



TECHNICAL MEMORANDUM

To: Mr. Aaron Wilcox
From: David Borys
Date: November 29, 2016
Subject: **Handy Mart – November 2016 Groundwater Monitoring Results**

INTRODUCTION

HydroCon Environmental, LLC (HydroCon) is submitting this technical memorandum to Wilcox & Flegel to document the work completed at 1410 Ocean Beach Highway in Longview, Washington (the site) in November 2016. The work was conducted according to our Master Services Agreement (MSA), dated July 11, 2014.

FIELD ACTIVITIES

On November 17, 2016, HydroCon personnel mobilized to the site to perform the groundwater monitoring. Upon arrival at the site, the well cap on each well was removed and the water level was allowed to equilibrate prior to measuring the depth to water (DTW). The depth to water in each well was measured using a clean electronic water level indicator. Water levels were measured at the scribed reference mark (north end of the top of the PVC casing) at each well. A table detailing the groundwater levels and elevations and a figure indicating the groundwater flow direction are included in the attachments (Table 1 and Figure 4).

HydroCon purged monitoring wells MW-1 through MW-3 with a low flow peristaltic pump equipped with a new length of LDPE tubing attached to a new length of silicone tubing. Field parameters (pH, temperature, turbidity, and specific conductivity) along with depth to water measurements were recorded on a Groundwater Sample Collection form (Attachment A). Purging was completed when the field parameters had stabilized.

Samples were collected immediately after purging and placed in labeled laboratory-prepared sample bottles. The samples were shipped in an iced cooler along with chain-of-custody documentation to Apex Laboratory in Tigard, Oregon for analysis.

A total of three groundwater samples were collected for laboratory analysis. Each sample was analyzed for the following set of parameters:

- Gasoline Range Petroleum Hydrocarbons (GRPH) by Northwest Method NWTPH-Gx
- Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) by EPA Method 8260B.

GROUNDWATER CONDITIONS

Depth to water in the wells ranged from 6.37 to 7.93 feet below top of casing. Calculated groundwater elevations ranged from 13.15 to 13.26 feet MSL in the three wells. Groundwater flows towards the southeast at an approximate gradient of 0.004 feet/foot between MW-3 and MW-2.

SAMPLING RESULTS

GRPH was detected at a concentration 329 micrograms per liter ($\mu\text{g/L}$) in the sample collected from MW-3. This concentration is below the MTCA Method A Cleanup Level of 800 $\mu\text{g/L}$. Benzene was detected at a concentration of 0.314 $\mu\text{g/L}$ in the sample collected from MW-1; however, the detected concentration is below the MTCA Method A Cleanup Level of 5 $\mu\text{g/L}$. GRPH and the remaining BTEX constituents were not detected at concentrations above their respective laboratory method reporting limits (MRLs). A groundwater data table including the historical groundwater summary and the laboratory report are included in Table 2, and Attachment B, respectively.

DISCUSSION

The results of this quarterly groundwater monitoring indicate that all contaminants of concern at all site monitoring wells are below their respective MTCA Method A cleanup level. This is the third consecutive quarter where this condition has been observed. Ecology requires four consecutive quarters before a No Further Action (NFA) determination can be provided to a site.

Based on the analytical results, HydroCon recommends the following:

- Perform the next quarterly groundwater monitoring event during the first quarter (January-March) of 2017.

QUALIFICATIONS

HydroCon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time period. HydroCon makes no warranties, either express or implied, regarding the findings, conclusions or recommendations. Please note that HydroCon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report.

Findings and conclusions resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable or not present

during these services, and we cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this monitoring. Subsurface conditions may vary from those encountered at specific sampling locations or during other surveys, tests, assessments, investigations, or exploratory services; the data, interpretations and findings are based solely upon data obtained at the time and within the scope of these services.

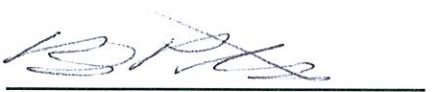
This report is intended for the sole use of **Wilcox & Flegel**. This report may not be used or relied upon by any other party without the written consent of HydroCon. The scope of services performed in execution of this evaluation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user.

