Mead Custodial Trust

606 Columbia St NW
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Olympia, WA 98501
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March 30, 2016

Guy Barrett
Department of Ecology
P.O. Box 47706
Olympia, WA 98504-7706

SUBJECT: 1st Quarter Groundwater and Surface Water Reports

Dear Guy:

Enclosed are the 1st quarter 2016 Groundwater and Surface Water Reports for Kaiser Mead. There was one anomalous finding in the groundwater well KM-2.

Please let me know if you have any questions.

Sincerely,

Dan Silver
Trustee

Enclosures

Hydrometrics, Inc.
consulting scientists and engineers

2736 White Pines Drive
Coeur d'Alene ID 83815
(208) 660-8548
Fax: (208) 765-5286
www.hydrometrics.com

March 17, 2016

VIA EMAIL

Mr. Daniel J. Silver, Custodial Trustee
Mead Custodial Trust
606 Columbia Street NW, Ste. 212
Olympia, WA 98501

Subject: **Kaiser Mead NPL Site - Submittal of Letter Report for 1st Quarter 2016 Groundwater Monitoring Activities**

Dear Mr. Silver:

This letter report documents the monitoring activity as stipulated in the Consent Decree dated October 7, 2004 between Kaiser Aluminum and Chemical Corporation, the U.S. Environmental Protection Agency, the Washington State Department of Ecology, and AIG Insurance Company. The requirement for groundwater monitoring activity is identified in the Remedial Action Plan (Exhibit A to the Scope of Work) as Task 2 Groundwater Monitoring Program. The following paragraphs describe the groundwater monitoring activities conducted by Hydrometrics, Inc. (Hydrometrics) for the 1st Quarter of 2016.

By letter dated November 1, 2006 the Washington Department of Ecology approved the discontinuance of monitoring for fluoride and cyanide in the A-zone for the following wells, KMCP-1, KMCP-2, KMCP-3, KMCP-4 and KMCP-5. The weather during sampling was cool and dry (temperatures in the forties).

Prior to each sampling event, the field equipment was calibrated using standard buffers and conductivity solutions. The equipment used for measuring field parameters was an Oakton multiparameter-meter.

All wells targeted for sampling are outfitted with dedicated bladder pumps. The pumps are operated with an oil-less air compressor powered by a portable gas-powered generator. Samples were collected using low-flow methods. Well KM-4 was sampled with a disposable bailer.

pH, conductivity, and temperature were monitored during purging and a sample was collected when parameters appeared to stabilize.

Pre cleaned sample bottles were obtained from the analytical laboratory, SVL Analytical (SVL). The Total, free and weak acid dissociable (WAD) Cyanide bottles were 250 milliliter (ml) polyethylene with sodium hydroxide (NaOH) added as a preservative following sample collection. The Fluoride sample bottles were 250 ml and contained no preservative. Following sampling, the labels were attached and the bottles were placed into the SVL coolers.

Once all samples had been obtained, the Chain of Custody form was completed and the sample bottles were secured in the cooler with ice packs. The samples were delivered by hand to the laboratory.

One (1) well reported results outside of its historic range. The total fluoride result for KM-2 was reported as a new low. All other results reported for all wells were within their respective historic ranges.

All QC tests (for all parameters) were within acceptable guidelines, except for one matrix spike recovery and one matrix recovery for the spike duplicate for total CN were slightly above guidelines and one matrix spike recovery and one matrix recovery for the spike duplicate for total WAD CN were below guidelines.

The field measurements and the laboratory analyses are summarized in the following tables. Field sampling logs, the Chain of Custody forms, and the laboratory data package follow.

Sincerely,
HYDROMETRICS, INC.

Antonio Chavez, P.E.
Senior Engineer

Encl.

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, btoc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KM-1	A	3/5/2015	145.24	1930.02	1784.78	9.8	7,760	12.1	45.8	0.626	1.010	79.0
		4/8/2015	145.17	1930.02	1784.85	9.9	7,030	11.8	45.6	0.502	0.780	77.7
		7/8/2015	144.80	1930.02	1785.22	10.2	9,410	18.2	68.3	3.470	1.960	96.8
		10/7/2015	145.45	1930.02	1784.57	10	8,340	12.8	51.2	0.175	0.168	78.2
		2/29/2016	145.81	1930.02	1784.21	10.0	7,500	11.3	45.0	0.956	0.332	73.6
KM-2	A	3/5/2015	143.5	1929.23	1785.73	9.8	4,870	12.40	78.7	1.30	2.22	40.5
		4/7/2015	143.32	1929.23	1785.91	10.2	4,650	14.20	82.5	4.81	2.80	42.9
		7/7/2015	143.09	1929.23	1786.14	10.1	4,360	15.90	67	7.54	4.35	35.7
		10/7/2015	143.80	1929.23	1785.43	10	4,540	13.20	75.1	0.87	0.87	29.1
		2/29/2016	144.13	1929.23	1785.10	10.1	5,170	11.80	97.1	4.19	1.73	15.5
KM-3	A	3/5/2015	155.13	1944.34	1789.21	7.80	619	10.90	< 0.0100	< 0.0100	< 0.0100	0.13
		4/7/2015	154.76	1944.34	1789.58	7.90	703	11.80	< 0.0100	< 0.0100	< 0.0100	< 0.10
		7/7/2015	154.70	1944.34	1789.64	7.90	702	17.00	< 0.0100	< 0.0100	< 0.0100	0.208
		10/2/2015	155.83	1944.34	1788.51	8.10	629	15.60	< 0.0100	< 0.0100	< 0.0100	< 0.100
		2/29/2016	155.91	1944.34	1788.43	7.90	702	11.40	< 0.0100	< 0.0100	< 0.0100	< 0.100
KM-4	A	3/6/2015	147.00	1925.19	1778.19	8.0	700	10.40	< 0.0100	< 0.0100	< 0.0100	0.147
		4/8/2015	146.98	1925.19	1778.21	8.3	709	10.40	0.0110	< 0.0100	< 0.0100	< 0.100
		7/8/2015	146.81	1925.19	1778.38	8.3	724	13.70	0.0100	< 0.0100	< 0.0100	< 0.100
		10/6/2015	147.03	1925.19	1778.16	8.2	712	12.20	< 0.0100	< 0.0100	< 0.0100	< 0.100
		3/2/2016	147.21	1925.19	1777.98	8.2	701	11.10	< 0.0100	< 0.0100	< 0.0100	< 0.100
KM-5	A	3/5/2015	145.05	1927.63	1782.58	10.00	5,660	10.7	81.2	0.516	0.760	53.5
		4/8/2015	145.05	1927.63	1782.58	10.30	5,600	11.1	78.1	1.200	1.410	56.9
		7/8/2015	144.75	1927.63	1782.88	10.40	4,260	14.9	64.2	5.270	2.350	35.7
		10/7/2015	145.20	1927.63	1782.43	10.10	5,680	12.4	89.3	0.402	0.392	50.1
		2/29/2016	145.51	1927.63	1782.12	10.20	6,320	10.6	83.7	1.020	0.490	59.7
KM-6	A	3/5/2015	139.30	1922.99	1783.69	9.8	5,750	10.2	102	0.610	0.795	66.3
		4/7/2015	139.16	1922.99	1783.83	10.1	5,500	12.2	99.9	1.360	1.11	68.0
		7/7/2015	138.91	1922.99	1784.08	10.1	5,480	13.8	98.7	5.970	2.590	63.7
		10/7/2015	139.42	1922.99	1783.57	10.1	5,110	12.3	87.3	0.826	0.381	61.3
		2/29/2016	139.88	1922.99	1783.11	10.0	5,050	10.7	97.8	1.580	0.565	52.8
KM-7	B	3/6/2015	No measurement	1921.96		–	–	–	–	–		–
		4/7/2015	150.33	1921.96	1771.63	–	–	–	–	–		–
		7/7/2015	150.68	1921.96	1771.28	–	–	–	–	–		–
		10/7/2015	150.43	1921.96	1771.53	–	–	–	–	–		–
		2/29/2016	151.54	1921.96	1770.42	–	–	–	–	–		–
KMCP-1A	A	3/5/2015	156.65	1934.43	1777.78	–	–	–	–	–		–
		4/7/2015	156.48	1934.43	1777.95	–	–	–	–	–		–
		7/7/2015	156.42	1934.43	1778.01	–	–	–	–	–		–
		10/6/2015	156.87	1934.43	1777.56	–	–	–	–	–		–
		2/29/2016	157.02	1934.43	1777.41	–	–	–	–	–		–
KMCP-1B	B	3/5/2015	163.29	1934.43	1771.14	8.10	496	10.40	0.268	0.0390	0.0370	0.558
		4/7/2015	162.81	1934.43	1771.62	8.30	492	11.40	0.249	0.0440	0.0310	0.712
		7/7/2015	163.50	1934.43	1770.93	8.20	502	13.80	0.176	0.0770	0.0590	0.623
		10/6/2015	164.64	1934.43	1769.79	8.40	526	13.00	0.237	0.0370	0.0290	0.623
		2/29/2016	164.00	1934.43	1770.43	8.10	508	10.70	0.197	0.0210	0.0170	0.670
KMCP-2A	A	3/5/2015	130.27	1926.70	1796.43	–	–	–	–	–		–
		4/7/2015	130.23	1926.70	1796.47	–	–	–	–	–		–
		7/7/2015	130.26	1926.70	1796.44	–	–	–	–	–		–
		10/6/2015	130.31	1926.70	1796.39	–	–	–	–	–		–
		2/29/2016	130.38	1926.70	1796.32	–	–	–	–	–		–

