

Table 4
Groundwater Analytical Data
H. C. Drew Estate vs Neumin Production Company and Stokes & Spiehler, Inc.
North Choupique Field
Calcasieu Parish, Louisiana

Parameters	Field Sample ID	TW-1	TW-2	TW #3	TW #4	TW #5	TW #6	SE-SB 01	SE-SB 02	SE-SB 03	SE-SB 04		
	Lab Sample ID	TW-1	TW-2	100	110	105	TW #6	SE-SB 01	SE-SB 02	SE-SB 03	SE-SB 04		
	Sample Date:	6/7/2016	6/7/2016	12/2/2016	12/2/2016	12/2/2016	2/9/2018	9/24/2018	9/24/2018	9/24/2018	9/25/2018		
	Screened Depth Interval (ft BGS):	-	-	10-15	10-15	10-15	10-20	9.5-14.5	8-13	8-13	8-13		
	Units	GW _{SS}	GW _{3NDW}	Acadian	Acadian	Acadian	Acadian	Acadian	Southland	Southland	Southland	Southland	
Total Metals													
Arsenic	mg/L	0.01	0.05	NA	NA	<0.100	0.0836	<0.050	NA	NA	NA	NA	
Barium	mg/L	2	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cadmium	mg/L	0.005	0.01	NA	NA	<0.005	<0.005	<0.005	NA	NA	NA	NA	
Calcium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	mg/L	0.1	960	NA	NA	0.112	0.299	0.139	<0.01	NA	NA	NA	
Iron ⁽¹⁾	mg/L	0.3	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	mg/L	0.015	0.05	NA	NA	0.124	0.115	0.0592	NA	NA	NA	NA	
Magnesium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese ⁽¹⁾	mg/L	0.05	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	mg/L	0.002	0.002	NA	NA	<0.0002	<0.0002	<0.0002	NA	NA	NA	NA	
Potassium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Selenium	mg/L	0.05	0.05	NA	NA	<0.1	<0.01	<0.05	NA	NA	NA	NA	
Silver	mg/L	0.018	0.54	NA	NA	<0.1	<0.01	<0.05	NA	NA	NA	NA	
Sodium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Strontium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	mg/L	1.1	8	NA	NA	0.255	0.336	0.219	0.023	NA	NA	NA	
Dissolved Metals													
Arsenic	mg/L	0.01	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Barium	mg/L	2	45	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Cadmium	mg/L	0.005	0.01	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium	mg/L	0.1	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Iron ⁽¹⁾	mg/L	0.3	0.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Lead	mg/L	0.015	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Manganese ⁽¹⁾	mg/L	0.05	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury	mg/L	0.002	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Strontium	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Zinc	mg/L	1.1	8	NA	NA	NA	NA	NA	NA	NA	NA	NA	
General Chemistry													
Chloride ⁽¹⁾	mg/L	250	250	NA	NA	7,200	1,650	1,280	144	118	155	283	367
Sulfate	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Specific Conductivity	umhos/cm	NS	NS	2,720	2,950	5,560	2,020	1,470	NA	NA	NA	NA	
pH	su	NS	NS	NA	NA	6.74	7.22	7.17	6.69	NA	NA	NA	
Chemical Oxygen Demand	mg/L	NS	NS	NA	NA	NA	NA	NA	18.0	NA	NA	NA	
Total Dissolved Solids (TDS) ⁽¹⁾	mg/L	500	500	NA	NA	NA	NA	NA	894	NA	NA	NA	
Total Suspended Solids	mg/L	NS	NS	NA	NA	NA	NA	NA	508	NA	NA	NA	
Alkalinity													
Bicarbonate Alkalinity	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Carbonate Alkalinity	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Phenolphthalein Alkalinity	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Total Alkalinity	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BTEX Compounds													
Benzene	mg/L	0.005	0.013	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	mg/L	0.7	8.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene	mg/L	1	46	NA	NA	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Xylene (total)	mg/L	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hydrocarbon Fractions													
Aliphatic C6-C8	mg/L	3.2	3,900	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aliphatic >C8-C10	mg/L	0.15	79	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aliphatic >C10-C12	mg/L	0.15	79	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aliphatic >C12-C16	mg/L	0.15	79	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aliphatic >C16-C35	mg/L	7.3	1,600	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aromatic >C8-C10	mg/L	0.15	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Unadjusted >C10-C12 Aromatics	mg/L	0.15	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Unadjusted >C12-C16 Aromatics	mg/L	0.15	31	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Unadjusted >C16-C21 Aromatics	mg/L	0.15	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Aromatic >C21-C35	mg/L	0.15	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TPH - Diesel Range	mg/L	0.15	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TPH - Oil Range	mg/L	0.15	24	NA	NA	NA	NA	NA	NA	NA	NA	NA	
HEM Oil & Grease	mg/L	NS	NS	NA	NA	<2.1	<2.1	<2.1	<4.1	NA	NA	NA	

