

## Sager, John E - DNR

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**From:** Matthew Turner <Matthew.Turner@huskyenergy.com>  
**Sent:** Tuesday, August 20, 2019 8:00 AM  
**To:** Sager, John E - DNR  
**Cc:** David Beattie  
**Subject:** Latest Newton Creek Sample Results  
**Attachments:** SW Results (Husky Only)\_07262019.pdf; SW Results (Husky Only)\_07262019.xlsx

*Privileged and Confidential - Prepared at the Request of Counsel*

John,

Attached is a pdf table for our water sampling results from Newton Creek received through 7/26/19 and an excel sheet with the wider range of analytes through 7/22/19.

Let me know if you have any questions.

Thanks,

**Matt Turner**  
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**TABLE 1**  
**2018 SUPERIOR REFINERY FIRE**  
**SUMMARY OF WATER SAMPLING RESULTS FOR ONGOING MONITORING**  
(Results received through 7/26/2019)

Parameter Units			Benzene ug/l	Ethyl benzene ug/l	Toluene ug/l	Xylene, total ug/l	Methyl tertiary butyl ether (MTBE) ug/l	1,2,4-Trimethyl benzene ug/l	1,3,5-Trimethyl benzene ug/l	Naphthalene ug/l	Total PAHs ug/l	GRO ug/l	DRO mg/l	ORO mg/l	Oil and Grease mg/l	Perfluorooctane sulfonic acid (PFOS) ng/l	Perfluorooctanoic acid (PFOA) ng/l
Aquatic Life Protection Screening Level			None	None	None	None	None	None	None	None	None	None	None	30	None <sup>a</sup>	None <sup>a</sup>	
Human Health Screening Level			610	2920	15359	8300	None	330	4200	1200	None	None	None	None	None <sup>a</sup>	None <sup>a</sup>	
Location	Date	Sample Type															
21st St. Impoundment Start SW-5 Discontinued 5/10/18	4/26/2018		55.9	7.0	73.9	42.6	< 0.40	17.2	4.0	12.0	46 a <sup>1</sup>	474	5.6	6.3	11.1	--	--
	4/27/2018		33.7	4.7	40.2	29.0	< 0.40	15.2	3.7	8.2	ND	510	--	13.1	5.3	--	--
	4/28/2018		18.4	2.5	22.2	16.5	< 0.40	9.0	2.3	4.9	ND	330	--	10.3	2.4 j	--	--
	4/29/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	1.2 a <sup>2</sup>	< 8.9	5.7	5.0	1.9 j	410	40
	4/30/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.14	0.15	< 1.4	< 10	< 10
	5/02/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.081 b	0.080	< 1.4	20	< 10
	5/02/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9 *	0.076 b	0.073	< 1.4	40	20
	5/04/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.075 b	0.072	< 1.4	20	< 10
	5/06/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.098	0.13	< 1.5	90	20
	5/08/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	11.7 j	0.11 b	0.10	< 1.4	740	90
	5/10/2018		0.40 j	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.095 b	0.11 b	< 1.4	140	70
<sup>1</sup> Detections: 1-Methylnaphthalene 12.0, 2-Methylnaphthalene 17.2, Fluorene 3.1 j, Naphthalene 9.7, Phenanthrene 4.0. SVOC Parameters: 2-Methylphenol 5.7 j, 3,4-Methylphenol 10.9, Phenol 32.2																	
<sup>2</sup> Detections: Phenanthrene 1.2 j																	