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, btoc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KMCP-2B	B	3/5/2015	157.23	1926.25	1769.02	8.1	393	10.4	0.0260	< 0.0100	< 0.0100	0.245
		4/7/2015	156.82	1926.25	1769.43	8.3	391	11.5	0.0250	< 0.0100	< 0.0100	0.311
		7/7/2015	156.82	1926.25	1769.43	8.2	397	15.7	0.0160	0.0110	< 0.0100	0.219
		10/6/2015	158.28	1926.25	1767.97	8.5	472	13.3	0.1690	0.0410	0.0330	0.417
		2/29/2016	157.92	1926.25	1768.33	8.3	412	9.9	0.0680	0.0120	< 0.0100	0.452
KMCP-3A	A	3/5/2015	106.53	1918.61	1812.08	–	–	–	–	–		–
		4/7/2015	106.53	1918.61	1812.08	–	–	–	–	–		–
		7/7/2015	106.37	1918.61	1812.24	–	–	–	–	–		–
		10/6/2015	106.28	1918.61	1812.33	–	–	–	–	–		–
		2/29/2016	106.48	1918.61	1812.13	–	–	–	–	–		–
KMCP-3B	B	3/5/2015	150.92	1919.07	1768.15	9.8	3,620	11.9	61.9	2.00	2.10	33.8
		4/7/2015	150.54	1919.07	1768.53	10.1	3,530	12.4	64.9	3.70	2.51	33.9
		7/7/2015	150.47	1919.07	1768.60	10.2	3,490	16.1	64.5	8.42	4.84	27.9
		10/6/2015	151.87	1919.07	1767.20	10.1	3,590	13.6	67.9	1.60	1.76	28.2
		2/29/2016	151.61	1919.07	1767.46	10.0	3,590	11.5	60.7	2.05	1.59	30.0
KMCP-4A	A	3/5/2015	99.28	1912.51	1813.23	–	–	–	–	–		–
		4/7/2015	99.29	1912.51	1813.22	–	–	–	–	–		–
		7/7/2015	99.27	1912.51	1813.24	–	–	–	–	–		–
		10/7/2015	99.19	1912.51	1813.32	–	–	–	–	–		–
		2/29/2016	99.31	1912.51	1813.20	–	–	–	–	–		–
KMCP-4B	B	3/5/2015	145.9	1912.52	1766.62	9.00	1,891	10.8	26.9	1.52	1.27	15.4
		4/7/2015	145.53	1912.52	1766.99	9.30	1,957	10.8	27.2	0.98	0.73	18.9
		7/7/2015	145.42	1912.52	1767.10	9.30	1,885	15.6	25.0	4.93	3.06	15.2
		10/7/2015	146.82	1912.52	1765.70	9.20	1,779	11.8	33.2	0.566	0.499	14.8
		2/29/2016	146.59	1912.52	1765.93	9.20	1,916	11.3	29.3	1.280	1.150	15.5
KMCP-5A	A	3/5/2015	94.88	1908.89	1814.01	–	–	–	–	–		–
		4/7/2015	94.90	1908.89	1813.99	–	–	–	–	–		–
		7/7/2015	94.91	1908.89	1813.98	–	–	–	–	–		–
		10/6/2015	94.91	1908.89	1813.98	–	–	–	–	–		–
		2/29/2016	94.97	1908.89	1813.92	–	–	–	–	–		–
KMCP-5B	B	3/5/2015	142.61	1908.80	1766.19	8.1	464	8.8	0.0580	< 0.0100	< 0.0100	< 0.100
		4/7/2015	142.27	1908.80	1766.53	8.3	423	10.4	0.1960	0.0250	0.0150	0.207
		7/7/2015	142.09	1908.80	1766.71	8.2	456	16.1	0.0550	0.0290	0.0230	0.146
		10/6/2015	143.33	1908.80	1765.47	8.6	407	11.3	0.0840	0.0230	0.0150	0.173
		2/29/2016	143.23	1908.80	1765.57	8.3	446	8.5	0.1320	0.0170	0.0120	0.134

Notes:
< = chemical was not detected at or above the method reporting limit
CN = cyanide
WAD = weak acid dissociable
F = fluoride
mg/L = milligrams per liter
All elevations are above mean sea level
btoc = below top of casing
* - Sample was re-analyzed outside of holding time.
J - Analyte concentration detected at a value between the minimum detection limit and the practical quantitation limit.
– = sample or data not collected

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): CHAVEZ
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-1
Sample Date: 2-29-16
Sample Time: 1510 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 76 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 162.94
SWL (ft): 145.91
Casing Diameter (I.D.") 4
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 2.5
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1519			10.0	8990	1.0	11.7	Yellow
1524			10.0	8310	0.5	11.8	" "
1527			10.0	8352	0.25	11.7	" "
1532			10.0	7930	0.25	11.4	" "
1536			10.0	7650	0.25	11.3	" "
1540			10.0	7502	0.25	11.3	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	7502	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.3	
Color	Yellow	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 58

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 024
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-2
Sample Date: ~~2-23-16~~ 2-24-16
Sample Time: 1318 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 46 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 157.13
SWL (ft): 144.13
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol Removed (gal) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1330			10.0	5020	0.25	12.4	Light x100
1334			10.1	5160	0.25	12.0	" "
1337			10.1	5120	0.25	12.4	" "
1343			10.1	5170	0.25	11.8	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.1	
SC (µmhos/cm)	5170	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.8	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 58

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 024
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-3
Sample Date: 2-24-16
Sample Time: 0842 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 37 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²)	25	Comments
TD (ft):	171.06	
SWL (ft):	~~155.91~~ 155.91	
Casing Diameter (I.D.")	2	
Water Volume (V) (gal):		
x 3=(gal.)		
Actual Vol. Removed (gal.)	1	
Water Level Recovery:	slow moderate rapid	

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
842			8.34	656	0.25	11.5	slight cloudy
846			8.0	704	0.25	12.1	" "
850			7.9	706	0.25	11.7	" "
854			7.9	702	0.25	11.4	clear

Turbidity: (clear) slight moderate very (circle)

Sample Method: grab composite (pump) bailer other (describe) **Low flow sampling - dedicated bladder pump**

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	7.9	
SC (µmhos/cm)	702	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.4	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 842

Sample Team Member Signature:

Water Sampling Form — HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-4
Sample Date: 3-2-2016
Sample Time: 1000 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.^{2}) 25 Comments

TD (ft): 153.29
SWL (ft): 147.21
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol Removed (gal.) 1.3
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1013			8.3	727	0.3	11.5	SVL collect
1020			8.2	701	0.5	11.5	" "
1026			8.2	701	0.5	11.1	" "

Turbidity: (circle) clear (slight) moderate very

Sample Method: (describe) grab composite pump (bailer) other
disposable bailer

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.2	
SC (µmhos/cm)	701	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.1	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments:

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-5
Sample Date: 2-29-16
Sample Time: 1335 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
clear p. cloudy overcast
Air Temperature: °C 49 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.^{2}) 25 Comments

TD (ft): 153.29
SWL (ft): 145.51
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1405			10.1	6050	0.25	11.0	Yellow
1408			10.2	6340	0.25	10.6	" "
1413			10.2	6380	0.25	11.0	" "
1410			10.2	6320	0.25	10.6	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.2	
SC (µmhos/cm)	6320	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.6	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID GC

Sample Team Member Signature: A. Chavez

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-6
Sample Date: 2-25-16
Sample Time: 1432 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 40 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.^{2}) 25 Comments
TD (ft): 155.4
SWL (ft): 139.88
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1.5
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1438			9.7	4960	0.25	10.6	Yellow
1441			9.8	5520	0.25	10.8	"
1443			9.9	5800	0.25	11.0	Lt "
1446			10.0	5370	0.25	10.4	" "
1449			10.0	5130	0.25	10.5	"
1453			10.0	5050	0.25	10.7	V. "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	5050	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.7	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KM-7 (Depth to water) 151.54

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-1B
Sample Date: 3-29-16
Sample Time: 10 47 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: (Yes) No Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:

Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft):	181.55
SWL (ft):	164.00
Casing Diameter (I.D.")	2
Water Volume (V) (gal):	
x 3=(gal.)	
Actual Vol. Removed (gal.)	1
Water Level Recovery:	slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1101			8.3	523	0.25	10.2	Clear
1104			8.1	515	0.25	10.9	"
1106			8.2	509	0.25	11.0	"
1109			8.1	508	0.25	10.7	"

Turbidity: (circle) clear slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.1	
SC (µmhos/cm)	508	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.7	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 55

Sample Team Member Signature:

KMCP-1A (DTW) 157.02

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-2B
Sample Date: 2-29-16
Sample Time: 1004 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 171.29
SWL (ft): 157.92
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1019			8.5	417	0.25	9.3	Clear
1024			8.3	419	0.45	9.4	"
1028			8.3	425	0.25	9.7	"
1033			8.3	412	0.45	9.9	

