

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

Cc: Nevada Division of Environmental Protection
United States Environmental Protection Agency

From: Dan Pastor and Dana Grady

Date: June 8, 2018

Subject: Seep Well Field Area Bioremediation Treatability Study Monthly Progress Report

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum which summarizes Tetra Tech's progress during April 2018 toward successfully implementing the Seep Well Field (SWF) Area Bioremediation Treatability Study.

Task Progress Update: April 2018

Task M11 – Seep Well Field Area Bioremediation Treatability Study (SWFTS)

- Task Leader – Dana Grady/Dan Pastor
- Current Status
 - The results from the March monthly groundwater sampling event (second sampling event after the second injection event) have been received and are currently being evaluated. It should be noted that the carbon substrate dosage of emulsified vegetable oil (EVO) was reduced for the second event based on the total organic carbon (TOC) that was measured in the injection wells in December 2018. Based on the high TOC concentrations remaining in some of the injection wells (as high as 6,500 mg/L), EVO was strategically injected mainly into wells with reduced TOC content. Under this treatability study program, varying the injection dosage will help determine whether reduced EVO injection quantities would have a similar perchlorate degradation response that was observed following the first injection event in August/September 2017. This step also helps determine if TOC in the injection wells is a useful operational parameter for full-scale and long-term groundwater bioremediation application. Approximately 7,760 gallons of emulsified oil was added during the second injection event, which was 40 percent of the 19,260 gallons injected in the first event.
 - As requested by NDEP, the following provides a brief summary of the analytical results obtained from recent performance monitoring events. The results from the March groundwater sampling event indicate that perchlorate and chlorate concentrations remain at levels significantly below their respective baseline concentrations observed prior to injections. In general, perchlorate concentrations in several downgradient wells appeared to have stabilized over the last two groundwater monitoring events (February and March 2018.) Specific results include:

- A significant decrease in perchlorate concentration was observed in groundwater from monitoring well SWFTS-MW02, where some reductions in perchlorate and chlorate did occur following the first injection event, but at a slower rate in comparison to other downgradient monitoring wells. Perchlorate concentrations in groundwater from this well reduced from 14,000 micrograms per liter ($\mu\text{g/L}$) in February 2018 to 4,400 $\mu\text{g/L}$ in the recent March 2018 sampling event.
- Groundwater from monitoring well SWFTS-MW18 had the lowest perchlorate concentrations to date with a concentration of 2,100 $\mu\text{g/L}$. This concentration is significantly less than the average concentration observed following the first injection event of 9,500 $\mu\text{g/L}$.
- Two downgradient wells, SWFTS-MW09B and SWFTS-MW16, witnessed significant increases in perchlorate concentrations in groundwater. It is likely that the reason for this increase is due to the strategic and reduced EVO quantities that were injected during the second injection event compared to the first injection event, as part of the treatability study testing. Additionally, SWFTS-MW09B is in the immediate vicinity of a suspected paleochannel, which may have caused variability in groundwater concentrations due to higher groundwater flow rates. This was also evidenced by similar concentration increases in groundwater from monitoring wells that are located side/upgradient of the treatability study area and are also located within the paleochannel.
- The April groundwater sampling event was performed the week of April 30, 2018. Results will be provided and briefly discussed in the May monthly progress update.
- The next (third) injection event is scheduled to begin the week of June 11, 2018. The quantity of EVO that will be injected during this event will be similar to the quantities injected during the first event. Additionally, EVO will be added to all the injection wells, similar to the protocol followed in the first injection event, in order to maximize perchlorate reduction. Following the third injection event, groundwater sampling will be performed in July, August, September, and October 2018. Results and preliminary analyses of groundwater sampling will be provided in upcoming monthly injection reports
- As requested by NDEP, a figure and several tables have been included in this monthly update. Figure 1 provides a map of the injection and monitoring well locations, which includes the baseline groundwater potentiometric surface. Tables 1, 2, and 3 present the soil boring, injection well, and monitoring well construction details. Tables 4 and 5 present the carbon substrate quantities injected during the first and second injections events, respectively. Table 6 presents the groundwater analytical results for perchlorate, chlorate, nitrate, TOC, and dissolved oxygen.
- Schedule and Progress Updates
 - This task remains on schedule.
 - The third injection event is scheduled to begin the week of June 11, 2018.
- Health and Safety
 - There were no safety incidents related to Task M11 during April 2018.

CERTIFICATION

Seep Well Field Area Bioremediation Treatability Study Monthly Progress Report

Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada

Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Signature: Jay A Steinberg, not individually, but solely as Pres. NERT, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: 4/2/18

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided: Prepared Seep Well Field Area Bioremediation Treatability Study Monthly Progress Report April 2018.



June 8, 2018

Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

Date

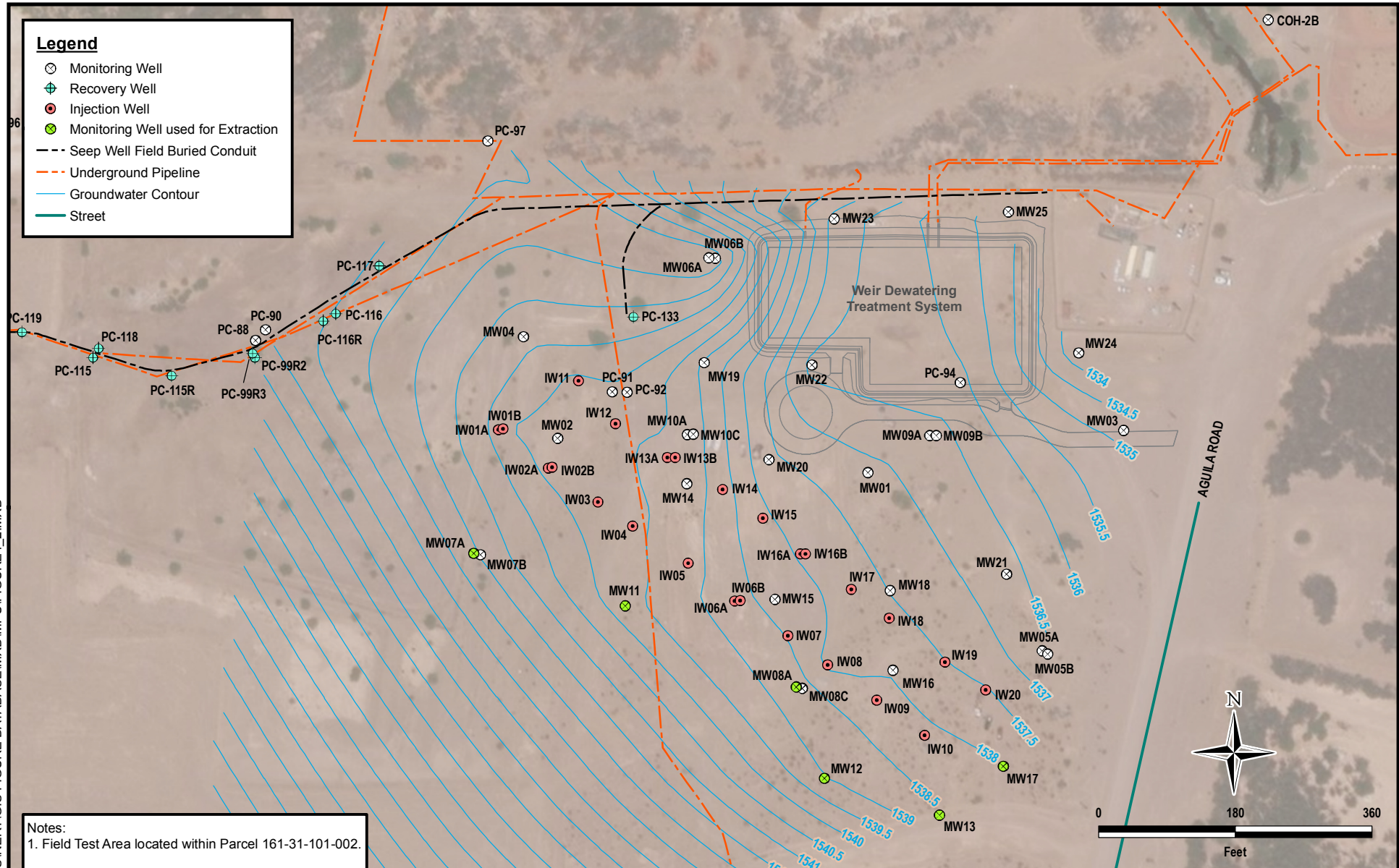
Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2018