The conclusions presented in this report are, in part, based upon subsurface sampling performed at selected locations and depths. There may be conditions between borings or samples that differ significantly from those presented in this report and which cannot be predicted by this study.


CLOSING

We appreciate the opportunity to perform these services for Wilcox & Flegel. Please contact the undersigned at (360) 703-6079 if you have any questions regarding the information provided in this letter report.

Sincerely,

The logo for HydroCon features the word "Hydro" in blue and "Con" in green, with a stylized blue and green water drop icon between them.

Brian J Pletcher
Senior Geologist/Project Manager



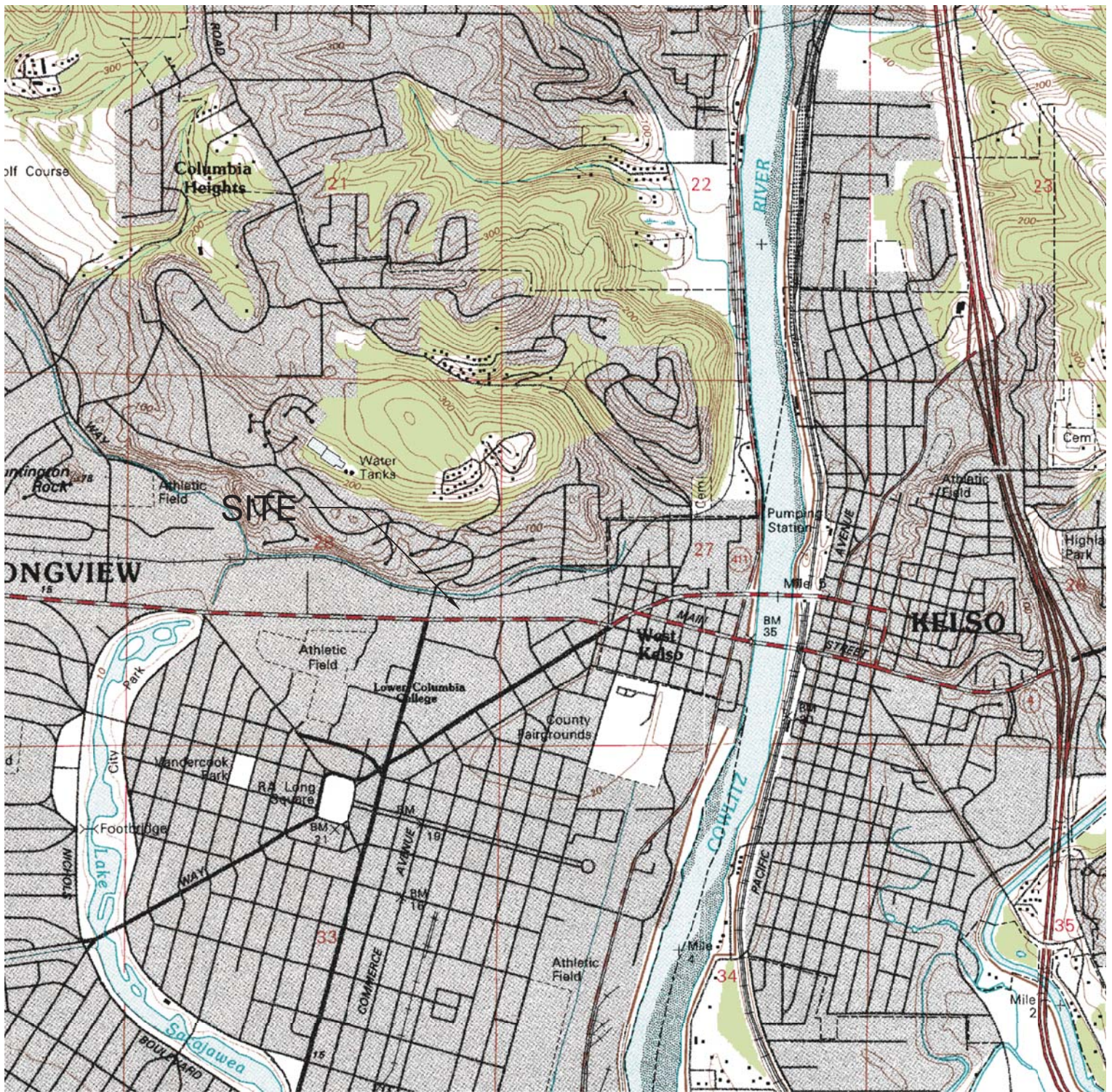
Craig Hultgren, LHG
Principal Geologist

Attachments

- Figure 1 – Site Location Map
- Figure 2 – Site Features Map
- Figure 3 – Groundwater Analytical Results
- Figure 4 – Groundwater Elevations and Contour Map
- Table 1 – Summary of Groundwater Elevations
- Table 2 - Summary of Groundwater Analytical Results
- Attachment A - Groundwater Sample Collection Field Forms
- Attachment B - Laboratory Report and Chain-of-Custody Documentation

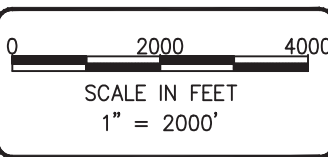


CRAIG HULTGREN



NOTE(S):

