep Date	e:	
Analyte		I	Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RP	DLimit Qual
Chloride			9.99	1.00	10.00	0	99.9	90	110		
Nitrate-N			4.91	0.500	5.000	0	98.3	90	110		
Sulfate			30.0	3.00	30.00	0	100	90	110		
Sample ID	CCV2-140619	Batch ID:	R73863		TestNo	E30	0		Units:	mg/L	
SampType:	CCV	Run ID:	IC_140	619A	Analysi	s Date: 6/19	/2014 5:04:	02 PM	Prep Date	e:	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RP	DLimit Qual
Chloride			9.85	1.00	10.00	0	98.5	90	110		
Nitrate-N			4.87	0.500	5.000	0	97.4	90	110		
Sulfate			29.4	3.00	30.00	0	97.9	90	110		

B Analyte detected in the associated Method BlankJ Analyte detected between MDL and RL

- J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDLMethod Detection LimitRRPD outside accepted control limits

Page 9 of 12

- S Spike Recovery outside control limits
- N Parameter not NELAC certified

CLIENT:	Larson & .	Associates			AN	ALYTI	CAL C)C SI	IMMAR	RY R	EPORT
Work Order:	1406204										
Project:	Legacy Ch	amberlain					RunID):]	TTRATO	R_140	624B
The QC data in bat	ch 64317 app	lies to the fo	llowing sam	oles: 14062	204-01C						
Sample ID MB-64	317	Batch ID:	64317		TestNo:	M232	20 B		Units:	mg/L	@ pH 4.48
SampType: MBLK		Run ID:	TITRATOR	L_140624B	Analysis	s Date: 6/24/	2014 10:14	:00 AM	Prep Date:	6/24/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Alkalinity, Bicarbon	ate (As CaCO	3)	ND	20.0							
Alkalinity, Carbonat	e (As CaCO3)	ND	20.0							
Alkalinity, Hydroxide	e (As CaCO3)		ND	20.0							
Alkalinity, Total (As	CaCO3)		ND	20.0							
Sample ID LCS-6	4317	Batch ID:	64317		TestNo:	M232	20 B		Units:	mg/L	@ pH 4.36
SampType: LCS		Run ID:	TITRATOR	R_140624B	Analysis	8 Date: 6/24/	2014 10:18	:00 AM	Prep Date:	6/24/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Alkalinity, Total (As	CaCO3)		53.0	20.0	50.00	0	106	74	129		
Sample ID 14062	04-01C DUP	Batch ID:	64317		TestNo:	M232	20 B		Units:	mg/L	@ pH 4.51
SampType: DUP		Run ID:	TITRATOR	L_140624B	Analysis	s Date: 6/24/	2014 10:55	:00 AM	Prep Date:	6/24/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qual
Alkalinity, Bicarbon	ate (As CaCO	3)	352	20.0	0	352.8				0.170	20
Alkalinity, Carbonat	e (As CaCO3)	0	20.0	0	0				0	20
Alkalinity, Hydroxide	e (As CaCO3)	1	0	20.0	0	0				0	20
Alkalinity, Total (As	CaCO3)		352	20.0	0	352.8				0.170	20

Qualifiers:	В	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 10 of 12
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	U
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	Ν	Parameter not NELAC certified	

CLIENT: Work Order:	Larson & A 1406204	Associates			AN	ALYTI	CAL (QC SI	UMMAR	Y REPORT
Project:	Legacy Ch	amberlain	l				RunII): [FITRATO	R_140624B
Sample ID ICV-14	0624	Batch ID:	R73925		TestNo:	M23	20 B		Units:	mg/L @ pH 4.4
SampType: ICV		Run ID:	TITRATO	R_140624B	Analysis	a Date: 6/24/	2014 9:59:	00 AM	Prep Date:	6/24/2014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	RPD RPDLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	5.52	20.0	0					
Alkalinity, Carbonat	e (As CaCO3))	93.3	20.0	0					
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0					
Alkalinity, Total (As	CaCO3)		98.8	20.0	100.0	0	98.8	98	102	
Sample ID CCV1-	140624	Batch ID:	R73925		TestNo:	M232	20 B		Units:	mg/L @ pH 4.19
SampType: CCV		Run ID:	TITRATO	R_140624B	Analysis	a Date: 6/24/	/2014 11:08	8:00 AM	Prep Date:	6/24/2014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	RPD RPDLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	5.84	20.0	0					
Alkalinity, Carbonat	e (As CaCO3))	97.4	20.0	0					
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0					
Alkalinity, Total (As	CaCO3)		103	20.0	100.0	0	103	90	110	
Sample ID CCV2-	140624	Batch ID:	R73925		TestNo:	M232	20 B		Units:	mg/L @ pH 4.06
SampType: CCV		Run ID:	TITRATO	R_140624B	Analysis	a Date: 6/24/	/2014 12:06	6:00 PM	Prep Date:	6/24/2014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	iit HighLimit %	RPD RPDLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	9.68	20.0	0					
Alkalinity, Carbonat	e (As CaCO3))	95.5	20.0	0					
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0					
Alkalinity, Total (As	CaCO3)		105	20.0	100.0	0	105	90	110	

Qualifiers:	В	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 11 of 12
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	0
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	Ν	Parameter not NELAC certified	

CLIENT: Work Order:	Larson & . 1406204	Associates			AN	ALYT	ICAL (QC S	UMMAR	Y RE	PORT
Project:	Legacy Ch	namberlain					RunII	D:	WC_140619	9D	
The QC data in bat	ch 64196 app	lies to the fo	llowing sam	ples: 1406	204-01C						
Sample ID MB-64	196	Batch ID:	64196		TestNo:	M25	40C		Units:	mg/L	
SampType: MBLK		Run ID:	WC_1406	19D	Analysis	s Date: 6/20	/2014 9:15:	00 AM	Prep Date:	6/19/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	nit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	ND	10.0							
Sample ID LCS-6	4196	Batch ID:	64196		TestNo:	M25	40C		Units:	mg/L	
SampType: LCS		Run ID:	WC_1406	19D	Analysis	a Date: 6/20	/2014 9:15:	00 AM	Prep Date:	6/19/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	mit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	763	10.0	745.6	0	102	90	113		
Sample ID 14061	97-02A-DUP	Batch ID:	64196		TestNo:	M25	40C		Units:	mg/L	
SampType: DUP		Run ID:	WC_1406	19D	Analysis	a Date: 6/20	/2014 9:15:	00 AM	Prep Date:	6/19/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	mit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	3070	50.0	0	3085				0.487	5

Qualifiers:

В

Analyte detected in the associated Method Blank Analyte detected between MDL and RL

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits Page 12 of 12

S Spike Recovery outside control limits

N Parameter not NELAC certified

22



March 19, 2014

Coty Woolf Larson & Associates 507 N. Marienfeld #200 Midland, TX 79701 TEL: (432) 687-0901 FAX (432) 687-0456 RE: Legacy Chamberlain

Order No.: 1403093

Dear Coty Woolf:

DHL Analytical, Inc. received 2 sample(s) on 3/12/2014 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAC except where noted in the Case Narrative. All non-NELAC methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

John DuPont General Manager

This report was performed under the accreditation of the State of Texas Laboratory Certification Number: T104704211-13-11



2300 Double Creek Drive • Round Rock, TX 78664 • Phone (512) 388-8222 • FAX (512) 388-8229 www.dhlanalytical.com

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AnalyticalQCSummaryReport 1403093	

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Data Reported to:				O/F						—						<u>"-</u>	-		7	7	75	7	7		70	7	<u> </u>	70	77	7		Υ.	$\overline{77}$	7
TRRP report?	S=SOIL W≃WATE A=AIR	⁽ P=PA R SL=S - OT=C	LUDGE		ainers	PR		NaUH L						N N N	12 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0										13 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		C C C C C C C C C C C C C C C C C C C					× / /		
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LIMIT OF LIABILITY: We are not responsible to teams in the actual loss. We are not liable for any special or consequential damages. Advintance minimums over the actual loss of the actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams and the actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams and the actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams actual actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams actual loss. We are not liable for any special or consequential damages. Advintance will be obtained for LIME to teams actual loss. We are not liable for any special or consequential damages. Advint of teams actual loss. We are not liable for any special or consequential damages. Advintance will be obtained actual loss. We are not liable for any special provided service. No Extreme service and the service of teams and the service of teams and the service actual teams and the service actual teams and the service actual teams and teams actual teams and teams actual teams and teams actual teams and teams actual teams are service. No Extreme for teams actual teams are service actual teams and teams are service actual teams and teams are service. The service actual teams are service actual teams are service actual teams are service. The service actual team actual team actual team actual team actual teams are service. The service actual team actual tea

Sample	Receipt	Checklist
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Client Name Larson & Associates			Date Rece	ived:	3/12/2014	
Work Order Number 1403093			Received b	y JB		
				·	`	
Checklist completed by:	3/12/20	1.4	Deviewent	(ID)	
Signature	Date	· ····································	Reviewed b	Inittais	3/12	2/2014 Date
	Carrier name	<u>LoneStar</u>			I	
		<u>Loncotar</u>				
Shipping container/cooler in good condition?		Yes 🗹	No 🗌	Not Presen	t 🗌	
Custody seals intact on shippping container/co	ooler?	Yes 🗌	No 🗔	Not Presen	t 🗹	
Custody seals intact on sample bottles?		Yes 🗌	No 🗔	Not Presen	t 🗹	
Chain of custody present?		Yes 🔽	No 🗔			
Chain of custody signed when relinquished and	d received?	Yes 🗹	No 🗔			
Chain of custody agrees with sample labels?		Yes 🗹 🗋	No 🗔			
Samples in proper container/bottle?		Yes 🗹	No 🗔			
Sample containers intact?		Yes 🔽	No 🗌			
Sufficient sample volume for indicated test?		Yes 🗹	No 🗌			
All samples received within holding time?		Yes 🔽	Νο			
Container/Temp Blank temperature in complian	nce?	Yes 🔽	No 🗌	1.5 °C		
Water - VOA vials have zero headspace?		Yes 🗹	_	No VOA vials	submitted	
Water - pH<2 acceptable upon receipt?		Yes 🗹		[]	OT# 7179	
		Adjusted?	دىز	Checked t	~	
Water - ph>9 (S) or ph>12 (CN) acceptable upo	on receipt?	Yes 🗌	No 🗌		от#	
		Adjusted?		Checked b		
Any No response must be detailed in the comm	ents section below.				······	
 Client contacted	Date contacted:					
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Contacted by:	Regarding	· · · · · · · · · · · · · · · · · · ·				
Comments:						
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Corrective Action						
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CLIENT:Larson & AssociatesProject:Legacy ChamberlainLab Order:1403093

CASE NARRATIVE

Sample was analyzed using the methods outlined in the following references:

Method E300 - Anions Analysis Method SW8021B - Volatile Organics by GC Analysis Method SW6020A - Metals Analysis Method M2540C - Total Dissolved Solids Analysis Method M2320 B - Alkalinity Analysis

LOG IN

The samples were received and log-in performed on 3/12/14. A total of 2 samples were received. The Time of Collection was Mountain Standard Time. The samples arrived in good condition and were properly packaged.

ANIONS ANALYSIS

For Anions analysis performed on 3/12/14 the matrix spike duplicate recovery was below control limits for Nitrate-N. This is flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was from this work order. The LCS was within control limits for this analyte. No further corrective actions were taken.

METALS ANALYSIS

For Metals analysis performed on 3/13/14 the matrix spike and matrix spike duplicate recoveries were below control limits for Calcium and Sodium. These are flagged accordingly in the QC summary report. The reference sample selected for the matrix spike and matrix spike duplicate was not from this work order. The LCS was within control limits for these analytes. No further corrective actions were taken.

Date: 19-Mar-14

03/11/14

3/12/2014

CLIENT: Project: Lab Order:	Larson & Associates Legacy Chamberlain 1403093		Work Order Sample	Summary
Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
1403093-01 N	MW-1		03/11/14 02:00 PM	3/12/2014

1403093-02 Trip Blank

1403093

Larson & Associates

Legacy Chamberlain

Lab Order:

Client:

Project:

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
1403093-01A	MW-1	03/11/14 02:00 PM	Aqueous	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322
1403093-01B	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
	MW-1	03/11/14 02:00 PM	Aqueous	SW3005A	Aq Prep Metals : ICP-MS	03/13/14 08:24 AM	62314
403093-01C	MW-1	03/11/14 02:00 PM	Aqueous	M2320 B	Alkalinity Preparation	03/12/14 01:14 PM	62313
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
	MW-1	03/11/14 02:00 PM	Aqueous	E300	Anion Preparation	03/12/14 09:45 AM	62308
1403093-01D	MW-1	03/11/14 02:00 PM	Aqueous	M2540C	TDS Preparation	03/13/14 01:13 PM	62325
403093-02A	Trip Blank	03/11/14	Trip Blank	SW5030C	Purge and Trap Water GC	03/13/14 10:13 AM	62322