Figures

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Legend

- Monitoring Well
- Recovery Well
- Injection Well
- Monitoring Well used for Extraction
- Seep Well Field Buried Conduit
- Underground Pipeline
- Groundwater Contour
- Street



- Notes:**
1. Field Test Area located within Parcel 161-31-101-002.
 2. The prefix 'SWTFS-' not shown for wells labeled as MW or IW. (MW03 = SWTFS-MW03)
 3. Groundwater potentiometric contours presented are based on water levels collected during the baseline groundwater sampling event in July 2017.
 4. Imagery Source: Esri World Map, June 2015

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NEVADA ENVIRONMENTAL RESPONSE TRUST
MONTHLY PROGRESS UPDATE
MONITORING AND INJECTION WELL LAYOUT

Project No.:	117-7502018
Date:	MAY 31, 2018
Designed By:	SRA
Figure No.	1

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Tables

Table 1 - Soil Borings
Seep Well Field Area Bioremediation Treatability

Monitoring Well/Borehole ID	Northing	Easting	Elevation	Borehole Diameter	Borehole Total Depth
			feet amsl	inches	feet bgs
Newly Installed Soil Borings (February - March 2017)					
SWFTS-BH01	26732831.60	831699.18	1556.730	6	43
SWFTS-BH02	26732742.32	831885.75	1562.470	8	50
SWFTS-BH03	26732633.19	832210.82	1562.750	6	54
SWFTS-BH04	26732816.71	832065.23	1554.680	6	45
SWFTS-BH05	26732859.98	832182.99	1553.480	6	40
SWFTS-BH06	26732914.77	832076.76	1554.080	6	15
SWFTS-BH07	26732976.44	831954.58	1551.370	6	45
SWFTS-BH08	26733066.02	832060.99	1550.790	8	53
SWFTS-BH09	26733156.54	832268.66	1546.930	6	37
SWFTS-BH10	26733223.18	832077.72	1548.280	6	52

Notes:

amsl - above mean sea level

bgs - below ground surface

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Table 2 - Monitoring Wells
Seep Well Field Area Bioremediation Treatability Study

Monitoring Well/Borehole ID	Northing	Easting	Elevation	Well Diameter	Borehole Diameter	Borehole Total Depth	Well Total Depth	Bottom of Screen	Top of Screen	Screen Length	Slot Size
			feet amsl	inches	inches	feet bgs	feet bgs	feet bgs	feet bgs	feet	inches
Newly Installed Monitoring Wells (February-June 2017)											
SWFTS-MW01	26733003.73	832067.12	1552.39	2	6	43	39.4	38.9	24.2	15	0.020
SWFTS-MW02	26733048.86	831657.82	1553.63	2	6	41	33.5	33.1	18.4	15	0.020
SWFTS-MW03	26733059.49	832404.39	1549.02	2	6	60	42.2	42.1	27.2	15	0.020
SWFTS-MW04	26733183.35	831612.29	1551.82	2	6	45	40.9	40.4	25.8	15	0.020
SWFTS-MW05A	26732768.53	832296.89	1554.91	2	6	30	29.4	29.3	19.3	10	0.020
SWFTS-MW05B	26732764.09	832304.67	1554.86	2	6	44	42.5	42.0	32.3	10	0.020
SWFTS-MW06A	26733287.15	831857.05	1548.41	2	6	23	21.9	21.4	11.8	10	0.020
SWFTS-MW06B	26733286.65	831865.75	1548.59	2	6	40	36.0	35.5	25.9	10	0.020
SWFTS-MW07A	26733052.94	832148.65	1555.64	4	8	31	30.1	29.5	15	15	0.020
SWFTS-MW07B	26732895.65	831555.99	1555.53	2	6	55	38.9	38.3	33.8	5	0.020
SWFTS-MW08A	26733052.55	832157.19	1556.03	4	8	36	35.3	34.8	20.2	15	0.020
SWFTS-MW08C	26732897.49	831547.35	1556.18	2	6	70	70.0	69.5	49.9	20	0.020
SWFTS-MW09A	26733054.00	831828.76	1551.16	4	8	30	29.4	28.9	19.3	10	0.020
SWFTS-MW09B	26732720.57	831972.55	1551.27	2	6	56	39.5	39.0	34.4	5	0.020
SWFTS-MW10A	26733054.15	831836.75	1551.61	4	8	36	35.5	35.0	20.4	15	0.020
SWFTS-MW10C	26732718.60	831980.38	1551.61	2	6	64	63.6	63.1	43.5	20	0.020
SWFTS-MW11	26732827.46	831747.30	1558.73	4	10	43	40.0	39.6	14.8	25	0.020
SWFTS-MW12	26732600.73	832009.72	1559.06	4	10	45	41.0	40.6	15.8	25	0.020
SWFTS-MW13	26732551.81	832161.20	1563.64	4	10	51	48.0	47.6	17.8	30	0.020
SWFTS-MW14	26732989.39	831828.48	1552.27	2	8	39	37.0	36.6	16.8	20	0.020
SWFTS-MW15	26732836.67	831944.36	1553.66	2	8	37	35.0	34.6	14.8	20	0.020
SWFTS-MW16	26732742.78	832100.29	1561.84	2	8	45	42.0	41.6	21.8	20	0.020
SWFTS-MW17	26732616.54	832245.85	1565.92	4	10	55	53.0	52.6	22.8	30	0.020
SWFTS-MW18	26732847.58	832096.15	1554.58	2	8	39.3	37.0	36.6	16.8	20	0.020
SWFTS-MW19	26733148.9	831850.68	1550.65	2	8	35	31.5	31.1	11.3	20	0.020
SWFTS-MW20	26733020.92	831936.43	1551.67	2	8	39	38.0	37.6	12.8	25	0.020
SWFTS-MW21	26732869.95	832249.88	1553.57	2	8	41.3	40.0	39.6	14.8	25	0.020
SWFTS-MW22	26733146.27	831993.33	1549.56	2	8	35	32.0	31.6	11.8	20	0.020
SWFTS-MW23	26733338.19	832022.56	1550.30	2	8	38	34.0	33.6	13.8	20	0.020
SWFTS-MW24	26733161.74	832345.44	1547.86	2	8	41	38.0	37.6	12.8	25	0.020
SWFTS-MW25	26733347.67	832252.13	1546.78	2	8	44	43.0	42.6	12.8	30	0.020

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Table 2 - Monitoring Wells
Seep Well Field Bioremediation Treatability Study

Monitoring Well/Borehole ID	Northing	Easting	Elevation	Well Diameter	Borehole Diameter	Borehole Total Depth	Well Total Depth	Bottom of Screen	Top of Screen	Screen Length	Slot Size
			feet amsl	inches	inches	feet bgs	feet bgs	feet bgs	feet bgs	feet	inches
Existing Monitoring Wells within Treatability Study Area											
COH-2B	26733593.69	832598.59	1544.63	2	-	-	67	-	-	-	-
PC-58	26732118.20	831123.78	1574.84	2	8	36	33	32.8	7.8	25	0.020
PC-91	26733111.11	831729.78	1552.63	2	8	30	22	21.5	11.5	10	0.020
PC-92	26733110.00	831748.84	1552.14	2	8	65	37	36.5	26.5	10	0.020
PC-94	26733122.77	832188.74	1548.05	2	8	25	19.5	19.5	9.5	10	0.020
PC-97	26733441.54	831565.69	1548.78	2	8	45	33.5	33	23	10	0.020
PC-88	26733178.42	831259.41	1550.91	2	8	62	50.5	50	40	10	0.020