1. USGS, KELSO QUADRANGLE
WASHINGTON
7.5 MINUTE SERIES (TOPOGRAPHIC)





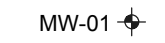
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DWN: JH
CHK: JH
APPROVED:
PRJ. MGR: DB
PROJECT NO:
2015-007-01

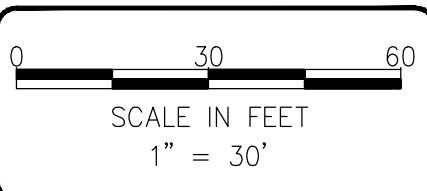
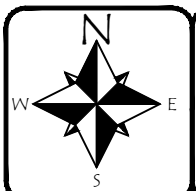
FIGURE 1
SITE LOCATION
HANDY MART
WILCOX & FLEGEL
1410 OCEAN BEACH HWY
LONGVIEW, WA

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LEGEND

-  PROPERTY BOUNDARY
-  BUILDING
-  MONITORING WELL



DATE: 11-29-16
 DWN: JH
 CHK: CD
 APPROVED:
 PRJ. MGR: DB
 PROJECT NO:
 2015-007-01

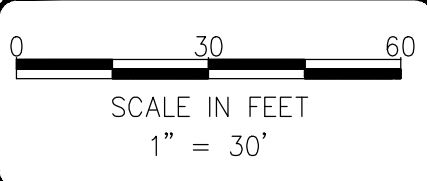
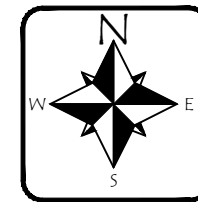
FIGURE 2
 SITE FEATURES
 HANDY MART
 WILCOX & FLEGEL
 1410 OCEAN BEACH HWY
 LONGVIEW, WA



Sample ID				MW01	MW02	MW03			
Lab Sample ID				A6K0601-02	A6K0601-03	A6K0601-01			
Collection Date				11/17/16	11/17/16	11/17/16			
Parameter	Method	Unit	Ecology MTCA Level A	Value	Q	Value	Q	Value	Q
Total Petroleum Hydrocarbons (TPH)									
TPH Gasoline	NWTPH-Gx	µg/L	800	<100		<100		329	
Select Volatile Organic Compounds (VOCs)									
Benzene	8021B	µg/L	5	0.314		<0.2		<0.2	
Toluene	8021B	µg/L	1,000	<1		<1		<1	
Ethylbenzene	8021B	µg/L	700	<0.5		<0.5		<0.5	
Total Xylenes	8021B	µg/L	1,000	<1.5		<1.5		<1.5	