Lab Order: 1403093 **Client:**

Larson & Associates

Project: Legacy Chamberlain

ANALYTICAL DATES REPORT

	e ,							
Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
1403093-01A	MW-1	Aqueous	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:31 PM	GC8_140313A
1403093-01B	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	50	03/13/14 04:17 PM	ICP-MS3_140313A
	MW-1	Aqueous	SW6020A	Trace Metals: ICP-MS - Water	62314	1	03/13/14 03:29 PM	ICP-MS3_140313A
1403093-01C	MW-1	Aqueous	M2320 B	Alkalinity	62313	1	03/12/14 02:16 PM	TITRATOR_140312A
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	1	03/12/14 11:49 AM	IC_140312B
	MW-1	Aqueous	E300	Anions by IC method - Water	62308	10	03/12/14 11:00 AM	IC_140312B
1403093-01D	MW-1	Aqueous	M2540C	Total Dissolved Solids	62325	1	03/14/14 08:40 AM	WC_140313A
1403093-02A	Trip Blank	Trip Blank	SW8021B	Volatile Organics by GC	62322	1	03/13/14 12:11 PM	GC8_140313A

	J											
CLIENT:	Larson & Associates			Cli	ent Sample ID: MW-	-1						
Project:	Legacy Chamberlain				Lab ID: 1403	093-01						
Project No:	12-0126-01			С	Collection Date: 03/11/14 02:00 PM							
Lab Order:	1403093				Matrix: AQU	EOUS						
Analyses		Result	MDL	RL	Qual Units	DF	Date Analyzed					
	GANICS BY GC		SW80)21B			Analyst: AV					
Benzene		ND	0.000800	0.00200	mg/L	1	03/13/14 12:31 PM					
Ethylbenzene		ND	0.00200	0.00600	mg/L	1	03/13/14 12:31 PM					
Toluene		ND	0.00200	0.00600	mg/L	1	03/13/14 12:31 PM					
Xylenes, Total		ND	0.00300	0.00900	mg/L	1	03/13/14 12:31 PM					
Surr: a,a,a-Ti	rifluorotoluene	105	0	87-113	%REC	1	03/13/14 12:31 PM					
TRACE METAL	S: ICP-MS - WATER		SW60	20A			Analyst: SW					
Calcium		361	5.00	15.0	mg/L	50	03/13/14 04:17 PM					
Magnesium		14.1	0.100	0.300	mg/L	1	03/13/14 03:29 PM					
Potassium		3.05	0.100	0.300	mg/L	1	03/13/14 03:29 PM					
Sodium		196	5.00	15.0	mg/L	50	03/13/14 04:17 PM					
ANIONS BY IC	METHOD - WATER		E3	00			Analyst: JBC					
Chloride		147	3.00	10.0	mg/L	10	03/12/14 11:00 AM					
Nitrate-N		1.96	0.100	0.500	mg/L	1	03/12/14 11:49 AM					
Sulfate		93.8	10.0	30.0	mg/L	10	03/12/14 11:00 AM					
ALKALINITY			M232	20 B			Analyst: LM					
Alkalinity, Bicar	bonate (As CaCO3)	294	10.0	20.0	mg/L @ pH 4	.51 1	03/12/14 02:16 PM					
Alkalinity, Carbo	onate (As CaCO3)	ND	10.0	20.0	mg/L @ pH 4	.51 1	03/12/14 02:16 PM					
Alkalinity, Hydro	oxide (As CaCO3)	ND	10.0	20.0	mg/L @ pH 4	.51 1	03/12/14 02:16 PM					
Alkalinity, Total	(As CaCO3)	294	20.0	20.0	mg/L @ pH 4	.51 1	03/12/14 02:16 PM					
TOTAL DISSO	LVED SOLIDS		M254	40C			Analyst: MK					
Total Dissolved Filterable)	Solids (Residue,	798	10.0	10.0	mg/L	1	03/14/14 08:40 AM					

Qualifiers:

* Value exceeds TCLP Maximum Concentration Level

- C Sample Result or QC discussed in the Case Narrative
- E TPH pattern not Gas or Diesel Range Pattern
- MDL Method Detection Limit

RL Reporting Limit

N Parameter not NELAC certified

- B Analyte detected in the associated Method Blank
- DF Dilution Factor
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit

S Spike Recovery outside control limits

Surr: a,a,a-Trifluorotoluene

Date: 19-Mar-14

1

03/13/14 12:11 PM

CLIENT:	Larson & Associates	s Client Sample ID: Trip Blank									
Project:	Legacy Chamberlain				L	ab ID: 1403	093-02				
Project No:	12-0126-01			C	ollectior	Date: 03/1	1/14				
Lab Order:	1403093				Ν	fatrix: TRIF	P BLANK				
Analyses		Result	MDL	RL	Qual	Units	DF	Date Analyzed			
VOLATILE OR	GANICS BY GC		SW80	021B				Analyst: AV			
Benzene		ND 0.000800 0.00200 mg/L		mg/L	1	03/13/14 12:11 PM					
Ethylbenzene		ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM			
Toluene		ND	0.00200	0.00600		mg/L	1	03/13/14 12:11 PM			
Xylenes, Total		ND	0.00300	0.00900		mg/L	1	03/13/14 12:11 PM			

0

87-113

%REC

104

Qualifiers:

- * Value exceeds TCLP Maximum Concentration Level
- C Sample Result or QC discussed in the Case Narrative
- E TPH pattern not Gas or Diesel Range Pattern
- MDL Method Detection Limit
- RL Reporting Limit
- N Parameter not NELAC certified

- B Analyte detected in the associated Method Blank
- DF Dilution Factor
- J Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- S Spike Recovery outside control limits