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.3	
SC (µmhos/cm)	412	
Turbidity (ntu)		
H_2O Tmp. (°C)	9.9	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: 1257

Sample Team Member Signature:

KMCP-2A (DTW) 130.38

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-3B
Sample Date: 2-25-16
Sample Time: 1157 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: (calm) (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 49 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 161.53
SWL (ft): 151.61
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 0.75
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1213			9.9	3560	0.25	12.0	light yellow
1220			10.0	3580	0.25	12.3	" "
1225			10.0	3590	0.25	11.5	" "

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	3590	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.5	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KMCP-3A (DTW) 106.48

Water Sampling Form — HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-4B
Sample Date: 11 2 3
Sample Time: 2-29-16 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 160.59
SWL (ft): 116.59
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) /
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1135			8.7	1746	0.25	11.2	1.5 gal TO FLOW
1137			9.1	1860	0.25	11.3	" "
1140			9.2	1958	0.25	11.4	" "
1143			9.2	1916	0.25	11.3	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	9.2	
SC (µmhos/cm)	1916	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.3	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KMCP-4A (DTW) 99.31

Water Sampling Form — HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-5B
Sample Date: 2-29-16
Sample Time: 920 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring-- other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 42 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 152.39
SWL (ft): 143.23
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
934			8.6	468	0.25	7.5	Clear
940			8.3	445	0.25	8.4	"
945			8.3	447	0.25	8.3	"
949			8.3	446	0.25	8.5	"

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.3	
SC (µmhos/cm)	446	
Turbidity (ntu)		
H_2O Tmp. (°C)	8.5	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	UF	NaOH	Total/WAD/Free CN	
1	250 ml	UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: IDS%

Sample Team Member Signature:

KMCP-5A (DTW) 94.97

W6C0052

Page 1 of 1

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: 8 °C

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil, 4 = Sediment, 5 = Rock, 6 = Rinsate, 7 = Oil
8 = Waste, 9 = Other: _____

Report to Company:	Hydrometrics
Contact:	Tony Chavez
Address:	
Phone Number:	208 660 8548
FAX Number:	
E-mail:	achavez@hydrometrics.com

Invoice Sent To:	SAME
Contact:	
Address:	
Phone Number:	
FAX Number:	
PO#:	

Project Name: Kaiser Mead

Sampler's Signature:

Indicate State of sample origination: WA

	Sample ID	Collection			Misc.		Preservative(s)							Analyses Required										Rush Instructions (Days)	Comments
	Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, Ø and O. Thanks!	Date	Time	Collected by: (Init.)	Matrix Type (From Table 1)	No. of Containers	Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Fluoride	Total & WAD CN	Free CN									
1	KM-4	3-2-16	1026	KC	2	2	✓					✓		✓	✓	✓									
2																									
3	W-24	3-2-16	1150	KC	1	2	✓					✓		✓	✓										
4	W-2326	"	1205	"	1	2	✓					✓		✓	✓										
5	W-195	"	1224	"	1	2	✓					✓		✓	✓										
6																									
7																									
8																									
9																									
10																								03/03/16 08:00	

Relinquished by:		Date: 3-2-16	Time: 1330	Received by:	D. Johnson / D. Gardner	Date: 03/02/16	Time: 1330
Relinquished by:		Date: 03/03/16	Time: 0800	Received by:		Date: 3/3/16	Time: 13:20

* Sample Reject ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 01/14

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 03/02/16 **By:** Johann

SVL Work No: W16C0052

GW, SW

Item	Description	V	VC	NV	NA	Comments
1	Client or project name					Hydrometrics, Inc. - CDA
2	Date and time of receipt at lab					3-2-16 1330
3	Received by					PJ
4	Temperature blank or cooler temperature					Temp. 8 °C. >6°C QL6
5	Were the sample(s) received on ice					Yes
6	Custody tape/bottle seals					
7	Condition of samples upon receipt (leaking; bubbles in VOA vials					
8	Sample numbers/IDs agree with COC					
9	Sample date & time agree with COC					
10	Number of containers for each sample					
11	The correct preservative for the analysis requested					Cool NaOH pres. by Client
12	Did an SVL employee preserve sample(s) upon receipt					
12	Type of container for each sample / volume received					
13	Analysis requested for each sample					
14	Sample matrix description					
15	COC properly completed & legible					
16	Corrections properly made (initials & date)					
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)					KLG Fluoride (4) Total & WAD CN (4) Free CN (1)
18	Shipper's air bill					

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: _____

W6C0012

Page 1 of 1

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: 5°C

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0691

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil, 4 = Sediment, 5 = Rock, 6 = Rinsate, 7 = Oil
8 = Waste, 9 = Other: _____

Report to Company: Hydrometrics
Contact: Izzy Chavez
Address: _____
Phone Number: 208-660-3548
FAX Number: _____
E-mail: achavez@hydrometrics.com

Invoice Sent To: SAME
Contact: _____
Address: _____
Phone Number: _____
FAX Number: _____
PO#: _____

Project Name: Kaiser Mead
Sampler's Signature: [signature]

Indicate State of sample origination: WA

Sample ID (Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, ø and O. Thanks!)	Collection: Date	Collection: Time	Collected by: (Init.)	Misc.: Matrix Type (From Table 1)	Misc.: No. of Containers	Preservative(s): Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Analyses Required: Fluoride	Analyses Required: Total, WAD, Free CN	Rush Instructions (Days)	Comments
1 KM-1	2-29-16	1540	KC	2	2	✓					✓		✓	✓		-01
2 KM-2		1343														
3 KM-3		0954														
4 KM-5		1418														
5 KM-6		1453														
6 KMCP-1B		1109														
7 KMCP-2B		1033														
8 KMCP-3B		1225														
9 KMCP-4B		1143														
10 KMCP-5B		949														

Relinquished by: [signature]	Date: 3-1-16	Time: 1700	Received by: [signature]	Date: 03/01/16	Time: 1300	
Relinquished by: [signature]	Date: 03/02/16	Time:	Received by: [signature]	Date: 03/02/16	Time: 815	

• Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

3/2/16 10:30

SVL-COC 01/14

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 03/01/16 **By:** Yohann

SVL Work No: W6C0012 GW

Item	Description	V	VC	NV	NA	Comments Kaiser Mead
1	Client or project name	✓				Hydrometrics Tony Chavez
2	Date and time of receipt at lab	✓				03/01/16 @ 1300
3	Received by	✓				Y
4	Temperature blank or cooler temperature	✓				Temp. 5 °C.
5	Were the sample(s) received on ice	✓				Y
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials	✓				GOOD
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				Cool NaOH pres by client
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO
12	Type of container for each sample / volume received	✓				
13	Analysis requested for each sample	✓				
14	Sample matrix description	✓				
15	COC properly completed & legible	✓				
16	Corrections properly made (initials & date)				✓	
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	Klg: CN; Total, WAD, Free CN, Fluoride } 10
18	Shipper's air bill				✓	WALK-IN

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: Started WO entry; please confirm, only entered sample #1 Y

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Coeur d Alene, ID 83815

Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KM-1	W6C0012-01	Ground Water	29-Feb-16 15:40	AC	01-Mar-2016	
KM-2	W6C0012-02	Ground Water	29-Feb-16 13:43	AC	01-Mar-2016	
KM-3	W6C0012-03	Ground Water	29-Feb-16 08:54	AC	01-Mar-2016	
KM-5	W6C0012-04	Ground Water	29-Feb-16 14:18	AC	01-Mar-2016	
KM-6	W6C0012-05	Ground Water	29-Feb-16 14:53	AC	01-Mar-2016	
KMCP-1B	W6C0012-06	Ground Water	29-Feb-16 11:09	AC	01-Mar-2016	
KMCP-2B	W6C0012-07	Ground Water	29-Feb-16 10:33	AC	01-Mar-2016	
KMCP-3B	W6C0012-08	Ground Water	29-Feb-16 12:25	AC	01-Mar-2016	
KMCP-4B	W6C0012-09	Ground Water	29-Feb-16 11:43	AC	01-Mar-2016	
KMCP-5B	W6C0012-10	Ground Water	29-Feb-16 09:49	AC	01-Mar-2016	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative

SVL is not accredited in the State of WA for WAD CN in non-potable water.