Notes:

amsl - above mean sea level

bgs - below ground surface

- Not Available

Table 3 - Injection Wells
Seep Well Field Area Bioremediation Treatability Study

Monitoring Well/Borehole ID	Northing	Easting	Elevation	Well Diameter	Borehole Diameter	Borehole Total Depth	Well Total Depth	Bottom of Screen	Top of Screen	Screen Length	Slot Size
			feet amsl	inches	inches	feet bgs	feet bgs	feet bgs	feet bgs	feet	inches
Newly Installed Injection Wells (May-June 2017)											
SWFTS-IW01A	26733059.73	831579.19	1553.476	2	8	27	26.0	25.6	15.8	10	0.020
SWFTS-IW01B	26733061.20	831585.84	1554.462	2	8	41	37.1	36.7	26.9	10	0.020
SWFTS-IW02A	26733009.17	831645.08	1554.701	2	8	29	27.0	26.6	16.8	10	0.020
SWFTS-IW02B	26733010.07	831650.33	1554.509	2	8	39	36.5	36.1	26.3	10	0.020
SWFTS-IW03	26732964.70	831711.03	1552.208	2	8	39	37.0	36.6	16.8	20	0.020
SWFTS-IW04	26732932.97	831756.77	1552.906	2	8	37	35.0	34.6	19.8	15	0.020
SWFTS-IW05	26732883.80	831829.89	1554.799	2	8	37	34.8	34.4	14.6	20	0.020
SWFTS-IW06A	26732833.83	831891.31	1557.894	2	8	29	27.0	26.6	16.8	10	0.020
SWFTS-IW06B	26732834.30	831898.57	1562.934	2	8	37	34.0	33.6	28.8	5	0.020
SWFTS-IW07	26732787.99	831961.16	1562.482	2	8	39	37.5	37.1	17.3	20	0.020
SWFTS-IW08	26732749.42	832014.32	1552.635	2	8	41	37.7	37.3	17.5	20	0.020
SWFTS-IW09	26732702.88	832078.62	1553.012	2	8	49	46.8	46.4	26.6	20	0.020
SWFTS-IW10	26732656.78	832141.67	1552.478	2	8	49	47.0	46.6	26.8	20	0.020
SWFTS-IW11	26733124.81	831685.02	1551.749	2	8	41	37.5	37.1	17.3	20	0.020
SWFTS-IW12	26733067.66	831734.08	1551.255	2	8	43	39.5	39.1	14.3	25	0.020
SWFTS-IW13A	26733022.97	831802.64	1552.958	2	8	28	26.0	25.6	15.8	10	0.020
SWFTS-IW13B	26733022.94	831812.84	1554.608	2	8	40	38.0	37.6	27.8	10	0.020
SWFTS-IW14	26732981.31	831875.23	1555.792	2	8	39	36.5	36.1	16.2	20	0.020
SWFTS-IW15	26732942.89	831928.63	1560.372	2	8	39	36.6	36.2	16.4	20	0.020
SWFTS-IW16A	26732896.44	831977.77	1563.157	2	8	29	27.5	27.1	17.3	10	0.020
SWFTS-IW16B	26732895.94	831984.74	1558.730	2	8	39	36.7	36.3	26.5	10	0.020
SWFTS-IW17	26732849.16	832045.01	1559.060	2	8	39	37.5	37.1	17.3	20	0.020
SWFTS-IW18	26732811.24	832095.47	1563.642	2	8	39	38.5	38.1	18.1	20	0.020
SWFTS-IW19	26732753.36	832168.69	1552.265	2	8	47	44.5	44.1	24.3	20	0.020
SWFTS-IW20	26732716.42	832222.65	1553.658	2	8	53	51.0	50.6	30.8	20	0.020

Notes:

amsl - above mean sea level

bgs - below ground surface

Table 4 - Summary of Injection Event 1 (August-September 2017)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution		Total Volume of Injectate (gal)	Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)		
8/23/2017 10:41 - 16:45	SWFTS-IW01A	7	0	383	1,519	1,911	0
	SWFTS-IW02A	6	0	482	1,916	2,411	0
	SWFTS-IW03	5	0	276	1,099	1,382	0
	SWFTS-IW04	7	0	436	228	2,182	0
	SWFTS-IW06A	6	0	289	1,148	1,445	0
	SWFTS-IW07	5	0	367	1,456	1,833	0
	SWFTS-IW08	5	0	244	969	1,220	0
	SWFTS-IW09	6	0	360	1,431	1,800	0
	SWFTS-IW10	4	0	301	1,195	1,504	0
	Daily Summary			3,138	10,961	15,688	0
8/24/2017 11:00 - 18:05	SWFTS-IW01A	16	0	118	468	589	0
	SWFTS-IW01B	9	0	294	1,168	1,470	0
	SWFTS-IW02A	8	0	18	71	89	0
	SWFTS-IW02B	7	0	252	1,003	1,262	0
	SWFTS-IW03	11	5	394	1,565	1,970	0
	SWFTS-IW04	7	3	269	1,069	1,345	0
	SWFTS-IW06A	9	5	211	838	1,055	0
	SWFTS-IW06B	11	5	114	455	572	0
	SWFTS-IW07	9	10	107	426	536	0
	SWFTS-IW08	12	18	405	1,611	2,027	0
	SWFTS-IW09	6	0	144	571	718	0
	SWFTS-IW10	8	10	292	1,159	1,459	0
	Daily Summary			2,618	10,404	13,092	0
8/25/2017 6:26 - 18:00	SWFTS-IW01B	9	0	206	818	1,030	0
	SWFTS-IW02B	6	0	248	984	1,238	0
	SWFTS-IW03	8	5	330	1,310	1,648	0
	SWFTS-IW04	2	0	40	159	200	0
	SWFTS-IW05	7	0	103	3,349	4,215	0
	SWFTS-IW06B	4	10	136	539	678	0
	SWFTS-IW07	8	17	526	2,091	2,631	0
	SWFTS-IW08	5	20	351	1,393	1,753	0
	SWFTS-IW09	9	0	496	1,972	2,482	0
	SWFTS-IW10	9	10	407	1,619	2,037	0
	SWFTS-IW11	8	0	636	2,527	3,181	0
	SWFTS-IW12	10	0	647	2,571	3,235	0
	SWFTS-IW13A	6	10	449	1,785	2,247	0
	SWFTS-IW14	9	6	605	2,406	3,028	0
	SWFTS-IW16B	7	0	441	1,752	2,204	0
	SWFTS-IW17	9	6	218	867	1,092	0
SWFTS-IW18	8	0	466	1,850	2,329	0	
SWFTS-IW19	5	0	117	466	587	0	
SWFTS-IW20	9	0	408	1,622	2,041	0	
	Daily Summary			6,830	30,080	37,856	0
8/26/2017 7:10 - 18:05	SWFTS-IW03	9	5	47	185	233	0
	SWFTS-IW04	5	0	60	238	299	0
	SWFTS-IW05	7	9	214	849	1,068	0
	SWFTS-IW11	5	0	364	1,445	1,819	0
	SWFTS-IW12	7	5	603	2,396	3,015	0
	SWFTS-IW13A	5	15	51	201	253	0
	SWFTS-IW13B	5	15	500	1,987	2,500	0
	SWFTS-IW14	7	10	754	2,998	3,772	0
	SWFTS-IW15	5	35	532	2,112	2,658	0
	SWFTS-IW16A	5	7	500	1,987	2,500	0
	SWFTS-IW16B	7	10	259	1,030	1,296	0
	SWFTS-IW17	7	16	782	3,106	3,908	0
	SWFTS-IW18	6	0	535	2,123	2,671	0
SWFTS-IW19	7	10	882	3,507	4,413	0	
SWFTS-IW20	6	3	592	2,351	2,959	0	
	Daily Summary			6,675	26,515	33,364	0
8/27/2017 8:50 - 16:55	SWFTS-IW11	6	0	0	0	0	2,845
	SWFTS-IW12	7	15	0	0	0	2,880
	SWFTS-IW13B	5	30	0	0	0	1,929
	SWFTS-IW14	8	10	0	0	0	3,454
	SWFTS-IW15	5	32	0	0	0	1,842
	SWFTS-IW16B	7	9	0	0	0	2,568
	SWFTS-IW17	7	21	0	0	0	2,347
	SWFTS-IW18	7	7	0	0	0	2,558
	SWFTS-IW19	7	21	0	0	0	2,931
	SWFTS-IW20	5	5	0	0	0	2,188
	Daily Summary			0	0	0	25,542
8/28/2017 6:48 - 17:50	SWFTS-IW11	5	8	0	0	0	2,955
	SWFTS-IW12	6	5	0	0	0	3,743
	SWFTS-IW13A	5	10	0	0	0	1,377
	SWFTS-IW13B	5	25	0	0	0	2,136
	SWFTS-IW14	6	11	0	0	0	4,233
	SWFTS-IW15	5	19	0	0	0	3,549
	SWFTS-IW16A	6	12	0	0	0	1,607
	SWFTS-IW16B	4	4	0	0	0	1,633
	SWFTS-IW17	5	13	0	0	0	3,345
	SWFTS-IW18	5	1	0	0	0	3,095
SWFTS-IW19	5	16	0	0	0	3,412	
SWFTS-IW20	4	17	0	0	0	2,732	
	Daily Summary			0	0	0	33,817