LEGEND

- PROPERTY BOUNDARY
- BUILDING
- MW-01 MONITORING WELL





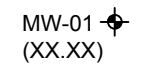
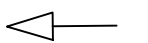

DATE: 11-29-16
 DWN: JH
 CHK: CD
 APPROVED:
 PRJ. MGR: DB
 PROJECT NO:
 2015-007-01

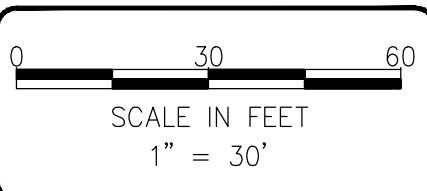
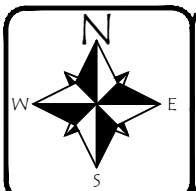
FIGURE 3
 SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
 NOVEMBER 2016
 WILCOX & FLEGEL - HANDY MART
 1410 OCEAN BEACH HWY
 LONGVIEW, WA

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LEGEND

-  PROPERTY BOUNDARY
-  BUILDING
-  MONITORING WELL (GROUNDWATER ELEV.)
-  APPROXIMATE DIRECTION OF GROUNDWATER FLOW
-  GROUNDWATER ELEVATION CONTOUR



DATE: 05-21-17
 DWN: JH
 CHK: CD
 APPROVED: BP
 PRJ. MGR: DB
 PROJECT NO:
 2015-007-01

FIGURE 4.0
 GROUNDWATER ELEVATION & CONTOUR MAP
 NOVEMBER 2016
 WILCOX & FLEGEL - HANDY MART
 1410 OCEAN BEACH HWY
 LONGVIEW, WA

Table 1
Summary of Historical Groundwater Elevations
Handy Mart
Longview, Washington
HydroCon Project Number 2015-007.1

Monitoring Well ID	Date	TOC Elevation	Depth to Water	Groundwater Elevation
MW-1	4/14/16	21.12	8.03	13.09
	8/10/16		10.45	10.67
	11/17/16		7.93	13.19
MW-2	4/14/16	19.98	6.79	13.19
	8/10/16		8.41	11.57
	11/17/16		6.83	13.15
MW-3	4/14/16	19.63	6.41	13.22
	8/10/16		8.02	11.61
	11/17/16		6.37	13.26

Notes:

TOC = Top of well casing

Table 2
Summary of Groundwater Analytical Results
Handy Mart, Longview, Washington
HydroCon Project Number 2014-007.01

		GRPH [1]	Benzene [2]	Toluene [2]	Ethylbenzene [2]	Total Xylenes [2]
Cleanup Level*		800	5	1,000	700	1,000
Monitoring Well ID	Date Sampled					
MW-1	9/24/15	<100	6.1	<1	<1	<3
	2/2/16	<100	6.6	<1	<1	<3
	4/14/16	<100	3.7	<1	<0.5	<1.5
	8/10/16	<100	2.2	<1	<0.5	<1.5
	11/17/16	<100	0.314	<1	<0.5	<1.5
MW-2	9/24/15	460	<1	4.4	<1	3.5
	2/2/16	<100	2.7	<1	<1	<3
	4/14/16	<100	1.41	<1	<0.5	<1.5
	8/10/16	<100	<0.2	<1	<0.5	<1.5
	11/17/16	<100	<0.2	<1	<0.5	<1.5
MW-3	9/24/15	<100	<1	<1	<1	<3
	2/2/16	210	<1	3.7	<1	<3
	4/14/16	310	<0.2	<1	<0.5	<1.5
	8/10/16	326	<0.2	<1	<0.5	<1.5
	11/17/16	329	<0.2	<1	<0.5	<1.5

Notes:

* = Washington State Model Toxics Control Act (MTCA) Method A Cleanup Level for Groundwater (rev. October 12, 2007)

[1] = Gasoline Range Petroleum Hydrocarbons (GRPH) by Northwest Method NWTPH-Gx

[2] = Volatile Organic Compounds (VOCs) by EPA Methods 8260B

< = Indicates compound not detected above the laboratory Method Reporting Limit (MRL) shown.