21st St. Impoundment Upstream of Weir SW-4 Discontinued 5/10/18	4/29/2018		5.8	0.81 j	7.3	5.7	< 0.40	3.2	1.1	1.8 j	8.6 a <sup>1</sup>	141	2.7	0.55	< 1.4	170 *	590
	4/30/2018		2.5	0.20 j	3.3	1.3 j	< 0.40	0.99 j	0.84 j	1.1 j	ND	111	2.7	0.95	2.8 j	180	650
	5/02/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	31.7 j*	0.30	0.16	< 1.4	100	150
	5/02/2018		< 0.34	< 0.14	0.20 j	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	21.8 j*	0.29	0.17	< 1.6	80	110
	5/04/2018		< 0.34	< 0.14	0.43 j	< 0.24	< 0.40	< 0.14	< 0.18	0.67 j	ND	37.3 j	0.30	0.18	< 1.5	70	100
	5/06/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	52.0 jb	0.25	0.18	< 1.5	80	70
	5/08/2018	Duplicate	< 0.34	< 0.14	0.54 j	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	54.4 j	0.28	0.15	< 1.4	120	60
	5/10/2018	Duplicate	0.39 j	< 0.14	0.68 j	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	17.2 j	0.22 b	0.18	< 1.5	160	110
	5/10/2018	Duplicate	0.38 j	< 0.14	0.70 j	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	16.9 j	0.21	0.18	< 1.5	150	100
<sup>1</sup> Detections: 1-Methylnaphthalene 3.8 j, 2-Methylnaphthalene 3.6 j, Phenanthrene 1.2 j																	
21st St. Impoundment Plunge Pool SW-4 Ongoing (PFAS Only after 6/18/18)	5/15/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	59.1 jb	0.24	0.16	--	210	100
	5/15/2018	Duplicate	< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	49.1 jb	0.27	0.17	--	220	110
	5/21/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	--	32.2 jb	0.27	0.16	--	180	100
	5/23/2018	Duplicate	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
	5/23/2018	Duplicate	--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
	5/29/2018		< 0.34 h	< 0.14 h	< 0.17 h	< 0.24 h	< 0.40 h	< 0.14 h	< 0.18 h	< 0.42 h	ND	24.3 jh	0.17 bh	0.14 bh	--	170	60
	6/04/2018		0.13 j	< 0.14	0.19 j	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	10.9 j	0.13 b	0.089	--	290	30
	6/12/2018		< 0.10	< 0.14	0.13 j	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	15.5 jb	0.26 b	0.14	--	120	30
	6/18/2018		0.30 j	< 0.14	0.14 j	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	< 8.9	0.070 b	0.079	--	130	20
	6/18/2018	Duplicate	0.29 j	< 0.14	0.17 jb	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND a <sup>1</sup>	< 8.9	0.071 b	0.079	--	130	20
	6/25/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	50	20
	7/02/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	220	30
	7/02/2018	Duplicate	--	--	--	--	--	--	--	--	--	--	--	--	--	270	30
	7/09/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	40	10
	7/16/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	30	< 10
	7/16/2018	Duplicate	--	--	--	--	--	--	--	--	--	--	--	--	--	30	< 10
	7/23/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	90	10
	7/30/2018		--	--	--</												