Table 4 - Summary of Injection Event 1 (August-September 2017)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution		Total Volume of Injectate (gal)	Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)		
8/29/2017 8:20 - 17:50	SWFTS-IW01A	6	0	0	0	0	3,015
	SWFTS-IW02A	5	0	0	0	0	2,533
	SWFTS-IW03	5	0	0	0	0	2,616
	SWFTS-IW05	5	11	0	0	0	2,554
	SWFTS-IW07	0	16	0	0	0	2,612
	SWFTS-IW08	4	15	0	0	0	2,378
	SWFTS-IW09	5	5	0	0	0	2,306
	SWFTS-IW10	5	0	0	0	0	2,190
	SWFTS-IW13A	5	10	0	0	0	2,515
SWFTS-IW16A	4	10	0	0	0	2,249	
Daily Summary				0	0	0	24,968
8/30/2017 6:43 - 17:45	SWFTS-IW01A	4	0	0	0	0	2,917
	SWFTS-IW02A	4	1	0	0	0	2,887
	SWFTS-IW03	6	7	0	0	0	3,946
	SWFTS-IW04	6	11	0	0	0	3,660
	SWFTS-IW05	6	8	0	0	0	3,769
	SWFTS-IW06A	4	1	0	0	0	2,928
	SWFTS-IW07	6	15	0	0	0	3,866
	SWFTS-IW08	5	10	0	0	0	3,149
	SWFTS-IW09	5	4	0	0	0	3,325
	SWFTS-IW10	5	0	0	0	0	3,550
Daily Summary				0	0	0	33,997
8/31/2017 6:45 - 17:30	SWFTS-IW01B	5	0	0	0	0	3,296
	SWFTS-IW02B	4	0	0	0	0	2,622
	SWFTS-IW03	5	0	0	0	0	3,457
	SWFTS-IW04	5	7	0	0	0	3,421
	SWFTS-IW05	6	7	0	0	0	3,557
	SWFTS-IW06B	4	0	0	0	0	2,439
	SWFTS-IW07	5	12	0	0	0	3,159
	SWFTS-IW08	5	2	0	0	0	3,009
	SWFTS-IW09	5	1	0	0	0	3,159
	SWFTS-IW10	5	0	0	0	0	2,948
Daily Summary				0	0	0	31,067
9/6/2017 7:45 - 16:45	SWFTS-IW01B	5	0	0	0	0	2,427
	SWFTS-IW02B	5	0	0	0	0	2,504
	SWFTS-IW03	4	0	0	0	0	2,301
	SWFTS-IW04	6	6	0	0	0	3,157
	SWFTS-IW05	4	0	0	0	0	2,379
	SWFTS-IW06A	5	0	0	0	0	2,060
	SWFTS-IW06B	5	7	0	0	0	436
	SWFTS-IW07	5	10	0	0	0	2,470
	SWFTS-IW08	7	4	0	0	0	1,464
	SWFTS-IW09	4	6	0	0	0	2,288
	SWFTS-IW10	4	0	0	0	0	2,422
SWFTS-IW18	4	0	0	0	0	1,242	
Daily Summary				0	0	0	25,150
9/7/2017 6:45 - 14:34	SWFTS-IW01A	6	0	0	0	0	777
	SWFTS-IW01B	8	0	0	0	0	2,527
	SWFTS-IW02A	5	0	0	0	0	178
	SWFTS-IW02B	8	0	0	0	0	3,124
	SWFTS-IW03	5	0	0	0	0	2,118
	SWFTS-IW04	6	9	0	0	0	2,137
	SWFTS-IW06A	4	0	0	0	0	1,869
	SWFTS-IW07	5	11	0	0	0	2,158
	SWFTS-IW09	5	0	0	0	0	2,221
	SWFTS-IW10	5	0	0	0	0	2,346
	SWFTS-IW14	4	0	0	0	0	407
	SWFTS-IW18	3	0	0	0	0	1,403
Daily Summary				0	0	0	21,265
9/8/2017 9:53 - 17:46	SWFTS-IW01A	13	10	0	0	0	1,541
	SWFTS-IW02A	11	9	0	0	0	2,652
	SWFTS-IW03	9	14	0	0	0	2,062
	SWFTS-IW05	13	10	0	0	0	4,241
	SWFTS-IW06A	13	7	0	0	0	1,393
	SWFTS-IW07	10	18	0	0	0	2,235
	SWFTS-IW09	10	10	0	0	0	3,201
	SWFTS-IW10	9	8	0	0	0	3,044
	SWFTS-IW11	9	11	0	0	0	2,492
	SWFTS-IW12	10	8	0	0	0	1,639
	SWFTS-IW13A	10	9	0	0	0	1,830
	SWFTS-IW14	11	20	0	0	0	4,580
	SWFTS-IW15	10	0	0	0	0	857
	SWFTS-IW16A	8	6	0	0	0	2,566
	SWFTS-IW17	10	15	0	0	0	1,856
	SWFTS-IW18	8	7	0	0	0	3,018
	SWFTS-IW19	10	7	0	0	0	979
SWFTS-IW20	7	12	0	0	0	367	
Daily Summary				0	0	0	40,553