Notes:
 Bolded values were detected in the sample
 Highlight indicates exceedance of corresponding regulatory limit
 GW_{SS} - RECAP Groundwater Screening Standard
 GW_{3NDW} - RECAP Class 3 Non-Drinking Water Standard w/o DAF
 < - Not detected at or above the reporting limit shown
 NA - Not analyzed; NS - No Standard
⁽¹⁾ - Listed limit is EPA SMCL

Table 4
Groundwater Analytical Data
H. C. Drew Estate vs Neumin Production Company and Stokes & Spiehler, Inc.
North Choupique Field
Calcasieu Parish, Louisiana

Parameters	Field Sample ID		SE-SB 05	SE-SB 06	MW-1		MW-2		MW-3		MW-4		
	Lab Sample ID		SE-SB 05	SE-SB 06	MW-1		MW-2		MW-3		MW-4		
	Sample Date:		9/25/2018	9/25/2018	9/9/2021		9/9/2021		9/9/2021		9/9/2021		
	Screened Depth Interval (ft BGS):		10-15	8-13	8-13'		8-13'		8-13'		9-14'		
	Units	GW _{SS}	GW _{3NDW}	Southland	Southland	ERM	Southland	ERM	Southland	ERM	Southland	ERM	Southland
Total Metals													
Arsenic	mg/L	0.01	0.05	NA	NA	<0.0010	<0.0100	<0.0010	<0.0100	<0.0010	<0.0100	0.0020	<0.0100
Barium	mg/L	2	45	NA	NA	0.063	0.0497	0.018	0.0140	0.079	0.178	0.15	0.117
Cadmium	mg/L	0.005	0.01	NA	NA	<0.0010	<0.00500	<0.0010	<0.00500	<0.0010	<0.00500	<0.00100	<0.00500
Calcium	mg/L	NS	NS	NA	NA	60.7	NA	97.0	NA	50.9	NA	76.6	NA
Chromium	mg/L	0.1	960	NA	NA	<0.0010	<0.0100	<0.0010	<0.0100	0.0022	0.0249	0.0020	<0.0100
Iron ⁽¹⁾	mg/L	0.3	0.3	NA	NA	0.12	0.0730	<0.10	0.139	0.97	11.5	1.79	0.628
Lead	mg/L	0.015	0.05	NA	NA	<0.001	<0.0100	<0.0010	<0.0100	<0.0010	<0.0100	0.0015	<0.0100
Magnesium	mg/L	NS	NS	NA	NA	23.5	NA	37.7	NA	17.9	NA	29.8	NA
Manganese ⁽¹⁾	mg/L	0.05	0.05	NA	NA	0.46	0.286	0.088	0.0721	0.40	0.762	5.74	5.56
Mercury	mg/L	0.002	0.002	NA	NA	<0.00020	<0.000200	<0.00020	<0.000200	<0.00020	<0.000200	<0.00020	<0.000200
Potassium	mg/L	NS	NS	NA	NA	1.29	NA	1.21	NA	1.24	NA	1.76	NA
Selenium	mg/L	0.05	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	mg/L	0.018	0.54	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	mg/L	NS	NS	NA	NA	98.8	88.2	126	109	52.1	50.2	231	205
Strontium	mg/L	NS	NS	NA	NA	0.46	0.448	0.60	0.561	0.31	0.329	0.61	0.594
Zinc	mg/L	1.1	8	NA	NA	<0.020	<0.0100	<0.020	<0.0100	0.020	0.0239	0.032	<0.0100
Dissolved Metals													
Arsenic	mg/L	0.01	0.05	NA	NA	<0.0010	NA	<0.010	NA	<0.0010	NA	<0.0010	NA
Barium	mg/L	2	45	NA	NA	0.056	NA	0.018	NA	0.076	NA	0.11	NA
Cadmium	mg/L	0.005	0.01	NA	NA	<0.0010	NA	<0.0050	NA	<0.0010	NA	<0.0010	NA
Chromium	mg/L	0.1	0.05	NA	NA	<0.0010	NA	<0.010	NA	<0.0010	NA	<0.0010	NA
Iron ⁽¹⁾	mg/L	0.3	0.3	NA	NA	<0.10	NA	<1.00	NA	<0.10	NA	<0.10	NA
Lead	mg/L	0.015	0.05	NA	NA	<0.0010	NA	<0.010	NA	<0.0010	NA	<0.0010	NA
Manganese ⁽¹⁾	mg/L	0.05	0.05	NA	NA	0.37	NA	0.092	NA	0.55	NA	5.07	NA
Mercury	mg/L	0.002	0.002	NA	NA	<0.00020	NA	<0.00020	NA	<0.00020	NA	<0.00020	NA