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Hydrometrics Inc. - CDA
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Coeur d Alene, ID 83815

Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-1**
SVL Sample ID: **W6C0012-01 (Ground Water)**

Sampled: 29-Feb-16 15:40
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.332	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 11:54	
EPA 335.4	**Cyanide (total)**	45.0	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:22	D2,M3
SM 4500-CN-I	**Cyanide (WAD)**	0.956	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:02	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	73.6	mg/L	5.00	2.05	50	W611061	DT	03/14/16 19:48	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-2**
SVL Sample ID: **W6C0012-02 (Ground Water)**

Sampled: 29-Feb-16 13:43
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.73	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:35	D2
EPA 335.4	**Cyanide (total)**	97.1	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:24	D2
SM 4500-CN-I	**Cyanide (WAD)**	4.19	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:04	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	15.5	mg/L	2.50	1.02	25	W611061	DT	03/14/16 20:04	D2

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-3**
SVL Sample ID: **W6C0012-03 (Ground Water)**

Sampled: 29-Feb-16 08:54
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 11:58	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:26	
SM 4500-CN-I	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:06	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	< 0.100	mg/L	0.100	0.041		W611061	DT	03/14/16 20:20	

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-5**
SVL Sample ID: **W6C0012-04 (Ground Water)**

Sampled: 29-Feb-16 14:18
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.490	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:00	
EPA 335.4	**Cyanide (total)**	83.7	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:28	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.02	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:08	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	59.7	mg/L	5.00	2.05	50	W611061	DT	03/14/16 21:08	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-6**
SVL Sample ID: **W6C0012-05 (Ground Water)**

Sampled: 29-Feb-16 14:53
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.565	mg/L	0.0100	0.0022	2	W611071	MAD	03/09/16 12:37	D2
EPA 335.4	**Cyanide (total)**	97.8	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:30	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.58	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:10	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	52.8	mg/L	5.00	2.05	50	W611061	DT	03/14/16 21:24	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-1B**
SVL Sample ID: **W6C0012-06 (Ground Water)**

Sampled: 29-Feb-16 11:09
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.0170	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:04	
EPA 335.4	**Cyanide (total)**	0.197	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:38	
SM 4500-CN-I	**Cyanide (WAD)**	0.0210	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:12	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.670	mg/L	0.100	0.041		W611061	DT	03/14/16 22:11	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-2B**
SVL Sample ID: **W6C0012-07 (Ground Water)**

Sampled: 29-Feb-16 10:33
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:12	
EPA 335.4	**Cyanide (total)**	0.0680	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:40	
SM 4500-CN-I	**Cyanide (WAD)**	0.0120	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:14	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.452	mg/L	0.100	0.041		W611061	DT	03/14/16 22:43	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-3B**
SVL Sample ID: **W6C0012-08 (Ground Water)**

Sampled: 29-Feb-16 12:25
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.59	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:14	D2
EPA 335.4	**Cyanide (total)**	60.7	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:42	D2
SM 4500-CN-I	**Cyanide (WAD)**	2.05	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:22	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	30.0	mg/L	2.50	1.02	25	W611061	DT	03/14/16 22:59	D2

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Kirby Gray
Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-4B**
SVL Sample ID: **W6C0012-09 (Ground Water)**

Sampled: 29-Feb-16 11:43
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.15	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:39	D2
EPA 335.4	**Cyanide (total)**	29.3	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:44	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.28	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:24	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	15.5	mg/L	1.00	0.410	10	W611061	DT	03/14/16 23:15	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-5B**
SVL Sample ID: **W6C0012-10 (Ground Water)**

Sampled: 29-Feb-16 09:49
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.0120	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:18	
EPA 335.4	**Cyanide (total)**	0.132	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:46	
SM 4500-CN-I	**Cyanide (WAD)**	0.0170	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:26	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.134	mg/L	0.100	0.041		W611061	DT	03/14/16 23:30	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Hydrometrics Inc. - CDA
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Coeur d Alene, ID 83815

Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0011	0.0100	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0044	0.0100	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W610187	08-Mar-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.041	0.100	W611061	14-Mar-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.152	0.150	101	90 - 110	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	0.141	0.150	94.0	90 - 110	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.139	0.150	92.7	90 - 110	W610187	08-Mar-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	1.95	2.00	97.4	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.444	0.332	0.100	112	79 - 121	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	46.1	45.0	0.100	R > 4S	90 - 110	W610188	08-Mar-16	D2,M3
EPA 335.4	Cyanide (total)	mg/L	0.0950	<0.0100	0.100	95.0	90 - 110	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.290	0.201	0.100	89.0	75 - 125	W610187	08-Mar-16	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.00	<0.100	2.00	95.6	90 - 110	W611061	14-Mar-16	
EPA 300.0	Fluoride	mg/L	2.63	0.670	2.00	98.2	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.441	0.444	0.100	109	0.7	20	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	45.5	46.1	0.100	R > 4S	1.2	20	W610188	08-Mar-16	D2,M3
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.289	0.290	0.100	88.0	0.3	20	W610187	08-Mar-16	
Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	2.01	2.00	2.00	96.2	0.6	20	W611061	14-Mar-16	

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Hydrometrics Inc. - CDA	**Project Name: Kaiser Groundwater 2015**
2736 White Pines Drive	Work Order: **W6C0012**
Coeur d Alene, ID 83815	Reported: 15-Mar-16 11:40

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

Hydrometrics, Inc.
consulting scientists and engineers

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March 17, 2016

VIA EMAIL

Mr. Daniel J. Silver, Custodial Trustee
Mead Custodial Trust
606 Columbia Street NW, Ste. 212
Olympia, WA 98501

Subject: Kaiser Mead NPL Site - Submittal of Letter Report for 1st Quarter 2016 Groundwater Monitoring Activities

Dear Mr. Silver:

This letter report documents the monitoring activity as stipulated in the Consent Decree dated October 7, 2004 between Kaiser Aluminum and Chemical Corporation, the U.S. Environmental Protection Agency, the Washington State Department of Ecology, and AIG Insurance Company. The requirement for groundwater monitoring activity is identified in the Remedial Action Plan (Exhibit A to the Scope of Work) as Task 2 Groundwater Monitoring Program. The following paragraphs describe the groundwater monitoring activities conducted by Hydrometrics, Inc. (Hydrometrics) for the 1st Quarter of 2016.

By letter dated November 1, 2006 the Washington Department of Ecology approved the discontinuance of monitoring for fluoride and cyanide in the A-zone for the following wells, KMCP-1, KMCP-2, KMCP-3, KMCP-4 and KMCP-5. The weather during sampling was cool and dry (temperatures in the forties).

Prior to each sampling event, the field equipment was calibrated using standard buffers and conductivity solutions. The equipment used for measuring field parameters was an Oakton multiparameter-meter.

All wells targeted for sampling are outfitted with dedicated bladder pumps. The pumps are operated with an oil-less air compressor powered by a portable gas-powered generator. Samples were collected using low-flow methods. Well KM-4 was sampled with a disposable bailer.

pH, conductivity, and temperature were monitored during purging and a sample was collected when parameters appeared to stabilize.

Pre cleaned sample bottles were obtained from the analytical laboratory, SVL Analytical (SVL). The Total, free and weak acid dissociable (WAD) Cyanide bottles were 250 milliliter (ml) polyethylene with sodium hydroxide (NaOH) added as a preservative following sample collection. The Fluoride sample bottles were 250 ml and contained no preservative. Following sampling, the labels were attached and the bottles were placed into the SVL coolers.

Once all samples had been obtained, the Chain of Custody form was completed and the sample bottles were secured in the cooler with ice packs. The samples were delivered by hand to the laboratory.

One (1) well reported results outside of its historic range. The total fluoride result for KM-2 was reported as a new low. All other results reported for all wells were within their respective historic ranges.

All QC tests (for all parameters) were within acceptable guidelines, except for one matrix spike recovery and one matrix recovery for the spike duplicate for total CN were slightly above guidelines and one matrix spike recovery and one matrix recovery for the spike duplicate for total WAD CN were below guidelines.

The field measurements and the laboratory analyses are summarized in the following tables. Field sampling logs, the Chain of Custody forms, and the laboratory data package follow.

Sincerely,
HYDROMETRICS, INC.

Antonio Chavez, P.E.
Senior Engineer

Encl.

