CRAWFORD HYDROLOGY LAB * CENTER FOR CAVE AND KARST STUDIES

Western Kentucky University

** Hydrogeologists, Geologists, Environmental Scientists **

** Karst Groundwater Investigations * Fluorescent Dye Analysis*

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LABORATORY REPORT SHEET

FLUORIMETRIC ANALYSIS RESULTS

Harley Davidson

Analysis requested by:

Jennifer Reese - GSC

TINOPAL CBS-X	FLUORESCEIN	EOSINE	D&C RED #28	RHODAMINE WT	SULPHORHODAMINE B
Fabric Brightening	**Color Index:**	**Color Index:**	**Color Index:**	**Color Index:**	**Color Index:**
Agent 351	Acid Yellow 73	Acid Red 87	Acid Red 92		Acid Red 52
Dye Receptor:	**Dye Receptor:**	**Dye Receptor:**	**Dye Receptor:**	**Dye Receptor:**	**Dye Receptor:**
Activated Charcoal	Activated Charcoal	Activated Charcoal	Activated Charcoal	Activated Charcoal	Activated Charcoal
Analysis by:	**Analysis by:**	**Analysis by:**	**Analysis by:**	**Analysis by:**	**Analysis by:**
Spectrofluorophotometer	Spectrofluorophotometer	Spectrofluorophotometer	Spectrofluorophotometer	Spectrofluorophotometer	Spectrofluorophotometer

CHARCOAL SAMPLES

						TINOPAL CBS-X			FLUORESCEIN			EOSINE			D&C RED #28			RHODAMINE WT			SULPHORHODAMINE B			
						PQL in Eluent: 0.100 ppb			PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			PQL in Eluent: 0.005 ppb			
						PQL in Water: 0.100 ppb			PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			PQL in Water: 0.010 ppb			
						λ in Eluent: 396.0 nm			λ in Eluent: 516.1 nm			λ in Eluent: 540.2 nm			λ in Eluent: 564.2 nm			λ in Eluent: 567.5 nm			λ in Eluent: 577.1 nm			
						λ in Water: 395.4 nm			λ in Water: 510.0 nm			λ in Water: 534.9 nm			λ in Water: 556.6 nm			λ in Water: 574.7 nm			λ in Water: 581.9 nm			
Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Comments
WATER-1			QA-ELUENT			ND			ND			ND			ND			ND			ND			ELUENT BLANK
EL-OB-1			QA-TINOPAL CBS-X			+	0.077		ND			ND			ND			ND			ND			.1ppb
EL-OB-1a			QA-TINOPAL CBS-X			+	0.976		ND			ND			ND			ND			ND			1ppb
EL-FL-1			QA-FLUORESCEIN			ND			+	0.004		ND			ND			ND			ND			0.005PPB
EL-FL-1a			QA-FLUORESCEIN			ND			+	0.098		ND			ND			ND			ND			.1 ppb
EL-EO-1			QA-EOSINE			ND			ND			+	0.006		ND			ND			ND			0.005PPB
EL-EO-1a			QA-EOSINE			ND			ND			+	0.098		ND			ND			ND			.1 ppb
EL-R3-1			QA-RED 3			ND			ND			ND			+	0.003		ND			ND			0.005PPB
EL-R3-1a			QA-RED 3			ND			ND			ND			+	0.097		ND			ND			.1 ppb
EL-R28-1			QA-D&C RED #28			ND			ND			ND			ND			+	0.003		ND			0.005PPB
EL-R28-1a			QA-D&C RED #28			ND			ND			ND			ND			+	0.103		ND			.1 ppb
EL-SRB-1			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	0.003		0.005PPB
EL-SRB-1a			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	0.102		.1 ppb
EH-OB-1			QA-TINOPAL CBS-X			+	10.693		ND			ND			ND			ND			ND			10ppb
EH-FL-1			QA-FLUORESCEIN			ND			+	10.624		ND			ND			ND			ND			10ppb
EH-EO-1			QA-EOSINE			ND			ND			+	9.804		ND			ND			ND			10ppb
EH-R3-1			QA-RED 3			ND						ND			+	10.644		ND			ND			10ppb
EH-R28-1			QA-D&C RED #28			ND			ND			ND			ND			+	10.081		ND			10ppb
EH-SRB-1			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	9.608		10ppb
EL-001-0	BG1	10/17/13	HD GM 1D	915		ND			B	0.018	509.0,POR	ND			IB	4.656	564.0	IB	4.943	564.0	ND			R28 OR RWT, PEAK COULD BE EITHER
EL-002-0	BG1	10/17/13	HDRUMW5	1040		ND			ND	0.012	NPI	ND			IB	0.053	561.0	ND	0.063	NPI	ND			
EL-003-0	BG1	10/17/13	HDRUMW6	1050		ND			ND			ND			IB	0.023	559.4	IB	0.023	563.8	ND			
EH-004-D	BG1	10/17/13	HDMW110	1118		ND			ND			ND			IB	397.0	564.4	IB	490.900	564.4	ND			DILUTED 1:100/R28 OR RWT, PEAKS WITHIN 5NM
EL-005-0	BG1	10/17/13	HDMW64S	1230		ND			ND	0.012	NPI	ND			IB	0.527	564.4	IB	0.584	564.4	ND			R28 OR RWT, PEAKS WITHIN 5NM
EH-006-DD	BG1	10/17/13	HDMW64D	1240		ND			ND			ND			IB	33162.0	564.6	IB	40935.000	564.6	ND			DILUTED 1:1000
EL-007-0	BG1	10/17/13	HDCOLEF	1410		ND			ND			ND			IB	3.327	564.4	IB	3.636	564.4	ND			R28 OR RWT, PEAKS WITHIN 5NM
EL-008-0	BG1	10/17/13	HD MW4	1430		ND			ND	0.017	NPI	ND			IB	3.575	564.4	IB	3.903	564.4	ND			R28 OR RWT, PEAKS WITHIN 5NM
EL-009-0	BG1	10/17/13	HD MW8	1455		ND			ND			ND			IB	0.104	562.8	IB	0.118	562.8	ND			R28 OR RWT, PEAKS WITHIN 5NM
EL-010-0	BG1	10/17/13	HD MW2	1510		ND			ND	0.010	NPI	ND			IB	0.691	564.2	IB	0.758	564.2	ND			
EL-011-0	BG1	10/17/13	HDMW12	1520		ND			ND	0.012	NPI	ND			ND	0.089	NPI	ND	0.096	NPI	ND			
EL-012-0	BG1	10/18/13	MDMW43S	0955		ND			ND			ND			IB	0.039	563.2	IB	0.044	563.2	ND			R28 OR RWT, PEAKS WITHIN 5NM
EL-013-0	BG1	10/18/13	HDMW43D	1005		ND			ND			ND			IB	0.025	561.4	IB	0.026	566.8	ND			
WATER-2			QA-ELUENT			ND			ND			ND			ND			ND			ND			ELUENT BLANK
EL-OB-2			QA-TINOPAL CBS-X			+	0.089		ND			ND			ND			ND			ND			.1ppb
EL-OB-2a			QA-TINOPAL CBS-X			+	1.062		ND			ND			ND			ND			ND			1ppb