Strontium	mg/L	NS	NS	NA	NA	0.46	NA	0.64	NA	0.31	NA	0.60	NA
Zinc	mg/L	1.1	8	NA	NA	<0.020	NA	<0.20	NA	<0.020	NA	0.026	NA
General Chemistry													
Chloride ⁽¹⁾	mg/L	250	250	1,330	141	156	111	123	91.9	57.8	42.4	316	243
Sulfate	mg/L	NS	NS	NA	NA	175	177	256	269	68.4	68.0	104	106
Specific Conductivity	umhos/cm	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
pH	su	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chemical Oxygen Demand	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total Dissolved Solids (TDS) ⁽¹⁾	mg/L	500	500	NA	NA	500	566	703	771	272	369	834	905
Total Suspended Solids	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alkalinity													
Bicarbonate Alkalinity	mg/L	NS	NS	NA	NA	92.4	87.5	228	205	172	170	315	288
Carbonate Alkalinity	mg/L	NS	NS	NA	NA	<1.0	<10.0	<1.0	<10.0	<1.0	<10.0	<1.0	<10.0
Phenolphthalein Alkalinity	mg/L	NS	NS	NA	NA	NA	<10.0	NA	<10.0	NA	<10.0	NA	<10.0
Total Alkalinity	mg/L	NS	NS	NA	NA	NA	87.5	NA	205	NA	170	NA	288
BTEX Compounds													
Benzene	mg/L	0.005	0.013	NA	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Ethylbenzene	mg/L	0.7	8.1	NA	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Toluene	mg/L	1	46	NA	NA	<0.00500	<0.0100	<0.00500	<0.0100	<0.00500	<0.0100	<0.00500	<0.0100
m,p-Xylene	mg/L	NS	NS	NA	NA	NA	<0.0100	NA	<0.0100	NA	<0.0100	NA	<0.0100
o-Xylene	mg/L	NS	NS	NA	NA	NA	<0.00500	NA	<0.00500	NA	<0.00500	NA	<0.00500
Xylene (total)	mg/L	10	10	NA	NA	<0.015	<0.0500	<0.015	<0.0500	<0.015	<0.0500	<0.015	<0.0500
Hydrocarbon Fractions													
Aliphatic C6-C8	mg/L	3.2	3,900	NA	NA	<0.030	NA	<0.030	NA	<0.030	NA	<0.030	NA
Aliphatic >C8-C10	mg/L	0.15	79	NA	NA	<0.020	NA	<0.020	NA	<0.020	NA	<0.020	NA
Aliphatic >C10-C12	mg/L	0.15	79	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
Aliphatic >C12-C16	mg/L	0.15	79	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
Aliphatic >C16-C35	mg/L	7.3	1,600	NA	NA	<0.150	NA	<0.150	NA	<0.150	NA	<0.150	NA
Aromatic >C8-C10	mg/L	0.15	31	NA	NA	<0.030	NA	<0.030	NA	<0.030	NA	<0.030	NA
Unadjusted >C10-C12 Aromatics	mg/L	0.15	31	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
Unadjusted >C12-C16 Aromatics	mg/L	0.15	31	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
Unadjusted >C16-C21 Aromatics	mg/L	0.15	24	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
Aromatic >C21-C35	mg/L	0.15	24	NA	NA	<0.100	NA	<0.100	NA	<0.100	NA	<0.100	NA
TPH - Diesel Range	mg/L	0.15	24	NA	NA	NA	<0.134	NA	<0.134	NA	0.137	NA	0.388
TPH - Oil Range	mg/L	0.15	24	NA	NA	NA	<0.124	NA	<0.123	NA	<0.126	NA	0.179
HEM Oil & Grease	mg/L	NS	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
 Bolded values were detected in the sample
 Highlight indicates exceedance of corresponding regulatory limit
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