All values shown are in micrograms per liter (µg/L) (parts per billion).

Highlighted cell indicates compound detected above cited MTCA Method A Cleanup Level.

ATTACHMENT A
GROUNDWATER SAMPLE COLLECTION FIELD FORMS



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW01

Project Name: <u>Handy Mart</u>	Sample I.D. <u>MW01</u>	Time: <u>1505</u>
Hydrocon Project #: <u>2015-007-01</u>	Field Duplicate I.D. _____	Time: _____
Date: <u>11/17/16</u>	Personnel: <u>Chris Duschel</u>	

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other 1"
 Comments _____

PURGING INFORMATION

Total well depth 19.06 ft Bottom: Hard Soft Not measured Screen Interval(s): _____
 Depth to product NM ft
 Depth to water 6.83 ft Intake Depth (BTOC) 11' Begin Purging Well: 1445
 Casing volume 12.23 ft (H₂O) X 0.04 gal/ft = 0.489 gal. X 3 = 1.467 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other Backfilled

FIELD PARAMETERS

Odor and/or Sheen: light - moderate
nope

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)	
1442	x		16.44	0.590	4.83	6.21	-31.9	27.6	
1451	↓		17.52	.622	4.60	6.29	-50.6	43.6	
1454		-10	17.35	.611	4.48	6.28	-64.4	49.9	
1457			17.38	.615	4.46	6.28	-70.6	34.1	
1500			17.29	.622	4.45	6.28	-75.3	19.6	
1503		↓		17.25	.629	4.44	6.29	-79.1	8.36

Sample @ 1505

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: _____

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
<u>40 ml VOA</u>	<u>3</u>	<u>HCl</u>	<u>No</u> 0.45 0.10	<u>Gx / BTEX</u>
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW02

Project Name: <u>Handy Murt</u>	Sample I.D. <u>MW02</u>	Time: <u>1420</u>
Hydrocon Project #: <u>2015-007-01</u>	Field Duplicate I.D. _____	Time: _____
Date: <u>11/17/16</u>	Personnel: <u>Chris Daschel</u>	

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other 1"
 Comments: _____

PURGING INFORMATION

Total well depth 19.50 ft Bottom: Hard Soft Not measured Screen Interval(s): _____
 Depth to product NM ft
 Depth to water 6.37 ft Intake Depth (BTOC) 12' Begin Purging Well: 1359
 Casing volume 13.13 ft (H₂O) X .04 gal/ft = .52 gal. X 3 = 1.56 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other Bucketed

FIELD PARAMETERS

Odor and/or Sheen: _____

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (± 10% or ≤10)
1404	—		16.34	.151	4.65	6.62	-16.1	482
1407	↓	.12	16.60	.156	4.51	6.41	-17.1	221
1410			16.77	.171	5.02	6.38	-44.3	49.5
1413			16.67	.173	7.77	6.36	-48.6	49.8
1416			16.43	.175	4.66	6.35	-54.2	37.8
1419			16.65	.177	4.86	6.33	-59.6	21.9
	6.52							
Sample @ 1420								

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: abundant orange algae @ start of purging

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
40ml VOA	3	HCl	<input checked="" type="checkbox"/> No 0.45 0.10	Gx / BTEX
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____



GROUNDWATER SAMPLE COLLECTION FORM

Well I.D. Number: MW03

Project Name: <u>Honey Mart</u>	Sample I.D. <u>MW03</u>	Time: <u>1335</u>
Hydrocon Project #: <u>2017-00201</u>	Field Duplicate I.D. _____	Time: _____
Date: <u>11/17/16</u>	Personnel: <u>Chris Duschel</u>	

WELL INFORMATION

Monument condition: Good Needs repair Water in Monument
 Well cap condition: Good Replaced Needs replacement Surface Water in Well
 Headspace reading: Not measured _____ ppm Odor _____
 Well diameter: 2-inch 4-inch 6-inch Other 8 1/2" 1"
 Comments: _____