CLIENT:	Larson & .	Associates	5		AN	JALYT	ICAL (OC SI	J MMAF	RY R	EPORT
Work Order:	1403093				111			20 DC			
Project:	Legacy Ch	namberlain	l				RunII	D: (GC8_1403	13A	
The QC data in bat	ch 62322 app	lies to the fo	ollowing	samples: 1403	093-01A, 1403	093-02A					
Sample ID LCS-6	2322	Batch ID:	62322		TestNo	: SW	8021B		Units:	mg/L	
SampType: LCS		Run ID:	GC8_	140313A	Analysi	is Date: 3/13	3/2014 10:43	3:12 AM	Prep Date:	3/13/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qu
Benzene			0.0511	0.00200	0.0500	0	102	81	125		
Toluene			0.0532	0.00600	0.0500	0	106	84	123		
Ethylbenzene			0.0537	0.00600	0.0500	0	107	83	119		
Xylenes, Total			0.160	0.00900	0.150	0	107	81	117		
Surr: a,a,a-Triflu	orotoluene		207		200.0		103	87	113		
Sample ID MB-62	322	Batch ID:	62322		TestNo	: SW	8021B		Units:	mg/L	
SampType: MBLK		Run ID:	GC8_′	140313A	Analysi	is Date: 3/13	3/2014 11:23	3:14 AM	Prep Date:	3/13/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qu
Benzene			ND	0.00200							
Toluene			ND	0.00600							
Ethylbenzene			ND	0.00600							
Xylenes, Total			ND	0.00900							
Surr: a,a,a-Triflu	orotoluene		209		200.0		105	87	113		
Sample ID 14030	93-01AMS	Batch ID:	62322		TestNo	: SW	8021B		Units:	mg/L	
SampType: MS		Run ID:	GC8_′	140313A	Analysi	is Date: 3/13	3/2014 12:51	1:12 PM	Prep Date:	3/13/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Qu
Benzene			0.0475	0.00200	0.0500	0	95.0	81	125		
Toluene			0.0488	0.00600	0.0500	0	97.6	84	123		
Ethylbenzene			0.0493	0.00600	0.0500	0	98.7	83	119		
Xylenes, Total			0.147	0.00900	0.150	0	98.1	81	117		
Surr: a,a,a-Triflu	orotoluene		190		200.0		94.9	87	113		
Sample ID 14030	93-01AMSD	Batch ID:	62322		TestNo	: SW	8021B		Units:	mg/L	
SampType: MSD		Run ID:	GC8_′	140313A	Analysi	is Date: 3/13	8/2014 1:11:	15 PM	Prep Date:	3/13/2	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD R	PDLimit Q
Benzene			0.0512	0.00200	0.0500	0	102	81	125	7.62	20
Toluene			0.0532	0.00600	0.0500	0	106	84	123	8.60	20
Ethylbenzene			0.0533	0.00600	0.0500	0	107	83	119	7.78	20
Xylenes, Total			0.159	0.00900	0.150	0	106	81	117	8.09	20

Qualifiers: В Analyte detected in the associated Method Blank DF Dilution Factor Analyte detected between MDL and RL MDL Method Detection Limit J Page 1 of 12 ND Not Detected at the Method Detection Limit R RPD outside accepted control limits RL Reporting Limit S Spike Recovery outside control limits J Analyte detected between SDL and RL Ν Parameter not NELAC certified

CLIENT: Larson & Associates Work Order: 1403093

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

RunID: GC8_140313A

Sample ID ICV-140313	Batch ID:	R71771		TestNo:	SW8	3021B		Units:	mg/L
SampType: ICV	Run ID:	GC8_14	0313A	Analysis	Date: 3/13	/2014 9:47:	19 AM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit	%RPD RPDLimit Qual
Benzene		0.104	0.00200	0.100	0	104	80	120	
Toluene		0.107	0.00600	0.100	0	107	80	120	
Ethylbenzene		0.107	0.00600	0.100	0	107	80	120	
Xylenes, Total		0.322	0.00900	0.300	0	107	80	120	
Surr: a,a,a-Trifluorotoluene		214		200.0		107	87	113	
Sample ID CCV1-140313	Batch ID:	R71771		TestNo:	SW8	3021B		Units:	mg/L
SampType: CCV	Run ID:	GC8_14	0313A	Analysis	Date: 3/13	/2014 2:08:	36 PM	Prep Date	:
SampType: CCV Analyte		GC8_14	0313A RL	Analysis SPK value	Date: 3/13 Ref Val	/2014 2:08: %REC		· ·	: %RPD RPDLimit Qual
		_						· ·	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit	
Analyte Benzene		 Result 0.0502	RL 0.00200	SPK value	Ref Val	%REC 100	LowLimi 80	t HighLimit 120	
Analyte Benzene Toluene		Result 0.0502 0.0524	RL 0.00200 0.00600	SPK value 0.0500 0.0500	Ref Val 0 0	%REC 100 105	LowLimi 80 80	t HighLimit 120 120	

Qualifiers:

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

D Not Detected at the Method Detection Limit

RL Reporting Limit

В

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

Page 2 of 12

- R RPD outside accepted control limits
- S Spike Recovery outside control limits

N Parameter not NELAC certified

CLIENT:		Associates			AN	ALYT	ICAL (DC SU	U MMAR	Y RF	EPORT
Work Order:	1403093							-			
Project:		namberlain			002.04 D		RunII): 1	CP-MS3_1	140313	A
The QC data in b				imples: 1403							
Sample ID MB-		Batch ID:	62314		TestNo		6020A		Units:	mg/L	
SampType: MBL	K	Run ID:	ICP-MS	3_140313A	Analys	is Date: 3/13	/2014 2:47:	00 PM	Prep Date:	3/13/20	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	SRPD RF	PDLimit Qual
Calcium			ND	0.300							
Magnesium			ND	0.300							
Potassium			ND	0.300							
Sodium			ND	0.300							
Sample ID LCS	-62314	Batch ID:	62314		TestNo	: SW	6020A		Units:	mg/L	
SampType: LCS		Run ID:	ICP-MS	3_140313A	Analys	is Date: 3/13	/2014 2:53:	00 PM	Prep Date:	3/13/20	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %		PDLimit Qual
Calcium			5.26	0.300	5.00	0	105	80	120		
Magnesium			5.01	0.300	5.00	0	100	80	120		
Potassium			5.32	0.300	5.00	0	106	80	120		
Sodium			5.10	0.300	5.00	0	102	80	120		
Sample ID LCS	D-62314	Batch ID:	62314		TestNo	: SW	6020A		Units:	mg/L	
SampType: LCS	D	Run ID:	ICP-MS	3_140313A	Analys	is Date: 3/13	/2014 2:59:	00 PM	Prep Date:	3/13/20)14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %		PDLimit Qual
Calcium			5.19	0.300	5.00	0	104	80	120	1.28	15
Magnesium			4.91	0.300	5.00	0	98.2	80	120	1.92	15
Potassium			5.17	0.300	5.00	0	103	80	120	2.84	15
Sodium			5.00	0.300	5.00	0	99.9	80	120	1.98	15
Sample ID 1403	072-01C SD	Batch ID:	62314		TestNo	: SW	6020A		Units:	mg/L	
SampType: SD		Run ID:	ICP-MS	3_140313A	Analys	is Date: 3/13	/2014 3:17:	00 PM	Prep Date:	3/13/20)14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %		PDLimit Qual
Magnesium			5.06	1.50	0	4.96				2.10	10
Potassium			7.21	1.50	0	7.05				2.23	10
Sample ID 1403	072-01C PDS	Batch ID:	62314		TestNo	: SW	6020A		Units:	mg/L	
SampType: PDS		Run ID:	ICP-MS	3_140313A	Analys	is Date: 3/13	/2014 3:41:	00 PM	Prep Date:	3/13/20	014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %		PDLimit Qual
Magnesium			9.51	0.300	5.00	4.96	91.2	80	120		
Potassium			11.8	0.300	5.00	7.05	94.6	80	120		