Table 4 - Summary of Injection Event 1 (August-September 2017)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution		Total Volume of Injectate (gal)	Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)		
9/9/2017 6:12 - 16:45	SWFTS-IW11	5	3	0	0	0	3,329
	SWFTS-IW12	8	0	0	0	0	5,178
	SWFTS-IW13A	6	0	0	0	0	2,528
	SWFTS-IW13B	3	6	0	0	0	526
	SWFTS-IW14	6	17	0	0	0	3,516
	SWFTS-IW15	7	8	0	0	0	4,622
	SWFTS-IW16A	7	7	0	0	0	1,828
	SWFTS-IW16B	4	0	0	0	0	1,283
	SWFTS-IW17	7	11	0	0	0	4,445
	SWFTS-IW18	4	4	0	0	0	2,419
	SWFTS-IW19	7	8	0	0	0	4,471
SWFTS-IW20	6	4	0	0	0	3,853	
Daily Summary				0	0	0	37,998
9/10/2017 6:26 - 17:15	SWFTS-IW11	4	8	0	0	0	2,657
	SWFTS-IW12	8	6	0	0	0	5,049
	SWFTS-IW13B	3	8	0	0	0	1,892
	SWFTS-IW14	5	16	0	0	0	3,278
	SWFTS-IW15	5	0	0	0	0	3,441
	SWFTS-IW16B	2	0	0	0	0	1,089
	SWFTS-IW17	4	12	0	0	0	2,256
	SWFTS-IW18	4	0	0	0	0	2,438
	SWFTS-IW19	4	10	0	0	0	2,338
	SWFTS-IW20	7	9	0	0	0	4,418
	Daily Summary				0	0	0
9/11/2017 7:18 - 16:03	SWFTS-IW11	5	10	0	0	0	2,242
	SWFTS-IW12	5	8	0	0	0	2,156
	SWFTS-IW13B	4	10	0	0	0	1,787
	SWFTS-IW14	4	18	0	0	0	2,052
	SWFTS-IW15	5	8	0	0	0	2,209
	SWFTS-IW16B	4	0	0	0	0	1,697
	SWFTS-IW17	0	15	0	0	0	2,271
	SWFTS-IW18	5	8	0	0	0	347
	SWFTS-IW19	5	8	0	0	0	2,389
	SWFTS-IW20	6	10	0	0	0	2,962
	Daily Summary				0	0	0
Injection Event Summary				19,261	77,960	100,000	323,325

Notes:
 gpm gallons per minute
 psi pounds per square inch
 EOS emulsified vegetable oil substrate
 gal gallons
¹ Not all injection wells indicated were operated during the entire time interval specified.
 * - Approximately 385 gallons of glycerin, 140 gallons of phosphate solution, and 300 pounds of sodium sulfite were also blended into the carbon substrate solution.

Table 5 - Summary of Injection Event 2 (January - February 2018)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution			Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)	Total Volume of Injectate (gal)	
01/23/2018 14:38 - 16:17	SWFTS-IW01A	7	0	135	542	677	0
	SWFTS-IW03	7	0	129	516	645	0
	SWFTS-IW06B	6	10	109	436	545	0
	SWFTS-IW09	11	0	238	951	1,189	0
	SWFTS-IW10	10	0	213	851	1,064	0
	SWFTS-IW11	4	10	79	315	394	0
	SWFTS-IW13B	4	0	80	322	402	0
	SWFTS-IW15	6	25	115	460	575	0
	SWFTS-IW18	7	15	159	635	794	0
	Daily Summary			1,257	5,028	6,285	0
1/24/2018 8:05 - 16:31	SWFTS-IW01A	6	5	265	1,058	1,323	0
	SWFTS-IW01B	7	0	400	1,600	2,000	0
	SWFTS-IW03	8	15	671	2,684	3,355	0
	SWFTS-IW05	8	0	220	881	1,101	0
	SWFTS-IW06A	6	0	400	1,600	2,000	0
	SWFTS-IW06B	4	10	91	364	455	0
	SWFTS-IW09	8	10	562	2,249	2,811	0
	SWFTS-IW10	8	10	587	2,349	2,936	0
	SWFTS-IW11	3	10	324	1,298	1,622	0
	SWFTS-IW12	9	0	345	1,381	1,726	0
	SWFTS-IW13B	4	20	220	878	1,098	0
	SWFTS-IW15	5	20	485	1,940	2,425	0
		SWFTS-IW16B	5	0	106	424	530
	SWFTS-IW18	8	18	641	2,565	3,206	0
	Daily Summary			5,317	21,271	26,588	0
1/25/2018 08:30 - 16:15	SWFTS-IW01B	4	0	0	0	0	1,017
	SWFTS-IW03	4	0	0	0	0	1,028
	SWFTS-IW05	8	10	80	319	399	0
	SWFTS-IW05	5	10	0	0	0	1,227
	SWFTS-IW06A	4	0	0	0	0	1,126
	SWFTS-IW09	5	5	0	0	0	1,371
	SWFTS-IW10	5	0	0	0	0	1,225
	SWFTS-IW11	4	10	0	0	0	1,025
	SWFTS-IW12	9	5	255	1,019	1,274	0
	SWFTS-IW12	4	0	0	0	0	1,067
	SWFTS-IW14	10	0	300	1,200	1,500	0
	SWFTS-IW15	6	0	0	0	0	1,473
	SWFTS-IW16B	5	20	194	776	970	0
	SWFTS-IW16B	4	10	0	0	0	1,074
		SWFTS-IW17	8	20	300	1,200	1,500
	SWFTS-IW17	8	15	0	0	0	1,912
	Daily Summary			1,129	4,514	5,643	13,545
01/26/2018 07:11 - 16:00	SWFTS-IW01B	6	0	0	0	0	3,314
	SWFTS-IW03	5	0	0	0	0	2,622
	SWFTS-IW05	6	10	0	0	0	2,938
	SWFTS-IW06A	5	0	0	0	0	2,683
	SWFTS-IW09	4	0	0	0	0	1,916
	SWFTS-IW10	5	0	0	0	0	2,401
	SWFTS-IW11	4	10	0	0	0	2,043
	SWFTS-IW12	5	0	0	0	0	2,453
	SWFTS-IW15	5	0	0	0	0	2,558
	SWFTS-IW16B	4	0	0	0	0	1,990
		SWFTS-IW17	5	15	0	0	0
	Daily Summary			0	0	0	27,683
01/27/2018 07:10 - 16:30	SWFTS-IW01B	4	10	0	0	0	2,346
	SWFTS-IW03	4	10	0	0	0	2,303
	SWFTS-IW05	5	10	0	0	0	2,620
	SWFTS-IW06A	5	5	0	0	0	2,628
	SWFTS-IW09	4	0	0	0	0	1,952
	SWFTS-IW10	4	0	0	0	0	2,069
	SWFTS-IW11	4	10	0	0	0	2,230
	SWFTS-IW12	5	10	0	0	0	2,684
	SWFTS-IW15	4	10	0	0	0	2,479
		SWFTS-IW16B	3	10	0	0	0
	SWFTS-IW17	4	10	0	0	0	2,259
	Daily Summary			0	0	0	24,401
01/28/2018 07:00 - 16:15	SWFTS-IW01A	6	5	0	0	0	971
	SWFTS-IW01B	5	10	0	0	0	2,073
	SWFTS-IW03	4	5	0	0	0	2,348
	SWFTS-IW05	5	10	0	0	0	2,701
	SWFTS-IW06A	4	5	0	0	0	2,313
	SWFTS-IW06B	3	10	0	0	0	38
	SWFTS-IW09	6	10	0	0	0	3,045
	SWFTS-IW10	5	10	0	0	0	2,908
	SWFTS-IW11	5	10	0	0	0	2,572
	SWFTS-IW12	5	5	0	0	0	2,569
	SWFTS-IW15	4	20	0	0	0	2,354
		SWFTS-IW17	4	18	0	0	0
	Daily Summary			0	0	0	26,308