PURGING INFORMATION

Total well depth 19.15 ft Bottom: Hard Soft Not measured Screen Interval(s): _____
 Depth to product NM ft
 Depth to water 7.93 ft Intake Depth (BTOC) 12' Begin Purging Well: 1307
 Casing volume 11.22 ft (H₂O) X .04 gal/ft = .49 gal. X 3 = 1.47 gal.
 Volume Conversion Factors: 3/4"=0.02 gal/ft 1"=0.04 gal/ft 2"=0.16 gal/ft 4"=0.65 gal/ft 6"= 1.47 gal/ft

PURGING/DISPOSAL METHOD

Pump type Peristaltic Centrifugal Dedicated Bladder Non-Dedicated Bladder Other _____
 Bailer type: _____ Water Disposal: Drummed Remediation System Other Recharged

FIELD PARAMETERS

Odor and/or Sheen: Very slight odor
no sheen

Time	Water Level (BTOC)	Purge Rate (L/min)	Temp. (°C)	Sp. Cond. (mS/cm) (±3%)	Dissolved Oxygen (±10% or ≤1.00 ±0.2)	pH (SU) (±0.1)	ORP (mV)	Turbidity (NTU) (±10% or ≤10)	
1310	NM	0.09	17.33	.392	4.91	5.99	69.3	73.2	
1313	↓		17.29	.466	4.84	5.92	34.4	57.8	
1316			17.22	.550	4.73	5.97	-2.5	35.9	
1319			17.29	.631	4.68	6.06	-34.3	22.3	
1322			17.40	.681	4.55	6.14	-55.1	14.5	
1325		↓		17.38	.713	4.51	6.21	-68.9	9.66
1328				17.36	.734	4.46	6.25	-20.8	✓
1331			17.37	.747	4.44	6.28	-28.0		
1334	10.11		17.22	.758	4.43	6.31	-74.2		
Sample @ 1335									

Stabilization achieved if three successive measurements for pH, Conductivity and Turbidity or Dissolved Oxygen are recorded within their perspective stabilization criteria. A minimum of six measurements should be recorded.

Purging Comments: Red/Orange algae in purge water

SAMPLE INFORMATION

Container Type	Bottle Count	Preservative	Field Filtered?	Analysis
<u>40 ml VOA</u>	<u>3</u>	<u>HCl</u>	No 0.45 0.10	<u>Gx / BTEX</u>
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	
			No 0.45 0.10	

Sampling Comments: _____

ATTACHMENT B
LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, November 22, 2016

Dave Borys
HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

RE: Handy Mart / 2015-007-01

Enclosed are the results of analyses for work order A6K0601, which was received by the laboratory on 11/17/2016 at 6:10:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: ldomenighini@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **Handy Mart**
Project Number: 2015-007-01
Project Manager: Dave Borys

Reported:
11/22/16 15:13

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	PDF Amended	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	= MW2	A6K0601-01	Water	11/17/16 15:05	11/17/16 18:10
MW02	= MW3	A6K0601-02	Water	11/17/16 14:20	11/17/16 18:10
MW03	= MW1	A6K0601-03	Water	11/17/16 13:35	11/17/16 18:10

Apex Laboratories



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Lisa Domenighini, Client Services Manager

HydroCon LLC
 510 Allen St. Suite B
 Kelso, WA 98626

Project: **Handy Mart**
 Project Number: 2015-007-01
 Project Manager: Dave Borys