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, btoc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KM-1	A	3/5/2015	145.24	1930.02	1784.78	9.8	7,760	12.1	45.8	0.626	1.010	79.0
		4/8/2015	145.17	1930.02	1784.85	9.9	7,030	11.8	45.6	0.502	0.780	77.7
		7/8/2015	144.80	1930.02	1785.22	10.2	9,410	18.2	68.3	3.470	1.960	96.8
		10/7/2015	145.45	1930.02	1784.57	10	8,340	12.8	51.2	0.175	0.168	78.2
		2/29/2016	145.81	1930.02	1784.21	10.0	7,500	11.3	45.0	0.956	0.332	73.6
KM-2	A	3/5/2015	143.5	1929.23	1785.73	9.8	4,870	12.40	78.7	1.30	2.22	40.5
		4/7/2015	143.32	1929.23	1785.91	10.2	4,650	14.20	82.5	4.81	2.80	42.9
		7/7/2015	143.09	1929.23	1786.14	10.1	4,360	15.90	67	7.54	4.35	35.7
		10/7/2015	143.80	1929.23	1785.43	10	4,540	13.20	75.1	0.87	0.87	29.1
		2/29/2016	144.13	1929.23	1785.10	10.1	5,170	11.80	97.1	4.19	1.73	15.5
KM-3	A	3/5/2015	155.13	1944.34	1789.21	7.80	619	10.90	< 0.0100	< 0.0100	< 0.0100	0.13
		4/7/2015	154.76	1944.34	1789.58	7.90	703	11.80	< 0.0100	< 0.0100	< 0.0100	< 0.10
		7/7/2015	154.70	1944.34	1789.64	7.90	702	17.00	< 0.0100	< 0.0100	< 0.0100	0.208
		10/2/2015	155.83	1944.34	1788.51	8.10	629	15.60	< 0.0100	< 0.0100	< 0.0100	< 0.100
		2/29/2016	155.91	1944.34	1788.43	7.90	702	11.40	< 0.0100	< 0.0100	< 0.0100	< 0.100
KM-4	A	3/6/2015	147.00	1925.19	1778.19	8.0	700	10.40	< 0.0100	< 0.0100	< 0.0100	0.147
		4/8/2015	146.98	1925.19	1778.21	8.3	709	10.40	0.0110	< 0.0100	< 0.0100	< 0.100
		7/8/2015	146.81	1925.19	1778.38	8.3	724	13.70	0.0100	< 0.0100	< 0.0100	< 0.100
		10/6/2015	147.03	1925.19	1778.16	8.2	712	12.20	< 0.0100	< 0.0100	< 0.0100	< 0.100
		3/2/2016	147.21	1925.19	1777.98	8.2	701	11.10	< 0.0100	< 0.0100	< 0.0100	< 0.100
KM-5	A	3/5/2015	145.05	1927.63	1782.58	10.00	5,660	10.7	81.2	0.516	0.760	53.5
		4/8/2015	145.05	1927.63	1782.58	10.30	5,600	11.1	78.1	1.200	1.410	56.9
		7/8/2015	144.75	1927.63	1782.88	10.40	4,260	14.9	64.2	5.270	2.350	35.7
		10/7/2015	145.20	1927.63	1782.43	10.10	5,680	12.4	89.3	0.402	0.392	50.1
		2/29/2016	145.51	1927.63	1782.12	10.20	6,320	10.6	83.7	1.020	0.490	59.7
KM-6	A	3/5/2015	139.30	1922.99	1783.69	9.8	5,750	10.2	102	0.510	0.795	66.3
		4/7/2015	139.16	1922.99	1783.83	10.1	5,500	12.2	99.9	1.360	1.11	68.0
		7/7/2015	138.91	1922.99	1784.08	10.1	5,480	13.8	98.7	5.970	2.590	63.7
		10/7/2015	139.42	1922.99	1783.57	10.1	5,110	12.3	87.3	0.826	0.381	61.3
		2/29/2016	139.88	1922.99	1783.11	10.0	5,050	10.7	97.8	1.580	0.565	52.8
KM-7	B	3/6/2015	No measurement	1921.96		--	--	--	--	--		--
		4/7/2015	150.33	1921.96	1771.63	--	--	--	--	--		--
		7/7/2015	150.68	1921.96	1771.28	--	--	--	--	--		--
		10/7/2015	150.43	1921.96	1771.53	--	--	--	--	--		--
		2/29/2016	151.54	1921.96	1770.42	--	--	--	--	--		--
KMCP-1A	A	3/5/2015	156.65	1934.43	1777.78	--	--	--	--	--		--
		4/7/2015	156.48	1934.43	1777.95	--	--	--	--	--		--
		7/7/2015	156.42	1934.43	1778.01	--	--	--	--	--		--
		10/6/2015	156.87	1934.43	1777.56	--	--	--	--	--		--
		2/29/2016	157.02	1934.43	1777.41	--	--	--	--	--		--
KMCP-1B	B	3/5/2015	163.29	1934.43	1771.14	8.10	496	10.40	0.268	0.0390	0.0370	0.558
		4/7/2015	162.81	1934.43	1771.62	8.30	492	11.40	0.249	0.0440	0.0310	0.712
		7/7/2015	163.50	1934.43	1770.93	8.20	502	13.80	0.176	0.0770	0.0590	0.623
		10/6/2015	164.64	1934.43	1769.79	8.40	526	13.00	0.237	0.0370	0.0290	0.623
		2/29/2016	164.00	1934.43	1770.43	8.10	508	10.70	0.197	0.0210	0.0170	0.570
KMCP-2A	A	3/5/2015	130.27	1926.70	1796.43	--	--	--	--	--		--
		4/7/2015	130.23	1926.70	1796.47	--	--	--	--	--		--
		7/7/2015	130.26	1926.70	1796.44	--	--	--	--	--		--
		10/6/2015	130.31	1926.70	1796.39	--	--	--	--	--		--
		2/29/2016	130.38	1926.70	1796.32	--	--	--	--	--		--

Kaiser Mead NPL Groundwater Monitoring

Descriptive Name Well ID	Sample Formation	Date Sampled	Depth to Water (feet, btoc)	Top of PVC Casing Elev.	Groundwater Elev.	pH (Std Units)	Conductivity (umhos/cm)	Temperature (Deg. C)	Total CN (mg/L)	WAD CN (mg/L)	Free CN (mg/L)	F (mg/L)
KMCP-2B	B	3/5/2015	157.23	1926.25	1769.02	8.1	393	10.4	0.0260	< 0.0100	< 0.0100	0.245
		4/7/2015	156.82	1926.25	1769.43	8.3	391	11.5	0.0250	< 0.0100	< 0.0100	0.311
		7/7/2015	156.82	1926.25	1769.43	8.2	397	15.7	0.0160	0.0110	< 0.0100	0.219
		10/6/2015	158.28	1926.25	1767.97	8.5	472	13.3	0.1690	0.0410	0.0330	0.417
		2/29/2016	157.92	1926.25	1768.33	8.3	412	9.9	0.0680	0.0120	< 0.0100	0.452
KMCP-3A	A	3/5/2015	106.53	1918.61	1812.08	--	--	--	--	--		--
		4/7/2015	106.53	1918.61	1812.08	--	--	--	--	--		--
		7/7/2015	106.37	1918.61	1812.24	--	--	--	--	--		--
		10/6/2015	106.28	1918.61	1812.33	--	--	--	--	--		--
		2/29/2016	106.48	1918.61	1812.13	--	--	--	--	--		--
KMCP-3B	B	3/5/2015	150.92	1919.07	1768.15	9.8	3,620	11.9	61.9	2.00	2.10	33.8
		4/7/2015	150.54	1919.07	1768.53	10.1	3,530	12.4	64.9	3.70	2.51	33.9
		7/7/2015	150.47	1919.07	1768.60	10.2	3,490	16.1	64.5	8.42	4.84	27.9
		10/6/2015	151.87	1919.07	1767.20	10.1	3,590	13.6	67.9	1.60	1.76	28.2
		2/29/2016	151.61	1919.07	1767.46	10.0	3,590	11.5	60.7	2.05	1.59	30.0
KMCP-4A	A	3/5/2015	99.28	1912.51	1813.23	--	--	--	--	--		--
		4/7/2015	99.29	1912.51	1813.22	--	--	--	--	--		--
		7/7/2015	99.27	1912.51	1813.24	--	--	--	--	--		--
		10/7/2015	99.19	1912.51	1813.32	--	--	--	--	--		--
		2/29/2016	99.31	1912.51	1813.20	--	--	--	--	--		--
KMCP-4B	B	3/5/2015	145.9	1912.52	1766.62	9.00	1,891	10.8	26.9	1.52	1.27	15.4
		4/7/2015	145.53	1912.52	1766.99	9.30	1,957	10.8	27.2	0.98	0.73	18.9
		7/7/2015	145.42	1912.52	1767.10	9.30	1,885	15.6	25.0	4.93	3.06	15.2
		10/7/2015	146.82	1912.52	1765.70	9.20	1,779	11.8	33.2	0.566	0.499	14.8
		2/29/2016	146.59	1912.52	1765.93	9.20	1,916	11.3	29.3	1.280	1.150	15.5
KMCP-5A	A	3/5/2015	94.88	1908.89	1814.01	--	--	--	--	--		--
		4/7/2015	94.90	1908.89	1813.99	--	--	--	--	--		--
		7/7/2015	94.91	1908.89	1813.98	--	--	--	--	--		--
		10/6/2015	94.91	1908.89	1813.98	--	--	--	--	--		--
		2/29/2016	94.97	1908.89	1813.92	--	--	--	--	--		--
KMCP-5B	B	3/5/2015	142.61	1908.80	1766.19	8.1	464	8.8	0.0580	< 0.0100	< 0.0100	< 0.100
		4/7/2015	142.27	1908.80	1766.53	8.3	423	10.4	0.1960	0.0250	0.0150	0.207
		7/7/2015	142.09	1908.80	1766.71	8.2	456	16.1	0.0550	0.0290	0.0230	0.146
		10/6/2015	143.33	1908.80	1765.47	8.6	407	11.3	0.0840	0.0230	0.0150	0.173
		2/29/2016	143.23	1908.80	1765.57	8.3	446	8.5	0.1320	0.0170	0.0120	0.134

Notes:
< = chemical was not detected at or above the method reporting limit
CN = cyanide
WAD = weak acid dissociable
F = fluoride
mg/L = milligrams per liter
All elevations are above mean sea level
btoc = below top of casing
* - Sample was re-analyzed outside of holding time.
J - Analyte concentration detected at a value between the minimum detection limit and the practical quantitation limit.
-- = sample or data not collected

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): CHAVEZ
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-1
Sample Date: 2-24-16
Sample Time: 1500 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 76 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 162.94
SWL (ft): 145.81
Casing Diameter (I.D.") 4
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 2.5
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1519			10.0	8990	1.0	11.7	Yellow
1524			10.0	8890	0.5	11.8	"
1527			10.0	8352	0.25	11.7	"
1532			10.0	7930	0.25	11.4	"
1536			10.0	7630	0.25	11.3	"
1540			10.0	7500	0.25	11.3	"