Qualifiers: В Analyte detected in the associated Method Blank J

- Analyte detected between MDL and RL
- ND Not Detected at the Method Detection Limit
- RL Reporting Limit
- J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits Page 3 of 12

- S Spike Recovery outside control limits
- Ν Parameter not NELAC certified

CLIENT: Larson & Associates Work Order: 1403093

ANALYTICAL QC SUMMARY REPORT -

Project:	Legacy Ch	amberlain					RunII): I	CP-MS3_	140313	A	
Sample ID 1403	072-01C MS	Batch ID:	62314		TestNo	SWe	6020A		Units:	mg/L		
SampType: MS		Run ID:	ICP-MS3_	140313A	Analysi	s Date: 3/13	/2014 3:47:0	00 PM	Prep Date:	3/13/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit 🦻	%RPD R	PDLimit	Qual
Calcium			200	0.300	5.00	198	38.0	80	120			S
Magnesium			9.50	0.300	5.00	4.96	90.8	80	120			
Potassium			12.0	0.300	5.00	7.05	99.6	80	120			
Sodium			52.6	0.300	5.00	48.7	78.2	80	120			S
Sample ID 1403	072-01C MSD	Batch ID:	62314		TestNo	: SWe	6020A		Units:	mg/L		
SampType: MSD		Run ID:	ICP-MS3_	140313A	Analysi	s Date: 3/13	/2014 3:53:0	00 PM	Prep Date:	3/13/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit 9	%RPD R	PDLimit	Qual
Calcium			200	0.300	5.00	198	26.0	80	120	0.300	15	S
Magnesium			9.47	0.300	5.00	4.96	90.4	80	120	0.242	15	
Potassium			11.9	0.300	5.00	7.05	97.0	80	120	1.09	15	
Sodium			52.0	0.300	5.00	48.7	67.2	80	120	1.05	15	S
Sample ID 1403	072-01C SD	Batch ID:	62314		TestNo	: SWe	6020A		Units:	mg/L		
SampType: SD		Run ID:	ICP-MS3_	140313A	Analysi	s Date: 3/13	/2014 4:05:0	00 PM	Prep Date:	3/13/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit 🦻	%RPD R	PDLimit	Qual
Calcium			205	15.0	0	204				0.464	10	
Sodium			49.3	15.0	0	50.1				1.49	10	
Sample ID 1403	072-01C PDS	Batch ID:	62314		TestNo	swe	6020A		Units:	mg/L		
SampType: PDS		Run ID:	ICP-MS3_	140313A	Analysi	s Date: 3/13	/2014 4:11:0	00 PM	Prep Date:	3/13/2	014	
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit 🦻	%RPD R	PDLimit	Qual
Calcium			253	3.00	50.0	204	97.6	80	120			
Sodium			102	3.00	50.0	50.1	103	80	120			

Qualifiers: В Analyte detected in the associated Method Blank DF Dilution Factor J Analyte detected between MDL and RL MDL Method Detection Limit ND Not Detected at the Method Detection Limit R RPD outside accepted control limits RL Reporting Limit S Spike Recovery outside control limits J Analyte detected between SDL and RL Ν Parameter not NELAC certified

Page 4 of 12

CLIENT: Larson & Associates Work Order:

1403093

ANALYTICAL QC SUMMARY REPORT

RunID:

ICP-MS3_140313A

Project: Legacy Chamberlain

Froject: Legacy	Chamberlan	1				Nuilli	J . I	CI -10155	_140313A
Sample ID ILCVL-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: LCVL	Run ID:	ICP-MS3	_140313A	Analys	is Date: 3/1 3	3/2014 12:58	B:00 PM	Prep Date	÷
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qua
Calcium		0.0929	0.300	0.100	0	92.9	70	130	
Magnesium		0.105	0.300	0.100	0	105	70	130	
Potassium		0.115	0.300	0.100	0	115	70	130	
Sodium		0.114	0.300	0.100	0	114	70	130	
Sample ID LCVL1-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: LCVL	Run ID:	ICP-MS3	_140313A	Analys	is Date: 3/1 3	3/2014 2:35:	00 PM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qua
Calcium		0.0927	0.300	0.100	0	92.7	70	130	
Magnesium		0.104	0.300	0.100	0	104	70	130	
Potassium		0.117	0.300	0.100	0	117	70	130	
Sodium		0.102	0.300	0.100	0	102	70	130	
Sample ID LCVL2-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: LCVL	Run ID:	ICP-MS3	_140313A	Analys	is Date: 3/13	3/2014 4:35:	00 PM	Prep Date	
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qua
Calcium		0.106	0.300	0.100	0	106	70	130	
Magnesium		0.100	0.300	0.100	0	100	70	130	
Potassium		0.122	0.300	0.100	0	122	70	130	
Sodium		0.102	0.300	0.100	0	102	70	130	
Sample ID ICV1-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: ICV	Run ID:	ICP-MS3	_140313A	Analys	is Date: 3/1 3	3/2014 12:46	6: 00 PM	Prep Date	÷
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qua
Calcium		2.34	0.300	2.50	0	93.8	90	110	
Magnesium		2.42	0.300	2.50	0	96.6	90	110	
Potassium		2.45	0.300	2.50	0	98.0	90	110	
Sodium		2.42	0.300	2.50	0	96.6	90	110	
Sample ID CCV1-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: CCV	Run ID:	ICP-MS3	_140313A	Analys	is Date: 3/13	3/2014 2:10:	00 PM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qua
		5.48	0.300	5.00	0	110	90	110	
Calcium		0.40	0.000						
		5.22	0.300	5.00	0	104	90	110	
Calcium Magnesium Potassium					0 0	104 107	90 90	110 110	

Qualifiers:

В Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

- RL Reporting Limit
- J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits

S Spike Recovery outside control limits

Ν Parameter not NELAC certified Page 5 of 12

CLIENT: Larson & Associates Work Order: 1403093 **Project:** Legacy Chamberlain

ANALYTICAL QC SUMMARY REPORT

RunID:

ICP-MS3_140313A

Sample ID CCV2-140313	Batch ID:	R71770		TestNo	: SW	6020A		Units:	mg/L
SampType: CCV	Run ID:	ICP-MS3	_140313A	Analysi	s Date: 3/13	8/2014 4:23:	00 PM	Prep Date	÷
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit	%RPD RPDLimit Qual
Calcium		5.46	0.300	5.00	0	109	90	110	
Magnesium		5.11	0.300	5.00	0	102	90	110	
Potassium		5.49	0.300	5.00	0	110	90	110	
Sodium		5.15	0.300	5.00	0	103	90	110	

Qualifiers:

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND

- Not Detected at the Method Detection Limit
- RL Reporting Limit

В

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDL Method Detection Limit

Page 6 of 12

- R RPD outside accepted control limits
- S Spike Recovery outside control limits
- Ν Parameter not NELAC certified

CLIENT: Larson & Associates

Work Order:

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

1403093

RunID: IC_140312B

Analysis Date: Markatoria Markatoria <th>The QC data</th> <th>a in batch 62308 app</th> <th>lies to the fo</th> <th>ollowing sam</th> <th>ples: 1403</th> <th>3093-01C</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>	The QC data	a in batch 62308 app	lies to the fo	ollowing sam	ples: 1403	3093-01C						
Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quasity Analyte 0.6 1.0.0 1.0.0 0 0.6 90 110 Sample ID LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: LCSD Run ID: IC_1403128 Analysis Date: 31/2/2014 10:28:10 AM Prep Date: 31/2/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quasity Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quasity Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quasity Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Analyte Result RL SPK value Ref Va	Sample ID	LCS-62308	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
Chirolde 10.6 1.00 10.00 0 106 90 110 Suffate 31.4 3.00 30.00 0 105 90 110 Sample ID LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Analysis Data 10.6 1.00 0 105 90 110 SampType: LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Analysis Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chiorde 10.8 1.00 10.00 0 108 90 110 1.24 20 Suffate 31.8 3.00 30.00 0 106 90 110 1.24 20 Sampt D MBLK Run ID: 1C_140312B Analysis Date: 3/12/2014 10-42:46 AM Prep Date: 3/12/2014 Analysis Date: ND 5.00 Sono <th>SampType:</th> <th>LCS</th> <th>Run ID:</th> <th>IC_140312</th> <th>2B</th> <th>Analysi</th> <th>s Date: 3/12</th> <th>2/2014 10:13</th> <th>33 AM</th> <th>Prep Date:</th> <th>3/12/20</th> <th>)14</th>	SampType:	LCS	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 10:13	33 AM	Prep Date:	3/12/20)14
Nitrate-N 5.18 0.500 5.000 0 104 90 110 Sulfate 31.4 3.00 30.00 0 105 90 110 Sample ID LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Analysis Date: 3/12/2014 02:81:048 3/12/2014 02:81:048 3/12/2014 Analysis Date: 3/12/2014 02:81:048 90 110 1.75 20 Suffate 10.8 1.00 10.00 0 108 90 110 1.24 20 Suffate 31.8 3.00 30.00 0 106 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Sample ID MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:4:2:46 Amalysis Amalysis Amalysis Amalysis Amalysis Amalysis </th <th>Analyte</th> <th></th> <th></th> <th>Result</th> <th>RL</th> <th>SPK value</th> <th>Ref Val</th> <th>%REC</th> <th>LowLimi</th> <th>t HighLimit %</th> <th>RPD R</th> <th>PDLimit Qual</th>	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Sulfate 31.4 3.00 30.00 0 105 90 110 Sample ID LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: LCSD Run ID: LC_140312B TestNo: E300 LowLimit HighLimit %RPD RPDLimit Qua Analysis 10.8 1.00 10.00 0 108 90 110 1.75 20 Vittrate-N 5.25 0.500 5.000 0 106 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua SampType: MBLK ND 1.00 MD 3.00 Units: mg/L SampType: MS Run ID:	Chloride			10.6	1.00	10.00	0	106	90	110		
Sample ID LCSD-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: LCSD Run ID: IC_140312B Analysis Date: 3/12/2014 9/2:2014 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 10.8 1.00 10.00 0 108 90 110 1.75 20 Sulfate 31.8 3.00 30.00 0 106 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L Sample ID MD 1.00 ND 0.500 Sulfate ND 3.00 Sampt Vpe: MS Run ID:	Nitrate-N											
SampType: LCSD Run ID: IC_140312B Analysis Date: 3/12/2014 10:28:10 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 10.8 1.00 10.00 0 108 90 110 1.24 20 Sulfate 31.8 3.00 30.00 0 106 90 110 1.31 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 111:32:31/14 Mas Mas<	Sulfate			31.4	3.00	30.00	0	105	90	110		
Analyte Result RL SPK value Ref Val %REC LowLimit %RPD RPDLimit Quad Chloride 10.8 1.00 0 108 90 110 1.75 20 Sulfate 31.8 3.00 30.00 0 106 90 110 1.31 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quad Chloride ND 1.00 ND 3.00 Second Second <th>Sample ID</th> <th>LCSD-62308</th> <th>Batch ID:</th> <th>62308</th> <th></th> <th>TestNo</th> <th>: E30</th> <th>0</th> <th></th> <th>Units:</th> <th>mg/L</th> <th></th>	Sample ID	LCSD-62308	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
Choide 10.8 1.00 10.00 0 108 90 110 1.75 20 Nitrate-N 5.25 0.500 5.000 0 105 90 110 1.24 20 Suffate 31.8 3.00 30.00 0 106 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analysis ND 1.00 ND 1.00 ND 3.00 Second Second <th>SampType:</th> <th>LCSD</th> <th>Run ID:</th> <th>IC_140312</th> <th>2B</th> <th>Analysi</th> <th>s Date: 3/12</th> <th>2/2014 10:28</th> <th>8:10 AM</th> <th>Prep Date:</th> <th>3/12/20</th> <th>)14</th>	SampType:	LCSD	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 10:28	8:10 AM	Prep Date:	3/12/20)14
Nitrate-N 5.25 0.500 5.000 0 105 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 0 106 90 110 1.24 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 0 0.87 Prep Date: 3/12/2014 Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analysis Date: 3/12/2014 10:62:00 Second Second<	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Sulfate 31.8 3.00 30.00 0 106 90 110 1.31 20 Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B TestNo: E300 Units: mg/L Analysis Date: 3/12/2014 10.42:46 AM Prep Date: 3/12/2014 Analysis Date: 3/12/2014 Run ID: IC_140312B SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride ND 1.00 ND 0.500 SampType: MS Run ID: IC_140312B TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B TestNo: E300 Units: mg/L SampType: MSD Batch ID: 62308 TestNo: E300	Chloride			10.8	1.00	10.00	0	108	90	110	1.75	20