Reported:
 11/22/16 15:13

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
MW01 (A6K0601-01)			Matrix: Water		Batch: 6110710			
Gasoline Range Organics	ND	---	100	ug/L	1	11/18/16 16:06	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>109 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW02 (A6K0601-02)			Matrix: Water		Batch: 6110710			
Gasoline Range Organics	329	---	100	ug/L	1	11/18/16 16:56	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 96 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>104 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
MW03 (A6K0601-03)			Matrix: Water		Batch: 6110710			
Gasoline Range Organics	ND	---	100	ug/L	1	11/18/16 16:31	NWTPH-Gx (MS)	
<i>Surrogate: 4-Bromofluorobenzene (Sur)</i>			<i>Recovery: 101 %</i>	<i>Limits: 50-150 %</i>	"	"	"	
<i>1,4-Difluorobenzene (Sur)</i>			<i>110 %</i>	<i>Limits: 50-150 %</i>	"	"	"	

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Lisa Domenighini, Client Services Manager

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HydroCon LLC
510 Allen St. Suite B
Kelso, WA 98626

Project: **Handy Mart**
Project Number: 2015-007-01
Project Manager: Dave Borys

Reported:
11/22/16 15:13

ANALYTICAL SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting		Dilution	Date Analyzed	Method	Notes
			Limit	Units				
MW01 (A6K0601-01)			Matrix: Water		Batch: 6110710			
Benzene	ND	---	0.200	ug/L	1	11/18/16 16:06	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 109 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>102 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>104 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
MW02 (A6K0601-02)			Matrix: Water		Batch: 6110710			
Benzene	ND	---	0.200	ug/L	1	11/18/16 16:56	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 104 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>107 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
MW03 (A6K0601-03)			Matrix: Water		Batch: 6110710			
Benzene	0.314	---	0.200	ug/L	1	11/18/16 16:31	EPA 8260B	
Toluene	ND	---	1.00	"	"	"	"	
Ethylbenzene	ND	---	0.500	"	"	"	"	
Xylenes, total	ND	---	1.50	"	"	"	"	
<i>Surrogate: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 110 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>Limits: 80-120 %</i>	"	"	"	
<i>4-Bromofluorobenzene (Surr)</i>			<i>104 %</i>	<i>Limits: 80-120 %</i>	"	"	"	

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Project: **Handy Mart**
 Project Number: 2015-007-01
 Project Manager: Dave Borys

Reported:
 11/22/16 15:13

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110710 - EPA 5030B						Water						
Blank (6110710-BLK1)						Prepared: 11/18/16 10:20 Analyzed: 11/18/16 12:23						
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	---	100	ug/L	1	---	---	---	---	---	---	---
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 99 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		110 %		50-150 %		"						
LCS (6110710-BS2)						Prepared: 11/18/16 10:20 Analyzed: 11/18/16 11:59						
NWTPH-Gx (MS)												
Gasoline Range Organics	470	---	100	ug/L	1	500	---	94	70-130%	---	---	---
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 93 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		100 %		50-150 %		"						
Duplicate (6110710-DUP1)						Prepared: 11/18/16 11:56 Analyzed: 11/18/16 17:21						
QC Source Sample: MW02 (A6K0601-02)												
NWTPH-Gx (MS)												
Gasoline Range Organics	309	---	100	ug/L	1	---	329	---	---	6	30%	---
Surr: 4-Bromofluorobenzene (Sur)		Recovery: 95 %		Limits: 50-150 %		Dilution: 1x						
1,4-Difluorobenzene (Sur)		101 %		50-150 %		"						



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QUALITY CONTROL (QC) SAMPLE RESULTS