Table 5 - Summary of Injection Event 2 (January - February 2018)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution			Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)	Total Volume of Injectate (gal)	
01/29/2018 07:00 - 16:08	SWFTS-IW01A	3	10	0	0	0	1,846
	SWFTS-IW03	4	5	0	0	0	2,223
	SWFTS-IW05	6	10	0	0	0	3,014
	SWFTS-IW06B	5	10	0	0	0	2,580
	SWFTS-IW09	4	5	0	0	0	2,321
	SWFTS-IW10	4	10	0	0	0	683
	SWFTS-IW11	4	10	0	0	0	2,212
	SWFTS-IW12	4	5	0	0	0	2,146
	SWFTS-IW14	7	0	0	0	0	1,098
	SWFTS-IW15	5	25	0	0	0	2,549
	SWFTS-IW16B	3	0	0	0	0	887
SWFTS-IW17	5	15	0	0	0	2,648	
SWFTS-IW18	8	10	0	0	0	478	
Daily Summary				0	0	0	24,685
01/30/2018 07:09 - 16:06	SWFTS-IW01A	3	10	0	0	0	1,768
	SWFTS-IW03	4	5	0	0	0	2,203
	SWFTS-IW06B	5	10	0	0	0	1,757
	SWFTS-IW07	5	5	0	0	0	740
	SWFTS-IW09	4	10	0	0	0	2,374
	SWFTS-IW11	4	10	0	0	0	2,077
	SWFTS-IW12	8	15	0	0	0	3,406
	SWFTS-IW14	5	0	0	0	0	2,402
	SWFTS-IW15	4	20	0	0	0	2,198
	SWFTS-IW16B	5	20	0	0	0	2,807
	SWFTS-IW18	6	15	0	0	0	2,998
Daily Summary				0	0	0	24,730
01/31/2018 07:06 - 14:15	SWFTS-IW01A	6	10	0	0	0	2,719
	SWFTS-IW03	6	5	0	0	0	2,447
	SWFTS-IW07	6	10	0	0	0	2,489
	SWFTS-IW09	6	10	0	0	0	2,727
	SWFTS-IW10	7	10	0	0	0	784
	SWFTS-IW11	5	10	0	0	0	2,197
	SWFTS-IW14	5	15	0	0	0	2,111
	SWFTS-IW15	7	24	0	0	0	2,792
	SWFTS-IW16B	6	10	0	0	0	1,661
	SWFTS-IW18	8	15	0	0	0	3,274
Daily Summary				0	0	0	23,201
02/05/2018 07:35 - 16:15	SWFTS-IW01A	5	15	0	0	0	1,446
	SWFTS-IW02A	4	5	0	0	0	965
	SWFTS-IW03	5	20	0	0	0	2,326
	SWFTS-IW07	5	10	0	0	0	2,476
	SWFTS-IW09	6	10	0	0	0	1,794
	SWFTS-IW10	7	10	0	0	0	3,566
	SWFTS-IW11	4	20	0	0	0	2,224
	SWFTS-IW13A	6	0	0	0	0	421
	SWFTS-IW13B	3	25	0	0	0	641
	SWFTS-IW14	2	15	0	0	0	1,237
	SWFTS-IW15	3	0	0	0	0	1,337
	SWFTS-IW18	4	18	0	0	0	2,200
	SWFTS-IW20	8	5	0	0	0	1,685
Daily Summary				0	0	0	22,318
02/06/2018 07:03 - 16:10	SWFTS-IW02A	4	20	0	0	0	2,064
	SWFTS-IW02B	7	20	0	0	0	1,329
	SWFTS-IW07	4	10	0	0	0	2,222
	SWFTS-IW10	4	10	0	0	0	2,070
	SWFTS-IW11	6	25	0	0	0	1,920
	SWFTS-IW13A	3	0	0	0	0	1,816
	SWFTS-IW13B	3	25	0	0	0	1,367
	SWFTS-IW14	3	15	0	0	0	1,665
	SWFTS-IW15	4	25	0	0	0	760
	SWFTS-IW16A	4	20	0	0	0	1,497
	SWFTS-IW18	4	10	0	0	0	1,937
SWFTS-IW20	7	25	0	0	0	3,888	
Daily Summary				0	0	0	22,535
02/07/2018 07:10 - 16:15	SWFTS-IW02A	3	20	0	0	0	1,212
	SWFTS-IW02B	4	20	0	0	0	1,950
	SWFTS-IW07	4	10	0	0	0	1,976
	SWFTS-IW10	3	10	0	0	0	1,794
	SWFTS-IW13A	3	0	0	0	0	1,714
	SWFTS-IW13B	2	25	0	0	0	1,214
	SWFTS-IW14	2	15	0	0	0	2,991
	SWFTS-IW16A	4	20	0	0	0	1,849
	SWFTS-IW18	3	10	0	0	0	1,585
	SWFTS-IW20	6	25	0	0	0	2,739
Daily Summary				0	0	0	19,024
02/08/2018 06:30 - 15:45	SWFTS-IW02A	3	20	0	0	0	1,457
	SWFTS-IW02B	4	20	0	0	0	1,926
	SWFTS-IW07	4	10	0	0	0	2,422
	SWFTS-IW13A	3	0	0	0	0	2,153
	SWFTS-IW13B	3	25	0	0	0	1,155
	SWFTS-IW14	2	15	0	0	0	829
	SWFTS-IW16A	4	0	0	0	0	1,887
	SWFTS-IW18	3	10	0	0	0	1,653
SWFTS-IW20	6	25	0	0	0	3,154	
Daily Summary				0	0	0	16,636

Table 5 - Summary of Injection Event 2 (January - February 2018)
Seep Well Field Area Bioremediation Treatability Study

Injection Date and Time ¹	Injection Well ID	Average Flow Rate (gpm)	Maximum Pressure (psi)	Injectate Solution			Volume of Distribution Water Injected (gal)
				Volume of EOS (gal)	Volume of Water Injected as Part of Injectate Solution (gal)	Total Volume of Injectate (gal)	
02/09/2018 06:30 - 03:45	SWFTS-IW02A	3	20	0	0	0	1,445
	SWFTS-IW02B	4	20	0	0	0	1,820
	SWFTS-IW07	5	10	0	0	0	2,178
	SWFTS-IW13A	3	0	0	0	0	1,758
	SWFTS-IW13B	3	25	0	0	0	1,223
	SWFTS-IW16A	4	0	0	0	0	1,803
	SWFTS-IW18	4	10	0	0	0	1,992
	SWFTS-IW20	6	25	0	0	0	3,054
Daily Summary				0	0	0	15,273
2/10/2018	SWFTS-IW02A	4	20	0	0	0	857
	SWFTS-IW02B	4	0	0	0	0	975
	SWFTS-IW07	5	10	0	0	0	1,497
	SWFTS-IW13A	4	0	0	0	0	1,493
	SWFTS-IW13B	3	25	0	0	0	1,845
	SWFTS-IW16A	3	0	0	0	0	964
	SWFTS-IW18	4	10	0	0	0	1,383
	SWFTS-IW20	5	25	0	0	0	1,480
Daily Summary				0	0	0	10,494
Injection Event Summary				7,703	30,813	38,516	270,833

Notes:

- gpm gallons per minute
- psi pounds per square inch
- EOS emulsified vegetable oil substrate
- gal gallons

¹ Not all injection wells indicated were operated during the entire time interval specified.

* - Approximately 50 pounds of sodium sulfite were also blended into the injectate solution.