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	7500	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.3	
Color	Yellow	
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: TD 58

Sample Team Member Signature: A. Chavez

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 024
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-2
Sample Date: 2-29-16
Sample Time: 1318 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water (monitoring well) domestic well adit seep spring – other:
Weather Conditions: calm (breeze) windy no precip. rain snow (clear) p. cloudy overcast
Air Temperature: °C 46 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft): 157.13
SWL (ft): 141.13
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1330			10.0	5020	0.25	12.4	Light yellow
1334			10.1	5160	0.5	12.5	" "
1337			10.1	5120	0.75	12.4	" "
1343			10.1	5170	1.0	11.8	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.1	
SC (µmhos/cm)	5170	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.8	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: TD 158

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 024
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-3
Sample Date: 2-29-16
Sample Time: 0820 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 37 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 171.06
SWL (ft): ~~155.91~~ 155.91
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
842			8.31	656	0.25	11.8	Slight clouding
846			8.0	704	0.25	12.1	" "
850			7.9	706	0.25	11.7	" "
854			7.9	702	0.25	11.4	Clear

Turbidity: (clear) slight moderate very (circle)

Sample Method: grab composite (pump) bailer other (describe) Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	7.9	
SC (µmhos/cm)	702	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.4	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 02

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-4
Sample Date: 3-2-2016
Sample Time: 1000 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring – other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.^{2}) 25 Comments

TD (ft): 153.29
SWL (ft): 147.21
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol Removed (gal.) 1.3
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1013			8.3	727	0.5	11.5	SLT cloudy
1020			8.2	701	0.5	11.5	" "
1026			8.2	701	0.5	11.1	" "

Turbidity: (circle) clear (slight) moderate very

Sample Method: (describe) grab composite pump (bailer) other
disposable bailer

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.2	
SC (µmhos/cm)	701	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.1	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments:

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-5
Sample Date: 2-29-16
Sample Time: 1335 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
clear p. cloudy overcast
Air Temperature: °C 49 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 153.29
SWL (ft): 145.51
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1405			10.1	6050	0.25	11.0	Yellow
1408			10.2	6790	0.25	10.6	clear
1413			10.2	6380	0.25	11.0	"
1418			10.2	6320	0.25	10.6	"

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.2	
SC (µmhos/cm)	6320	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.6	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 60

Sample Team Member Signature:

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KM-6
Sample Date: 2-25-16
Sample Time: 1432 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 48 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft): 155.4
SWL (ft): 139.88
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1.5
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1438			9.7	4960	0.25	10.6	Yellow
1441			9.8	5520	0.25	10.8	"
1443			9.9	5800	0.25	11.0	Lt "
1446			10.0	5370	0.25	10.9	" "
1449			10.0	5130	0.25	10.9	"
1453			10.0	5050	0.25	10.7	V " "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	5050	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.7	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KM-7 (Depth to water) 151.54

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-1B
Sample Date: 2-29-16
Sample Time: 10 49 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: (Yes) No Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft): 181.55
SWL (ft): 164.00
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1101			8.3	523	0.25	10.2	Clear
1104			8.1	515	0.25	10.9	"
1106			8.2	509	0.25	11.0	"
1109			8.1	508	0.25	10.7	"

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.1	
SC (µmhos/cm)	508	
Turbidity (ntu)		
H_2O Tmp. (°C)	10.7	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 55

Sample Team Member Signature:

KMCP-1A (DTW) 157.02

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-2B
Sample Date: 2-29-16
Sample Time: 1004 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft): 171.29
SWL (ft): 157.92
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1019			8.5	477	0.25	9.3	Clear
1024			8.3	457	0.25	9.4	"
1028			8.3	425	0.25	9.7	"
1033			8.3	412	0.25	9.9	

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.3	
SC (µmhos/cm)	412	
Turbidity (ntu)		
H_2O Tmp. (°C)	9.9	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfil.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	VOA	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: 2257

Sample Team Member Signature:

KMCP-2A (DTW) 130.38

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-3B
Sample Date: 2-25-16
Sample Time: 1157 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: (calm) (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 49 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments

TD (ft): 161.53
SWL (ft): 151.61
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 0.75
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Paramaters or Notes
1213			9.9	3560	0.5	12.0	light yellow
1220			10.0	3580	0.25	12.3	" "
1225			10.0	3590	0.25	11.5	" "

Turbidity: (circle) clear slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	10.0	
SC (µmhos/cm)	3590	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.5	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KMCP-3A (DTW) 106.48

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-4B
Sample Date: 11 2 3
Sample Time: 2 - 2 5 - 16 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring– other:
Weather Conditions: calm (breeze) windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 45 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 25 Comments
TD (ft): 160.59
SWL (ft): 142.59
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
1135			8.7	1746	0.25	11.2	light yellow
1137			9.1	1860	0.25	11.3	" "
1140			9.2	1958	0.25	11.2	" "
1143			9.2	1916	0.25	11.3	" "

Turbidity: (circle) (clear) slight moderate very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	9.2	
SC (µmhos/cm)	1916	
Turbidity (ntu)		
H_2O Tmp. (°C)	11.3	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	F or UF	NaOH	Total/WAD/Free CN	
1	250 ml	F or UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: ID 54

Sample Team Member Signature:

KMCP-4A (DTW) 29.31

Water Sampling Form ~~ HF-430r1

Hydrometrics, Inc.
Consulting Scientists and Engineers

Project Name: Kaiser Mead
Project Code: 9088.00, Phase 002
Sample Team Member(s): Chavez
Laboratory Used: SVL Analytical

Site Designation:
Sample Code Number: KMCP-5B
Sample Date: 2-29-16
Sample Time: 920 (military)

If Duplicate Sample Collected, Please Record Below

Duplicate Sample Code #:
Duplicate Sample Time:

Site Conditions

New Site: Yes (No) Photo taken: Yes (No)
Site Type: DRY surface water process water
(monitoring well) domestic well adit seep
spring~ other:
Weather Conditions: (calm) breeze windy
no precip. rain snow
(clear) p. cloudy overcast
Air Temperature: °C 42 °F

For Groundwater Samples

well volume formula: V = (TD-SWL)x(Dia.²) 26 Comments

TD (ft): 152.39
SWL (ft): 143.23
Casing Diameter (I.D.") 2
Water Volume (V) (gal):
x 3=(gal.)
Actual Vol. Removed (gal.) 1
Water Level Recovery: slow moderate rapid

For Surface Water Samples

Flow Method: Marsh McBirney Volumetric Flume Weir Estimate
Other Flow or Description:
Flow: gpm cfs Staff Gage:

Field Parameter Stabilization

Time (military)	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/l)	pH	S.C. (µmhos/cm)	Purge Vol. (gal)	Temperature (°C)	Additional Parameters or Notes
934			8.6	468	0.25	7.5	Clear
940			8.3	445	0.25	8.4	"
945			8.3	447	0.25	8.3	"
949			8.3	446	0.25	8.5	"

Turbidity: (circle) clear moderate slight very

Sample Method: (describe) grab composite (pump) bailer other
Low flow sampling - dedicated bladder pump

Field Parameters

	Sample	Duplicate
ORP (mV)		
DO (mg/l)		
pH	8.3	
SC (µmhos/cm)	446	
Turbidity (ntu)		
H_2O Tmp. (°C)	8.5	
Color		
Other:		

Bottles Collected

Quantity	Size	Filter or Unfilt.	Preservative	Parameter	Additional Notes
1	250 ml	UF	NaOH	Total/WAD/Free CN	
1	250 ml	UF	Raw	Fluoride	
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			
	ml	F or UF			

Comments: IDS%

Sample Team Member Signature:

KMCP-5A (DTW) 94.97

W16C0052

FOR SVL USE ONLY
SVL JOB #

TEMP on Receipt: 8°C

CHAIN OF CUSTODY RECORD

Page 1 of 1

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil, 4 = Sediment, 5 = Rock, 6 = Rinsate, 7 = Oil
8 = Waste, 9 = Other: _____

Report to Company: Hydrometrics	Invoice Sent To: SAME
Contact: Tony Chavez	Contact:
Address:	Address:
Phone Number: 208 660 8548	Phone Number:
FAX Number:	FAX Number:
E-mail: achavez@hydrometrics.com	PO#:

Project Name: Kaiser Mead

Sampler's Signature:

Indicate State of sample origination: WA

	Sample ID	Collection			Misc.		Preservative(s)							Analyses Required										Rush Instructions (Days)	Comments
	Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, ø and o. Thanks!	Date	Time	Collected by: (Init.)	Matrix Type (From Table 1)	No. of Containers	Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Fluoride	Total & WAD CN	Free CN									
1	KM-4	3-2-16	1026	KC	2	2	✓					✓		✓	✓	✓									
2																									
3	W-24	3-2-16	1150	AC	1	2	✓					✓		✓	✓										
4	W-2326	"	1205	"	1	2	✓					✓		✓	✓										
5	W-195	"	1224	"	1	2	✓					✓		✓	✓										
6																									
7																									
8																									
9																									
10																								03/03/16 08:00	

Relinquished by:		Date: 3-2-16	Time: 1330	Received by:		Date: 03/02/16	Time: 1330
Relinquished by:		Date: 3/03/16	Time: 0800	Received by:		Date: 3/3/16	Time: 13:20