BTEX Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110710 - EPA 5030B						Water						
Blank (6110710-BLK1)						Prepared: 11/18/16 10:20 Analyzed: 11/18/16 12:23						
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	---	---	---	---	---	---
Toluene	ND	---	1.00	"	"	---	---	---	---	---	---	---
Ethylbenzene	ND	---	0.500	"	"	---	---	---	---	---	---	---
Xylenes, total	ND	---	1.50	"	"	---	---	---	---	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 110 %</i>	<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>			<i>102 %</i>	<i>80-120 %</i>		<i>"</i>						
LCS (6110710-BS1)						Prepared: 11/18/16 10:20 Analyzed: 11/18/16 11:34						
EPA 8260B												
Benzene	21.1	---	0.200	ug/L	1	20.0	---	106	70-130%	---	---	---
Toluene	20.4	---	1.00	"	"	"	---	102	"	---	---	---
Ethylbenzene	19.4	---	0.500	"	"	"	---	97	"	---	---	---
Xylenes, total	55.7	---	1.50	"	"	60.0	---	93	"	---	---	---
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 99 %</i>	<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>			<i>99 %</i>	<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>			<i>97 %</i>	<i>80-120 %</i>		<i>"</i>						
Duplicate (6110710-DUP1)						Prepared: 11/18/16 11:56 Analyzed: 11/18/16 17:21						
QC Source Sample: MW02 (A6K0601-02)												
EPA 8260B												
Benzene	ND	---	0.200	ug/L	1	---	ND	---	---	---	---	30%
Toluene	ND	---	1.00	"	"	---	ND	---	---	---	---	30%
Ethylbenzene	ND	---	0.500	"	"	---	ND	---	---	---	---	30%
Xylenes, total	ND	---	1.50	"	"	---	ND	---	---	---	---	30%
<i>Surr: 1,4-Difluorobenzene (Surr)</i>			<i>Recovery: 102 %</i>	<i>Limits: 80-120 %</i>		<i>Dilution: 1x</i>						
<i>Toluene-d8 (Surr)</i>			<i>103 %</i>	<i>80-120 %</i>		<i>"</i>						
<i>4-Bromofluorobenzene (Surr)</i>			<i>106 %</i>	<i>80-120 %</i>		<i>"</i>						

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Project: **Handy Mart**
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 11/22/16 15:13

SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110710							
A6K0601-01	Water	NWTPH-Gx (MS)	11/17/16 15:05	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00
A6K0601-02	Water	NWTPH-Gx (MS)	11/17/16 14:20	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00
A6K0601-03	Water	NWTPH-Gx (MS)	11/17/16 13:35	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00

BTEX Compounds by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110710							
A6K0601-01	Water	EPA 8260B	11/17/16 15:05	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00
A6K0601-02	Water	EPA 8260B	11/17/16 14:20	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00
A6K0601-03	Water	EPA 8260B	11/17/16 13:35	11/18/16 11:56	5mL/5mL	5mL/5mL	1.00

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Notes and Definitions

Qualifiers:

Notes and Conventions:

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry' designation are not dry weight corrected.
- RPD Relative Percent Difference
- MDL If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
- WMSC Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
- Batch QC Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
- Blank Policy Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.
- For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.
- Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
- *** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Project: **Handy Mart**
Project Number: 2015-007-01
Project Manager: Dave Borys

Reported:
11/22/16 15:13

APEX LABS COOLER RECEIPT FORM

Client: HydroCon Element WO#: A6 K06001
Project/Project #: Handy Mart / 2015-007-01

Delivery info:

Date/Time Received: 11/17/16 @ 1810 By: AKB
Delivered by: Apex Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: AKB : 11/17/16 @ 1810
Chain of Custody Included? Yes No Custody Seals? Yes No
Signed/Dated by Client? Yes No
Signed/Dated by Apex? Yes No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	<u>3.1</u>						
Received on Ice? (Y/N)	<u>(Y)</u>						
Temp. Blanks? (Y/N)	<u>(Y)</u>						
Ice Type: (Gel/Real/Other)	<u>(Gel)</u>						
Condition:							

Cooler out of temp? (Y/N) Possible reason why: _____
If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA (NA)
Samples Inspection: Inspected by: AKB : 11/17/16 @ 1815

All Samples Intact? Yes No Comments: _____

Bottle Labels/COCs agree? Yes No Comments: _____

Containers/Volumes Received Appropriate for Analysis? Yes No Comments: _____

Do VOA Vials have Visible Headspace? Yes No NA
Comments: _____

Water Samples: pH Checked and Appropriate (except VOAs): Yes No NA
Comments: _____

Additional Information:

Labeled by: KAL Witness: AKK Cooler Inspected by: AKB See Project Contact Form: Y

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