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
COH-2B1	8/9/2017	COH-2B1-BL02	N	1,700	1,800	0.71	2.3	1.14
COH-2B1	9/22/2017	SWFTS-COH-2B1-EM01	N	1,700	1,600	0.53 J	2.7	1.19
COH-2B1	10/5/2017	SWFTS-COH-2B1-EM03	N	1,800	1,400	0.60	2.6	0.14
COH-2B1	10/12/2017	SWFTS-COH-2B1-EM04	N	1,800	1,600	0.58	2.3	7.92
COH-2B1	10/26/2017	SWFTS-COH-2B1-EM05	N	1,900	1,400	0.42 J	2.6	0.40
COH-2B1	12/14/2017	COH-2B1-EM07	N	1,700	5,000	0.40	2.6	-0.06
COH-2B1	2/22/2018	COH-2B1-EM08	N	1,500	1,400	0.57 J	2.9	0.34
COH-2B1	3/29/2018	COH-2B1-EM09	N	1,800	1,200	<0.55	2.3	0.41
PC-58	3/28/2017	PC-58-BL01	N	2,600	19,000	9.9	3.4	0.15
PC-58	7/13/2017	PC-58-BL02	N	2,600	17,000	9.5	2.8	0.00
PC-58	10/11/2017	SWFTS-PC-58-EM04	N	1,800	11,000	9.0	3.2	3.40
PC-58	11/16/2017	SWFTS-PC-58-EM06	N	2,100	16,000	10	2.9	0.65
PC-58	12/14/2017	PC-58-EM07	N	3,100	24,000	12	2.9	0.29
PC-58	2/21/2018	PC-58-EM08	N	3,700	35,000	12	5.4	2.49
PC-58	3/28/2018	PC-58-EM09-EM09	N	1,400	12,000	9.8	2.7	4.31
PC-88	9/22/2017	SWFTS-PC-88-EM01	N	15,000	6,900	4.8	2.7	4.15
PC-88	9/28/2017	SWFTS-PC-88-EM02	N	14,000 J+	6,300	5.8	2.8	1.13
PC-88	10/4/2017	SWFTS-PC-88-EM03	N	15,000	6,100	5.1	2.6	0.21
PC-88	10/11/2017	SWFTS-PC-88-EM04	N	15,000	6,200	4.6	2.5	0.37
PC-88	10/11/2017	SWFTS-PC-88-EM04-FD	FD	15,000	6,000	4.6	2.6	---
PC-88	10/25/2017	SWFTS-PC-88-EM05	N	15,000	5,400	5.0	2.8	0.37
PC-88	11/15/2017	PC-88-EM06	N	15,000	5,700	4.5	2.8	0.46
PC-88	11/15/2017	PC-88-EM06-FD	FD	16,000	5,700	4.6	2.9	---
PC-88	12/14/2017	PC-88-EM07	N	19,000	20,000	9.9	2.7	0.68
PC-88	2/22/2018	PC-88-EM08	N	6,700	14,000	12	3.0	0.29
PC-88	3/29/2018	PC-88-EM09	N	9,100	20,000	13	2.2	0.45
PC-91	3/29/2017	PC-91-BL01	N	2,400	1,700	1.4	2.7	0.25

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
PC-91	7/12/2017	PC-91-BL02	N	2,500	1,600	1.2	2.4	0.31
PC-91	7/12/2017	PC-91-BL02-FD	FD	2,400	1,500	1.1	2.3	---
PC-91	9/21/2017	SWFTS-PC-91-EM01	N	1,600	820	0.50 J	2.3	0.47
PC-91	9/27/2017	SWFTS-PC-91-EM02	N	1,700	810	0.57	2.8	0.72
PC-91	10/4/2017	SWFTS-PC-91-EM03	N	1,300	590	0.58	2.9	0.19
PC-91	10/12/2017	SWFTS-PC-91-EM04	N	960	440	0.35	2.5	0.38 E
PC-91	10/25/2017	SWFTS-PC-91-EM05	N	750	370	0.62	2.7	0.55
PC-91	11/16/2017	SWFTS-PC-91-EM06	N	700	610	0.65 F1	2.8	0.82
PC-91	12/13/2017	PC-91-EM07	N	770	520	0.38	2.5	0.37
PC-91	2/20/2018	PC-91-EM08	N	900	1,100	0.88 J	2.8	0.82
PC-91	3/26/2018	PC-91-EM09	N	930	1,200	0.78	2.5	---
PC-92	3/29/2017	PC-92-BL01	N	9,600	17,000	4.2	2.8	0.35
PC-92	7/12/2017	PC-92-BL02	N	4,400	10,000	2.6	2.8	0.31
PC-92	9/21/2017	SWFTS-PC-92-EM01	N	3,100	7,700	1.7	2.6	0.41
PC-92	9/27/2017	SWFTS-PC-92-EM02	N	3,500	6,800	1.7	2.8	0.45
PC-92	10/4/2017	SWFTS-PC-92-EM03	N	3,700	7,100	2.6	2.8	0.12
PC-92	10/12/2017	SWFTS-PC-92-EM04	N	3,700	7,300	2.1	2.8	9.88 E
PC-92	10/12/2017	SWFTS-PC-92-EM04-FD	FD	3,700	6,700	2.0	2.6	---
PC-92	10/25/2017	SWFTS-PC-92-EM05	N	4,000	6,900	2.3	2.9	0.30
PC-92	11/16/2017	SWFTS-PC-92-EM06	N	2,100	1,300	1.6	3.2	0.42
PC-92	11/16/2017	SWFTS-PC-92-EM06-FD	FD	2,100	1,300	1.1	3.3	---
PC-92	12/14/2017	PC-92-EM07	N	3,300	4,600	2.1	3.0	3.78
PC-92	12/14/2017	PC-92-EM07-FD	FD	3,300	4,800	1.8	3.0	---
PC-92	2/20/2018	PC-92-EM08	N	4,900	7,700	2.7	3.2	4.60
PC-92	2/20/2018	PC-92-EM08-FD	FD	5,000	7,400	2.7	3.2	---
PC-92	3/26/2018	PC-92-EM09	N	7,900	19,000	4.5	2.5	---
PC-92	3/26/2018	PC-92-EM09-FD	FD	8,000	18,000	4.5	2.5	---

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
PC-94	3/28/2017	PC-94-BL01	N	13,000	51,000	12	1.7	0.33
PC-94	7/13/2017	PC-94-BL02	N	14,000	47,000	12	1.3	0.41
PC-94	9/20/2017	SWFTS-PC-94-EM01	N	2,300	3,800	0.58 J	34	0.15
PC-94	9/26/2017	SWFTS-PC-94-EM02	N	2,000	3,700	<1.1	37	0.19
PC-94	10/5/2017	SWFTS-PC-94-EM03	N	1,700	3,600	1.3 J	5.2	0.13
PC-94	10/11/2017	SWFTS-PC-94-EM04	N	970	2,900	0.78 J	3.9	0.55
PC-94	10/26/2017	SWFTS-PC-94-EM05	N	540	1,300	1.4	3.1	3.80
PC-94	11/16/2017	PC-94-EM06	N	1,500	1,300	0.57 J	2.2	0.50
PC-94	12/12/2017	PC-94-EM07	N	4,300	9,300	0.68	2.1	0.19
PC-94	2/21/2018	PC-94-EM08	N	7,200	19,000	4.9	2.1	3.75
PC-94	3/27/2018	PC-94-EM09	N	6,400	16,000	4.8	1.9	2.07
PC-97	7/13/2017	PC-97-BL02	N	1,900	180	0.84	3.0	0.27
PC-97	9/22/2017	SWFTS-PC-97-EM01	N	2,900	360	2.1	3.0	0.39
PC-97	9/22/2017	SWFTS-PC-97-EM01-FD	FD	2,900	340	2.2	3.0	---
PC-97	9/28/2017	SWFTS-PC-97-EM02	N	2,600	370	2.1	3.6	4.28
PC-97	9/28/2017	SWFTS-PC-97-EM02-FD	FD	2,700	380	2.0	3.6	---
PC-97	10/4/2017	SWFTS-PC-97-EM03	N	2,900	460	2.6	2.7	0.19
PC-97	10/4/2017	SWFTS-PC-97-EM03-FD	FD	2,900	410	2.3	2.8	---
PC-97	10/11/2017	SWFTS-PC-97-EM04	N	2,500	400	2.5	2.7	0.48
PC-97	10/11/2017	SWFTS-PC-97-EM04-FD	FD	2,700	390	2.3	2.8	---
PC-97	10/25/2017	SWFTS-PC-97-EM05	N	3,400	390	2.9	2.8	0.39
PC-97	10/25/2017	SWFTS-PC-97-EM05-FD	FD	3,300	410	2.9	2.9	---
PC-97	11/16/2017	SWFTS-PC-97-EM06	N	1,600	190	1.8	3.2	0.48
PC-97	12/13/2017	PC-97-EM07	N	2,600	320	1.6	3.0	0.79
PC-97	12/13/2017	PC-97-EM07-FD	FD	3,000	320	1.9	3.0	---
PC-97	2/21/2018	PC-97-EM08	N	1,500	77	0.56	3.3	2.47
PC-97	3/27/2018	PC-97-EM09	N	900	<10	0.19	3.3	1.68