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(Results received through 7/26/2019)

Parameter Units			Benzene ug/l	Ethyl benzene ug/l	Toluene ug/l	Xylene, total ug/l	Methyl tertiary butyl ether (MTBE) ug/l	1,2,4-Trimethyl benzene ug/l	1,3,5-Trimethyl benzene ug/l	Naphthalene ug/l	Total PAHs ug/l	GRO ug/l	DRO mg/l	ORO mg/l	Oil and Grease mg/l	Perfluorooctane sulfonic acid (PFOS) ng/l	Perfluorooctanoic acid (PFOA) ng/l
Aquatic Life Protection Screening Level			None	None	None	None	None	None	None	None	None	None	None	30	None^	None^	
Human Health Screening Level			610	2920	15359	8300	None	330	4200	1200	None	None	None	None	None^	None^	
Location	Date	Sample Type															
	4/27/2018		7.5	1.3	9.9	8.1	< 0.40	4.6	1.2	2.9 j	ND	182	--	--	1.6 j	--	--
	4/28/2018		2.1	0.37 j	2.5	< 0.24	< 0.40	< 1.2	0.40 j	0.95 j	ND	66.7 j	--	--	< 1.4	--	--
	4/29/2018		< 0.34	< 0.14	0.32 j	< 0.24	< 0.40	0.22 j	< 0.18	< 0.42	ND	15.6 j	0.74	0.25	< 1.5	220	230
	4/30/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.73	0.53	< 1.4	50	160
	5/02/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.15	0.096	< 1.4	30	60
	5/04/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.11 b	0.079	< 1.5	< 10	20
	5/06/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	15.6 jb	0.098	0.11	< 1.4	10	20
	5/06/2018	Duplicate	< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.11	0.12	< 1.5	10	10
	5/08/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	23.6 j	0.15	0.11	< 1.4	10	20
	5/10/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.14	0.13	< 1.5	50	30
	5/15/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	26.2 jb	0.14 b	0.12 b	--	40	40
	5/21/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	--	9.2 jb	0.073 b	0.082 b	--	< 10	< 10
	5/21/2018	Duplicate	< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	--	11.0 j	0.075	0.085	--	< 10	< 10
	5/23/2018		--	--	--	--	--	--	--	--	ND	--	--	--	--	--	--
	5/29/2018		< 0.34 h	< 0.14 h	< 0.17 h	< 0.24 h	< 0.40 h	< 0.14 h	< 0.18 h	< 0.42 h	ND	16.2 jh	0.12 bh	0.11 bh	--	80	30
	5/29/2018	Duplicate	< 0.34 h	< 0.14 h	< 0.17 h	< 0.24 h	< 0.40 h	< 0.14 h	< 0.18 h	< 0.42 h	ND	15.8 jh	0.12 bh	0.11 bh	--	60	20
	6/04/2018		< 0.10	< 0.14	< 0.083	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	< 8.9	0.081 b	0.072	--	130	20
	6/04/2018	Duplicate	< 0.10	< 0.14	< 0.083	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	< 8.9	0.088 b	0.083	--	140	10
	6/12/2018		< 0.10	< 0.14	< 0.083	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	10.7 jb	0.062 b	0.085 b	--	< 10	< 10
	6/18/2018		< 0.10	< 0.14	0.10 jb	< 0.31	< 0.16	< 0.20	< 0.12	< 0.48	ND	< 8.9	0.063 b	0.074	--	50	10
	7/23/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	7/30/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	8/06/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	8/13/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10 *	< 10
	8/20/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	9/04/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	9/17/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	50	< 10
	10/01/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	20	< 10
	10/15/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	150	10
	10/29/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	60	< 10
	11/12/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	10	< 10
	12/03/2018		--	--	--	--	--	--	--	--	--	--	--	--	--	< 10	< 10
	3/25/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	43	13
	4/01/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	48	< 9.8
	5/06/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	67	< 9.8
	6/03/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	12	< 9.9
	7/01/2019		--	--	--	--	--	--	--	--	--	--	--	--	--	76	13
<b>Faxon Creek</b>	4/29/2018		< 0.34	< 0.14	< 0.17	< 0.24	< 0.40	< 0.14	< 0.18	< 0.42	ND	< 8.9	0.069 b	0.12	< 1.5	< 10	< 10

None^ = No state of Wisconsin PFOS and/or PFOA human health or aquatic life protection screening levels currently established.

**Barr Standard Footnotes and Qualifiers**

--	Not analyzed/Not available.
ND	Not detected.
*	Estimated value, QA/QC criteria not met.
a	Estimated value, calculated using some or all values that are estimates.
b	Potential false positive value based on blank data validation procedures. Concentrations identified as potential false positive are excluded from calculations.
h	EPA recommended sample preservation, extraction or analysis holding time was exceeded.
j	Estimated detected value. The reported value is less than the stated laboratory quantitation limit but greater than the laboratory method detection limit.