Sample ID MB-62308 Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride ND 1.00 ND 0.500 Sulfate ND 3.00 SampType: MS Run ID: IC_140312B TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analysie Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 SampType: Malysis Date: 3/12/2014	Nitrate-N			5.25	0.500	5.000	0	105	90	110	1.24	20
SampType: MBLK Run ID: IC_140312B Analysis Date: 3/12/2014 10:42:46 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride ND 1.00 ND 0.500 Sulfate ND 0.500 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua SampType: MS 307 30.0 200.0 147.3 99.8 90 110 100 3/12/2014 SampType: MSD Run ID: 1C_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 SampType: MSD Run ID: 1C_140312B Analysis Date: 3/12/2014 11:34:37 AM	Sulfate			31.8	3.00	30.00	0	106	90	110	1.31	20
Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride ND 1.00 ND 0.500 Suffate ND 3.00 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 SampType: MSD Run ID: 1C_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 <td< th=""><th>Sample ID</th><th>MB-62308</th><th>Batch ID:</th><th>62308</th><th></th><th>TestNo</th><th>: E30</th><th>0</th><th></th><th>Units:</th><th>mg/L</th><th></th></td<>	Sample ID	MB-62308	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
Chloride ND 1.00 Nitrate-N ND 0.500 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 1	SampType:	MBLK	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 10:42	2:46 AM	Prep Date:	3/12/20	014
ND 0.500 ND 3.00 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L Sampt Vpe: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 SPD rep Date: 3/12/2014 Sulfate Batch ID: 62308 TestNo: E300 Units: mg/L Sulfate Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Sulfate 307 30.0 200.0 93.77 107 90 110 Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L Sampt Ype: MSD Run ID: IC_140312B Rul SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Sulfate	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Sulfate ND 3.00 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyste Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 147.3 99.8 90 110 Sampt ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L Analysis Date: 3/12/2014 Analysis Date: 3/12/2014 Analyte Result RL	Chloride			ND	1.00							
Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 11:20:01 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 SampType: MSD Run ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: 1C_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Sulfate 348 10.0 <td>Nitrate-N</td> <td></td> <td></td> <td>ND</td> <td>0.500</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Nitrate-N			ND	0.500							
SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 147.3 100 90 110 0.018 20	Sulfate			ND	3.00							
Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 147.3 100 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L	Sample ID	1403093-01C MS	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
Chloride 347 10.0 200.0 147.3 99.8 90 110 Sulfate 307 30.0 200.0 93.77 107 90 110 Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 P	SampType:	MS	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 11:20	:01 AM	Prep Date:	3/12/20	014
Sulfate 307 30.0 200.0 93.77 107 90 110 Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 SampLifate 307 30.0 200.0 93.77 107 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Sample ID 1403093-01C MSD Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MSD Run ID: IC_140312B Analysis Date: 3/12/2014 11:34:37 AM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 SampType: MS Run ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: 1C_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RP	Chloride			347	10.0	200.0	147.3	99.8	90	110		
SampType:MSDRun ID:IC_140312BAnalysis Date:3/12/201411:34:37 AMPrep Date:3/12/2014AnalyteResultRLSPK valueRef Val%RECLowLimit HighLimit%RPDRPDLimit QuaChloride34810.0200.0147.3100901100.33120Sulfate30730.0200.093.77107901100.01820Sample ID1403093-01C MSBatch ID:62308TestNo:E300Units:mg/LSampType:MSRun ID:IC_140312BAnalysis Date:3/12/201412:03:50 PMPrep Date:3/12/2014AnalyteResultRLSPK valueRef Val%RECLowLimit HighLimit %RPD RPDLimit Qua	Sulfate			307	30.0	200.0	93.77	107	90	110		
Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	Sample ID	1403093-01C MSD	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
Chloride 348 10.0 200.0 147.3 100 90 110 0.331 20 Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Quart	SampType:	MSD	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 11:34	:37 AM	Prep Date:	3/12/20)14
Sulfate 307 30.0 200.0 93.77 107 90 110 0.018 20 Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
Sample ID 1403093-01C MS Batch ID: 62308 TestNo: E300 Units: mg/L SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	Chloride			348	10.0	200.0	147.3	100	90	110	0.331	20
SampType: MS Run ID: IC_140312B Analysis Date: 3/12/2014 12:03:50 PM Prep Date: 3/12/2014 Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	Sulfate				30.0		93.77	107	90			20
Analyte Result RL SPK value Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qua	Sample ID	1403093-01C MS	Batch ID:	62308		TestNo	: E30	0		Units:	mg/L	
	SampType:	MS	Run ID:	IC_140312	2B	Analysi	s Date: 3/12	2/2014 12:03	:50 PM	Prep Date:	3/12/20)14
Nitrate-N 6.09 0.500 4.516 1.955 91.5 90 110	Analyte			Result	RL	SPK value	Ref Val	%REC	LowLimi	t HighLimit %	RPD R	PDLimit Qual
	Nitrate-N			6.09	0.500	4.516	1.955	91.5	90	110		