ND Below Quantitation Limit
B Background
NS No Sample

\+ Positive
++ Very Positive
+++ Extremely Positive

Created 6/11/2015

CHARCOAL SAMPLES

Lab ID	Event	Date Collected	Feature Name	TIME	Peakfit	TINOPAL CBS-X PQL in Eluent: 0.100 ppb PQL in Water: 0.100 ppb λ in Eluent: 396.0 nm λ in Water: 395.4 nm			FLUORESCEIN PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 516.1 nm λ in Water: 510.0 nm			EOSINE PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 540.2 nm λ in Water: 534.9 nm			D&C RED #28 PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 564.2 nm λ in Water: 556.6 nm			RHODAMINE WT PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 567.5 nm λ in Water: 574.7 nm			SULPHORHODAMINE B PQL in Eluent: 0.005 ppb PQL in Water: 0.010 ppb λ in Eluent: 577.1 nm λ in Water: 581.9 nm			Comments
						Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	Results	Conc in ppb	Peak Center (nm)	
EL-FL-2			QA-FLUORESCEIN			ND			+	0.004		ND			ND			ND			ND			0.005PPB
EL-FL-2a			QA-FLUORESCEIN			ND			+	0.100		ND			ND			ND			ND			.1 ppb
EL-EO-2			QA-EOSINE			ND			ND			+	0.005		ND			ND			ND			0.005PPB
EL-EO-2a			QA-EOSINE			ND			ND			+	0.097		ND			ND			ND			.1 ppb
EL-R3-2			QA-RED 3			ND			ND			ND			+	0.006		ND			ND			0.005PPB
EL-R3-a			QA-RED 3			ND			ND			ND			+	0.106		ND			ND			.1 ppb
EL-R28-2a			QA-D&C RED #28			ND			ND			ND			ND			+	0.005		ND			0.005PPB
EL-R28-2			QA-D&C RED #28			ND			ND			ND			ND			+	0.103		ND			.1 ppb
EL-SRB-2			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	0.007		0.005PPB
EL-SRB-2a			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	0.097		.1 ppb
EH-OB-2			QA-TINOPAL CBS-X			+	10.827		ND			ND			ND			ND			ND			10ppb
EH-FL-2			QA-FLUORESCEIN			ND			+	10.472		ND			ND			ND			ND			10ppb
EH-EO-2			QA-EOSINE			ND			ND			+	9.833		ND			ND			ND			10ppb
EH-R3-2			QA-RED 3			ND			ND			ND			+	10.683		ND			ND			10ppb
EH-R28-2			QA-D&C RED #28			ND						ND			ND			+	10.074		ND			10ppb
EH-SRB-2			QA-SULPHORHODAMINE B			ND			ND			ND			ND			ND			+	9.583		10ppb

Analyzed by: D.Nedvidek on 10/22/13

Entered by: L.Bledsoe on 10/23/13

Comments:

DUP = Field Duplicate | NS = No Sample Recovered | Q = Lab Duplicate | IB = Initial Background

B = Background | GS = Grab Sample | + = Positive | ?+ = Questionable Positive, needs two hits in a row to equal +

ND = No Detection | NPI = No Peak Identified | POR = Peak Out of Range

ND Below Quantitation Limit
B Background
NS No Sample

\+ Positive
++ Very Positive
+++ Extremely Positive

Created 6/11/2015