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

SVL-COC 01/14

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 03/02/16 **By:** CJohann

SVL Work No: W16C0052

GW, SW

Item	Description	V	VC	NV	NA	Comments
1	Client or project name					Hydrometrics, Inc. - CDA
2	Date and time of receipt at lab					3-2-16 1330
3	Received by					PJ
4	Temperature blank or cooler temperature					Temp. 8 °C. >6°C QL6
5	Were the sample(s) received on ice					Yes
6	Custody tape/bottle seals					
7	Condition of samples upon receipt (leaking; bubbles in VOA vials					
8	Sample numbers/IDs agree with COC					
9	Sample date & time agree with COC					
10	Number of containers for each sample					
11	The correct preservative for the analysis requested					Cool NaOH pres. by Client
12	Did an SVL employee preserve sample(s) upon receipt					
12	Type of container for each sample / volume received					
13	Analysis requested for each sample					
14	Sample matrix description					
15	COC properly completed & legible					
16	Corrections properly made (initials & date)					
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)					KLG Fluoride (4) Total & WAD CN (4) Free CN (1)
18	Shipper's air bill					

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: _____

W6C0012

Page 1 of 1

CHAIN OF CUSTODY RECORD

SVL Analytical, Inc. • One Government Gulch • Kellogg, ID 83837 • (208) 784-1258 • FAX: (208) 783-0891

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SVL JOB #

TEMP on Receipt: 5°C

Table 1. – Matrix Type
1 = Surface Water, 2 = Ground Water
3 = Soil, 4 = Sediment, 5 = Rock, 6 = Rinsate, 7 = Oil
8 = Waste, 9 = Other:

Report to Company: Hydrometrics
Contact: Izzy Chavez
Address:
Phone Number: 208-660-3548
FAX Number:
E-mail: achavez@hydrometrics.com

Invoice Sent To: SAME
Contact:
Address:
Phone Number:
FAX Number:
PO#:

Project Name: Kaiser Mead
Sampler's Signature:

Indicate State of sample origination: WA

	Sample ID	Collection			Misc.		Preservative(s)							Analyses Required														Rush Instructions (Days)	Comments
	Please take care to distinguish between: 1 and I, 2 and Z, 5 and S, ø and o. Thanks!	Date	Time	Collected by: (Init.)	Matrix Type (From Table 1)	No. of Containers	Unpreserved	HNO_3 Filtered	HNO_3 Unfiltered	HCl	H_2SO_4	NaOH	Other (Specify)	Fluoride	Total, WAD, Free CN													
1	KM-1	2-29-16	1540	KC	2	2	✓					✓		✓	✓													-01
2	KM-2		1343																									
3	KM-3		954																									
4	KM-5		1418																									
5	KM-6		1453																									
6	KMCP-1B		1109																									
7	KMCP-2B		1033																									
8	KMCP-3B		1225																									
9	KMCP-4B		1143																									
10	KMCP-5B		949																									

Relinquished by:	Date: 3-1-16	Time: 1:00	Received by:	Date: 03/01/16	Time: 1300
Relinquished by:	Date: 03/02/16	Time:	Received by:	Date: 03/02/16	Time: 815

* Sample Reject: ☐ Return ☐ Dispose ☐ Store (30 Days)

White: LAB COPY Yellow: CUSTOMER COPY

3/2/16 10:30

SVL-COC 01/14

SAMPLE RECEIPT/CHAIN-OF -CUSTODY CHECKLIST

The following items were checked for completeness, correctness, and compliance to project specifications using the Chain-of-Custody (COC) and other supporting information.

Date of acceptance: 03/01/16 **By:** Yohanna

SVL Work No: W6C0012 GW

Item	Description	V	VC	NV	NA	Comments Kaiser Mead
1	Client or project name	✓				Hydrometrics Tony Chavez
2	Date and time of receipt at lab	✓				03/01/16 @ 1300
3	Received by	✓				Y
4	Temperature blank or cooler temperature	✓				Temp. 5 °C.
5	Were the sample(s) received on ice	✓				Y
6	Custody tape/bottle seals				✓	
7	Condition of samples upon receipt (leaking; bubbles in VOA vials	✓				GOOD
8	Sample numbers/IDs agree with COC	✓				
9	Sample date & time agree with COC	✓				
10	Number of containers for each sample	✓				
11	The correct preservative for the analysis requested	✓				Cool NaOH pres by client
12	Did an SVL employee preserve sample(s) upon receipt				✓	NO
12	Type of container for each sample / volume received	✓				
13	Analysis requested for each sample	✓				
14	Sample matrix description	✓				
15	COC properly completed & legible	✓				
16	Corrections properly made (initials & date)				✓	
17	Additional comments or records of sample condition or treatment (unlisted or missing samples at laboratory, aliquot taken, sample hold, samples subcontracted, communications between client and laboratory)				✓	Klg: CN; Total, WAD, Free CN, Fluoride } 10
18	Shipper's air bill				✓	WALK-IN

V- Verified **VC- Verified Corrections Made** **NV-Not Verified** **NA- Not Applicable**

Additional Comments: Started WO entry; please continue, only entered sample #1 Y

www.svl.net One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KM-1	W6C0012-01	Ground Water	29-Feb-16 15:40	AC	01-Mar-2016	
KM-2	W6C0012-02	Ground Water	29-Feb-16 13:43	AC	01-Mar-2016	
KM-3	W6C0012-03	Ground Water	29-Feb-16 08:54	AC	01-Mar-2016	
KM-5	W6C0012-04	Ground Water	29-Feb-16 14:18	AC	01-Mar-2016	
KM-6	W6C0012-05	Ground Water	29-Feb-16 14:53	AC	01-Mar-2016	
KMCP-1B	W6C0012-06	Ground Water	29-Feb-16 11:09	AC	01-Mar-2016	
KMCP-2B	W6C0012-07	Ground Water	29-Feb-16 10:33	AC	01-Mar-2016	
KMCP-3B	W6C0012-08	Ground Water	29-Feb-16 12:25	AC	01-Mar-2016	
KMCP-4B	W6C0012-09	Ground Water	29-Feb-16 11:43	AC	01-Mar-2016	
KMCP-5B	W6C0012-10	Ground Water	29-Feb-16 09:49	AC	01-Mar-2016	

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

Case Narrative

SVL is not accredited in the State of WA for WAD CN in non-potable water.

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Hydrometrics Inc. - CDA
2736 White Pines Drive
Coeur d Alene, ID 83815

Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-1**
SVL Sample ID: **W6C0012-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Feb-16 15:40
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.332	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 11:54	
EPA 335.4	**Cyanide (total)**	45.0	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:22	D2,M3
SM 4500-CN-I	**Cyanide (WAD)**	0.956	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:02	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	73.6	mg/L	5.00	2.05	50	W611061	DT	03/14/16 19:48	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

Kirby Gray
Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-2**
SVL Sample ID: **W6C0012-02 (Ground Water)**

Sampled: 29-Feb-16 13:43
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.73	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:35	D2
EPA 335.4	**Cyanide (total)**	97.1	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:24	D2
SM 4500-CN-I	**Cyanide (WAD)**	4.19	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:04	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	15.5	mg/L	2.50	1.02	25	W611061	DT	03/14/16 20:04	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Technical Director

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-3**
SVL Sample ID: **W6C0012-03 (Ground Water)**

Sampled: 29-Feb-16 08:54
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 11:58	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:26	
SM 4500-CN-I	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:06	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	< 0.100	mg/L	0.100	0.041		W611061	DT	03/14/16 20:20	

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-5**
SVL Sample ID: **W6C0012-04 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Feb-16 14:18
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.490	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:00	
EPA 335.4	**Cyanide (total)**	83.7	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:28	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.02	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:08	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	59.7	mg/L	5.00	2.05	50	W611061	DT	03/14/16 21:08	D2

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KM-6**
SVL Sample ID: **W6C0012-05 (Ground Water)**

Sampled: 29-Feb-16 14:53
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.565	mg/L	0.0100	0.0022	2	W611071	MAD	03/09/16 12:37	D2
EPA 335.4	**Cyanide (total)**	97.8	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:30	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.58	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:10	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	52.8	mg/L	5.00	2.05	50	W611061	DT	03/14/16 21:24	D2

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-1B**
SVL Sample ID: **W6C0012-06 (Ground Water)**

Sampled: 29-Feb-16 11:09
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.0170	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:04	
EPA 335.4	**Cyanide (total)**	0.197	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:38	
SM 4500-CN-I	**Cyanide (WAD)**	0.0210	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:12	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.670	mg/L	0.100	0.041		W611061	DT	03/14/16 22:11	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-2B**
SVL Sample ID: **W6C0012-07 (Ground Water)**

Sampled: 29-Feb-16 10:33
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:12	
EPA 335.4	**Cyanide (total)**	0.0680	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:40	
SM 4500-CN-I	**Cyanide (WAD)**	0.0120	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:14	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.452	mg/L	0.100	0.041		W611061	DT	03/14/16 22:43	

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-3B**
SVL Sample ID: **W6C0012-08 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Feb-16 12:25
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.59	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:14	D2
EPA 335.4	**Cyanide (total)**	60.7	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:42	D2
SM 4500-CN-I	**Cyanide (WAD)**	2.05	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:22	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	30.0	mg/L	2.50	1.02	25	W611061	DT	03/14/16 22:59	D2