Qualifiers:

- B Analyte detected in the associated Method Blank
- J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit
 - D Not Detected at the Method Detection Linn
- RL Reporting Limit
- J Analyte detected between SDL and RL

DF Dilution Factor

- MDLMethod Detection LimitRRPD outside accepted control limits
 - S Spike Recovery outside control limits

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N Parameter not NELAC certified

CLIENT: Larson & Associates ANALYTICAL QC SUMMARY REPORT Work Order: 1403093 **RunID:** IC_140312B **Project:** Legacy Chamberlain Sample ID 1403093-01C MSD 62308 TestNo: E300 Batch ID: Units: mg/L SampType: MSD IC_140312B 3/12/2014 Run ID: Analysis Date: 3/12/2014 12:18:26 PM Prep Date: RL SPK value LowLimit HighLimit %RPD RPDLimit Qual Analyte Result Ref Val %REC

4.516

2.905

71.4

90

110

0.712

20

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S

6.13

0.500

Qualifiers:

В

Nitrate-N

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDLMethod Detection LimitRRPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAC certified

CLIENT: Larson & Associates Work Order: 1403093

ANALYTICAL QC SUMMARY REPORT

Project: Legacy Chamberlain

RunID: IC_140312B

Sample ID ICV-140312	Batch ID:	R71738		TestNo:	E300			Units:	mg/L
SampType: ICV	Run ID:	IC_14031	2B	Analysis	s Date: 3/12/2	2014 8:40:	00 AM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD RPDLimit Qual
Chloride		26.8	1.00	25.00	0	107	90	110	
Nitrate-N		13.3	0.500	12.50	0	107	90	110	
Sulfate		79.6	3.00	75.00	0	106	90	110	
Sample ID CCV1-140312	Batch ID:	R71738		TestNo:	E300			Units:	mg/L
SampType: ССV	Run ID:	IC_14031	2B	Analysis	s Date: 3/12/2	2014 12:47	7:39 PM	Prep Date	:
Analyte		Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD RPDLimit Qual
		11.0	1.00	10.00	0	110	90	110	
Chloride		11.0	1.00	10.00	0	110			
Nitrate-N		5.30	0.500	5.000	0	106	90	110	

Qualifiers:

Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL ND Not Detected at the Method Detection Limit

- D Not Detected at the Method Detection Elimit
- RL Reporting Limit

В

- J Analyte detected between SDL and RL
- DF Dilution Factor
- MDLMethod Detection LimitRRPD outside accepted control limits

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- S Spike Recovery outside control limits
- N Parameter not NELAC certified

CLIENT:	Larson & .	Associates			۸N	ΑΙ ΥΤΙ	слт (J MMAR		POPT
Work Order:	1403093				AI						
Project:	Legacy Ch	amberlain					RunII):]	TITRATO	R_1403	512A
The QC data in bate	ch 62313 app	lies to the fo	llowing samp	les: 14030	93-01C						
Sample ID LCS-6	2313	Batch ID:	62313		TestNo:	M232	0 B		Units:	mg/L @	₽ pH 4.35
SampType: LCS		Run ID:	TITRATOR	_140312A	Analysis	s Date: 3/12/2	2014 2:05:	00 PM	Prep Date:	3/12/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	GRPD RF	DLimit Qual
Alkalinity, Total (As	CaCO3)		53.4	20.0	50.00	0	107	74	129		
Sample ID MB-62	313	Batch ID:	62313		TestNo:	M232	0 B		Units:	mg/L @	₽ pH 4.42
SampType: MBLK		Run ID:	TITRATOR	_140312A	Analysis	s Date: 3/12/2	2014 2:07:	00 PM	Prep Date:	3/12/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	RPD RF	DLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	ND	20.0							
Alkalinity, Carbonat	e (As CaCO3)	ND	20.0							
Alkalinity, Hydroxide	e (As CaCO3)		ND	20.0							
Alkalinity, Total (As	CaCO3)		ND	20.0							
Sample ID 140309	93-01C DUP	Batch ID:	62313		TestNo:	M232	0 B		Units:	mg/L @	₽ pH 4.51
SampType: DUP		Run ID:	TITRATOR	_140312A	Analysis	s Date: 3/12/2	2014 2:23:	00 PM	Prep Date:	3/12/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	GRPD RF	DLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	294	20.0	0	294.2				0.109	20
Alkalinity, Carbonat	e (As CaCO3)	0	20.0	0	0				0	20
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0	0				0	20
Alkalinity, Total (As	CaCO3)		294	20.0	0	294.2				0.109	20

Qualifiers:	В	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 10 of 12
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	C
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	Ν	Parameter not NELAC certified	

CLIENT: Work Order:	Larson & A 1403093				AN	ALYTI		-		AY REPORT
Project:	Legacy Ch	amberlain	1				RunII):		R_140312A
Sample ID ICV-14	0312	Batch ID:	R71744		TestNo:	M232	20 B		Units:	mg/L @ pH 4.49
SampType: ICV		Run ID:	TITRATOR	_140312A	Analysis	Date: 3/12/	2014 2:01:0	00 PM	Prep Date:	3/12/2014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD RPDLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	16.6	20.0	0					
Alkalinity, Carbonate	e (As CaCO3))	85.1	20.0	0					
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0					
Alkalinity, Total (As	CaCO3)		102	20.0	100.0	0	102	98	102	
Sample ID CCV-14	40312	Batch ID:	R71744		TestNo:	M232	20 B		Units:	mg/L @ pH 4.48
SampType: CCV		Run ID:	TITRATOR	_140312A	Analysis	Date: 3/12/	2014 2:29:0	00 PM	Prep Date:	3/12/2014
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLim	it HighLimit %	6RPD RPDLimit Qual
Alkalinity, Bicarbona	ate (As CaCO	3)	17.8	20.0	0					
Alkalinity, Carbonate	e (As CaCO3))	83.5	20.0	0					
Alkalinity, Hydroxide	e (As CaCO3)		0	20.0	0					
Alkalinity, Total (As	CaCO3)		101	20.0	100.0	0	101	90	110	

Qualifiers:

В

Analyte detected in the associated Method Blank

Analyte detected between MDL and RL J ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

- DF Dilution Factor
- MDL Method Detection Limit R RPD outside accepted control limits

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- S Spike Recovery outside control limits
- Ν Parameter not NELAC certified

CLIENT: Work Order:	Larson & . 1403093			AN	ALYT	ICAL (QC S	UMMAR	Y RE	PORT	
Project:	ct: Legacy Chamberlain						RunII	D:	WC_14031	3A	
The QC data in batch 62325 applies to the following samples: 1403093-01D											
Sample ID MB-62	2325	Batch ID:	62325		TestNo:	M25	540C		Units:	mg/L	
SampType: MBLK		Run ID:	WC_14031	3A	Analysis	a Date: 3/14	/2014 8:40:	00 AM	Prep Date:	3/13/20	14
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	nit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	ND	10.0							
Sample ID LCS-6	2325	Batch ID:	62325		TestNo:	M25	40C		Units:	mg/L	
SampType: LCS Run I		Run ID:	WC_140313A		Analysis Date: 3/14/2014 8:40:00 /			00 AM	Prep Date: 3/13/2014		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	mit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	757	10.0	745.6	0	102	90	113		
Sample ID 14030	93-01D-DUP	Batch ID:	62325		TestNo:	M25	540C		Units:	mg/L	
SampType: DUP Run ID:		Run ID:	WC_140313A		Analysis Date: 3/14/2014 8:40:00 AM			Prep Date:	Prep Date: 3/13/2014		
Analyte			Result	RL	SPK value	Ref Val	%REC	LowLir	nit HighLimit %	RPD RP	DLimit Qual
Total Dissolved So	lids (Residue,	Filtera	796	10.0	0	798.0				0.251	5

Qualifiers:

В

Analyte detected in the associated Method Blank Analyte detected between MDL and RL

J ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL DF Dilution Factor

MDL Method Detection Limit R RPD outside accepted control limits Page 12 of 12

S Spike Recovery outside control limits

Ν Parameter not NELAC certified