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-4B**
SVL Sample ID: **W6C0012-09 (Ground Water)**

Sampled: 29-Feb-16 11:43
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	1.15	mg/L	0.0500	0.0110	10	W611071	MAD	03/09/16 12:39	D2
EPA 335.4	**Cyanide (total)**	29.3	mg/L	5.00	2.20	500	W610188	MAD	03/08/16 11:44	D2
SM 4500-CN-I	**Cyanide (WAD)**	1.28	mg/L	0.100	0.0260	10	W610187	MAD	03/08/16 13:24	D2
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	15.5	mg/L	1.00	0.410	10	W611061	DT	03/14/16 23:15	D2

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Client Sample ID: **KMCP-5B**
SVL Sample ID: **W6C0012-10 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 29-Feb-16 09:49
Received: 01-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	**Cyanide (free) @ pH 6**	0.0120	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:18	
EPA 335.4	**Cyanide (total)**	0.132	mg/L	0.0100	0.0044		W610188	MAD	03/08/16 11:46	
SM 4500-CN-I	**Cyanide (WAD)**	0.0170	mg/L	0.0100	0.0026		W610187	MAD	03/08/16 13:26	
Anions by Ion Chromatography										
EPA 300.0	**Fluoride**	0.134	mg/L	0.100	0.041		W611061	DT	03/14/16 23:30	

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0011	0.0100	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0044	0.0100	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W610187	08-Mar-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.041	0.100	W611061	14-Mar-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.152	0.150	101	90 - 110	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	0.141	0.150	94.0	90 - 110	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.139	0.150	92.7	90 - 110	W610187	08-Mar-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	1.95	2.00	97.4	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.444	0.332	0.100	112	79 - 121	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	46.1	45.0	0.100	R > 4S	90 - 110	W610188	08-Mar-16	D2,M3
EPA 335.4	Cyanide (total)	mg/L	0.0950	<0.0100	0.100	95.0	90 - 110	W610188	08-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.290	0.201	0.100	89.0	75 - 125	W610187	08-Mar-16	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.00	<0.100	2.00	95.6	90 - 110	W611061	14-Mar-16	
EPA 300.0	Fluoride	mg/L	2.63	0.670	2.00	98.2	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.441	0.444	0.100	109	0.7	20	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	45.5	46.1	0.100	R > 4S	1.2	20	W610188	08-Mar-16	D2,M3
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.289	0.290	0.100	88.0	0.3	20	W610187	08-Mar-16	
Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	2.01	2.00	2.00	96.2	0.6	20	W611061	14-Mar-16	

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Project Name: Kaiser Groundwater 2015
Work Order: **W6C0012**
Reported: 15-Mar-16 11:40

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to spike level. The LCS was acceptable.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable

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Hydrometrics Inc. - CDA
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Project Name: Kaiser
Work Order: **W6C0052**
Reported: 16-Mar-16 11:52

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Sampled By	Date Received	Notes
KM-4	W6C0052-01	Ground Water	02-Mar-16 10:26	AC	02-Mar-2016	Q6
W-24	W6C0052-02	Surface Water	02-Mar-16 11:50	AC	02-Mar-2016	Q6
W-2326	W6C0052-03	Surface Water	02-Mar-16 12:05	AC	02-Mar-2016	Q6
W-195	W6C0052-04	Surface Water	02-Mar-16 12:24	AC	02-Mar-2016	Q6

Solid samples are analyzed on an as-received, wet-weight basis, unless otherwise requested. Non-Detects are reported at the MDL.
Sample preparation is defined by the client as per their Data Quality Objectives.
This report supercedes any previous reports for this Work Order. The complete report includes pages for each sample, a full QC report, and a notes section.
The results presented in this report relate only to the samples, and meet all requirements of the NELAC Standards unless otherwise noted.

(Q6) SVL received the following containers outside of published EPA guidelines for preservation temperatures (0-6°C).
The guidelines do not pertain to nitric-preserved metals.

Default Cooler (Received Temperature: 8.0°C)

Labnumber	Container	Client ID	Labnumber	Container	Client ID
W6C0052-01 A	Raw HDPE	KM-4	W6C0052-01 B	NaOH HDPE	KM-4
W6C0052-02 A	Raw HDPE	W-24	W6C0052-02 B	NaOH HDPE	W-24
W6C0052-03 A	Raw HDPE	W-2326	W6C0052-03 B	NaOH HDPE	W-2326
W6C0052-04 A	Raw HDPE	W-195	W6C0052-04 B	NaOH HDPE	W-195

Case Narrative

SVL is not accredited in the State of WA for WAD CN in non-potable water.

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Project Name: Kaiser
Work Order: **W6C0052**
Reported: 16-Mar-16 11:52

Client Sample ID: **KM-4**
SVL Sample ID: **W6C0052-01 (Ground Water)**

Sample Report Page 1 of 1

Sampled: 02-Mar-16 10:26
Received: 02-Mar-16
Sampled By: AC

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	< 0.0100	mg/L	0.0100	0.0011		W611071	MAD	03/09/16 12:20	
EPA 335.4	Cyanide (total)	< 0.0100	mg/L	0.0100	0.0044		W611125	MAD	03/15/16 11:43	
SM 4500-CN-I	Cyanide (WAD)	< 0.0100	mg/L	0.0100	0.0026		W611126	MAD	03/14/16 10:34	
Anions by Ion Chromatography										
EPA 300.0	Fluoride	< 0.100	mg/L	0.100	0.041		W611061	DT	03/14/16 23:46	

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

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Project Name: Kaiser
Work Order: **W6C0052**
Reported: 16-Mar-16 11:52

Quality Control - BLANK Data

Method	Analyte	Units	Result	MDL	MRL	Batch ID	Analyzed	Notes
Classical Chemistry Parameters								
ASTM D7237	Cyanide (free) @ pH 6	mg/L	<0.0100	0.0011	0.0100	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	<0.0100	0.0044	0.0100	W611125	15-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	<0.0100	0.0026	0.0100	W611126	14-Mar-16	
Anions by Ion Chromatography								
EPA 300.0	Fluoride	mg/L	<0.100	0.041	0.100	W611061	14-Mar-16	

Quality Control - LABORATORY CONTROL SAMPLE Data

Method	Analyte	Units	LCS Result	LCS True	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters									
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.152	0.150	101	90 - 110	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	0.146	0.150	97.3	90 - 110	W611125	15-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.137	0.150	91.3	90 - 110	W611126	14-Mar-16	
Anions by Ion Chromatography									
EPA 300.0	Fluoride	mg/L	1.95	2.00	97.4	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE Data

Method	Analyte	Units	Spike Result	Sample Result (R)	Spike Level (S)	% Rec.	Acceptance Limits	Batch ID	Analyzed	Notes
Classical Chemistry Parameters										
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.444	0.332	0.100	112	79 - 121	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	0.324	0.205	0.100	119	90 - 110	W611125	15-Mar-16	M1
EPA 335.4	Cyanide (total)	mg/L	0.0970	<0.0100	0.100	97.0	90 - 110	W611125	15-Mar-16	
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.0610	<0.0100	0.100	56.0	75 - 125	W611126	14-Mar-16	D2,M2
Anions by Ion Chromatography										
EPA 300.0	Fluoride	mg/L	2.00	<0.100	2.00	95.6	90 - 110	W611061	14-Mar-16	
EPA 300.0	Fluoride	mg/L	2.63	0.670	2.00	98.2	90 - 110	W611061	14-Mar-16	

Quality Control - MATRIX SPIKE DUPLICATE Data

Method	Analyte	Units	MSD Result	Spike Result	Spike Level	%R	RPD	RPD Limit	Batch ID	Analyzed	Notes
Classical Chemistry Parameters											
ASTM D7237	Cyanide (free) @ pH 6	mg/L	0.441	0.444	0.100	109	0.7	20	W611071	09-Mar-16	
EPA 335.4	Cyanide (total)	mg/L	0.317	0.324	0.100	112	2.2	20	W611125	15-Mar-16	M1
SM 4500-CN-I	Cyanide (WAD)	mg/L	0.0600	0.0610	0.100	55.0	1.7	20	W611126	14-Mar-16	D2,M2
Anions by Ion Chromatography											
EPA 300.0	Fluoride	mg/L	2.01	2.00	2.00	96.2	0.6	20	W611061	14-Mar-16	

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2736 White Pine Drive
Cocur d Alene, ID 83815

Project Name: Kaiser
Work Order: **W6C0052**
Reported: 16-Mar-16 11:52

Notes and Definitions

D2	Sample required dilution due to high concentration of target analyte.
M1	Matrix spike recovery was high, but the LCS recovery was acceptable.
M2	Matrix spike recovery was low, but the LCS recovery was acceptable.
Q6	Sample was received above recommended temperature.
LCS	Laboratory Control Sample (Blank Spike)
RPD	Relative Percent Difference
UDL	A result is less than the detection limit
R > 4S	% recovery not applicable, sample concentration more than four times greater than spike level
<RL	A result is less than the reporting limit
MRL	Method Reporting Limit
MDL	Method Detection Limit
N/A	Not Applicable