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-IW01A	7/11/2017	SWFTS-IW01A-BL02	N	20,000	51,000	12	---	0.55
SWFTS-IW01A	11/14/2017	SWFTS-IW01A-EM06	N	42	---	<0.55	610	0.09
SWFTS-IW01B	7/11/2017	SWFTS-IW01B-BL02	N	20,000	48,000	11	---	0.61
SWFTS-IW01B	11/14/2017	SWFTS-IW01B-EM06B	N	---	---	---	160	---
SWFTS-IW01B	11/15/2017	SWFTS-IW01B-EM06	N	170	---	<0.55	220	0.17
SWFTS-IW02A	7/11/2017	SWFTS-IW02A-BL02	N	22,000	52,000	12	2.0	0.57
SWFTS-IW02A	11/14/2017	SWFTS-IW02A-EM06B	N	---	---	---	3,900	---
SWFTS-IW02B	7/11/2017	SWFTS-IW02B-BL02	N	22,000	55,000	12	2.8	0.46
SWFTS-IW02B	11/14/2017	SWFTS-IW02B-EM06B	N	---	---	---	3,100	---
SWFTS-IW03	7/11/2017	SWFTS-IW03-BL02	N	21,000	58,000	13	---	0.48
SWFTS-IW03	7/11/2017	SWFTS-IW03-BL02-FD	FD	21,000	53,000	12	---	---
SWFTS-IW03	12/11/2017	SWFTS-IW03-EM07	N	---	---	---	340	---
SWFTS-IW04	7/11/2017	SWFTS-IW04-BL02	N	17,000	42,000	11	---	0.42
SWFTS-IW04	7/11/2017	SWFTS-IW04-BL02-FD	FD	16,000	42,000	12	---	---
SWFTS-IW04	12/11/2017	SWFTS-IW04-EM07	N	---	---	---	4,600	---
SWFTS-IW05	7/11/2017	SWFTS-IW05-BL02	N	15,000	45,000	12	1.7	0.53
SWFTS-IW05	12/11/2017	SWFTS-IW05-EM07	N	---	---	---	3,700	---
SWFTS-IW06A	7/11/2017	SWFTS-IW06A-BL02	N	15,000	46,000	12	---	2.02
SWFTS-IW06A	11/14/2017	SWFTS-IW06A-EM06B	N	---	---	---	440	0.16
SWFTS-IW06A	11/15/2017	SWFTS-IW06A-EM06	N	230	---	<0.55	630	---
SWFTS-IW06B	7/11/2017	SWFTS-IW06B-BL02	N	15,000	41,000	12	---	0.38
SWFTS-IW06B	11/14/2017	SWFTS-IW06B-EM06B	N	---	---	---	600	0.36
SWFTS-IW06B	11/15/2017	SWFTS-IW06B-EM06	N	20	---	<0.55	660	---
SWFTS-IW07	7/11/2017	SWFTS-IW07-BL02	N	15,000	45,000	11	---	0.55
SWFTS-IW07	12/11/2017	SWFTS-IW07-EM07	N	---	---	---	5,600	---
SWFTS-IW08	7/12/2017	SWFTS-IW08-BL02	N	14,000	40,000	12	---	0.79
SWFTS-IW08	12/11/2017	SWFTS-IW08-EM07	N	---	---	---	6,700	---

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-IW09	7/12/2017	SWFTS-IW09-BL02	N	11,000	48,000	12	1.7	0.47
SWFTS-IW09	7/12/2017	SWFTS-IW09-BL02-FD	FD	11,000	47,000	12	1.4	---
SWFTS-IW09	12/11/2017	SWFTS-IW09-EM07	N	---	---	---	290	---
SWFTS-IW10	7/12/2017	SWFTS-IW10-BL02	N	7,800	37,000	14	---	0.30
SWFTS-IW10	12/11/2017	SWFTS-IW10-EM07	N	---	---	---	290	---
SWFTS-IW11	7/12/2017	SWFTS-IW11-BL02	N	5,600	6,600	2.0	2.6	0.38
SWFTS-IW11	12/11/2017	SWFTS-IW11-EM07	N	---	---	---	1,000	---
SWFTS-IW12	7/12/2017	SWFTS-IW12-BL02	N	6,200	7,800	2.5	---	0.51
SWFTS-IW12	12/11/2017	SWFTS-IW12-EM07	N	---	---	---	2,700	---
SWFTS-IW13A	7/11/2017	SWFTS-IW13A-BL02	N	19,000	52,000	14	---	0.54
SWFTS-IW13A	11/14/2017	SWFTS-IW13A-EM06B	N	---	---	---	3,700	---
SWFTS-IW13B	7/11/2017	SWFTS-IW13B-BL02	N	21,000	53,000	12	---	0.46
SWFTS-IW13B	11/14/2017	SWFTS-IW13B-EM06B	N	---	---	---	1,100	---
SWFTS-IW14	7/12/2017	SWFTS-IW14-BL02	N	21,000	51,000	11	1.9	0.49
SWFTS-IW14	11/14/2017	SWFTS-IW14-EM06B	N	---	---	---	4,600	---
SWFTS-IW14	11/14/2017	SWFTS-IW14-EM06B-FD	FD	---	---	---	4,500	---
SWFTS-IW15	7/12/2017	SWFTS-IW15-BL02	N	15,000	44,000	13	---	0.32
SWFTS-IW15	12/11/2017	SWFTS-IW15-EM07	N	---	---	---	1,300	---
SWFTS-IW15	12/11/2017	SWFTS-IW15-EM07-FD	FD	---	---	---	1,300	---
SWFTS-IW16A	7/11/2017	SWFTS-IW16A-BL02	N	17,000	45,000	11	---	0.86
SWFTS-IW16A	12/11/2017	SWFTS-IW16A-EM07	N	---	---	---	2,800	---
SWFTS-IW16B	7/11/2017	SWFTS-IW16B-BL02	N	15,000	44,000	12	---	0.42
SWFTS-IW16B	12/11/2017	SWFTS-IW16B-EM07	N	---	---	---	940	---
SWFTS-IW17	7/13/2017	SWFTS-IW17-BL02	N	13,000	47,000	12	1.4	0.41
SWFTS-IW17	11/14/2017	SWFTS-IW17-EM06B	N	---	---	---	6,500	---
SWFTS-IW17	11/15/2017	SWFTS-IW17-EM06	N	<19	---	<1.1	7,500	0.36
SWFTS-IW18	7/13/2017	SWFTS-IW18-BL02	N	14,000	47,000	12	---	0.30

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-IW18	11/14/2017	SWFTS-IW18-EM06B	N	---	---	---	1.8	---
SWFTS-IW19	7/13/2017	SWFTS-IW19-BL02	N	6,400	57,000	16	---	3.30
SWFTS-IW19	12/11/2017	SWFTS-IW19-EM07	N	---	---	---	4,100	---
SWFTS-IW20	7/12/2017	SWFTS-IW20-BL02	N	4,400	31,000	17	1.0	4.23
SWFTS-IW20	11/14/2017	SWFTS-IW20-EM06B	N	---	---	---	6,500	---
SWFTS-MW01	3/29/2017	SWFTS-MW01-BL01	N	15,000	49,000	12	1.6	1.07
SWFTS-MW01	9/19/2017	SWFTS-MW01-EM01	N	2,100	39,000	<0.55	11	1.38
SWFTS-MW01	9/26/2017	SWFTS-MW01-EM02	N	4,300	10,000	1.4 J	4.3	0.23
SWFTS-MW01	10/4/2017	SWFTS-MW01-EM03	N	5,000	13,000	3.3	2.5	0.20
SWFTS-MW01	10/10/2017	SWFTS-MW01-EM04	N	5,600	15,000	3.3	2.2	0.47
SWFTS-MW01	10/25/2017	SWFTS-MW01-EM05	N	15,000	18,000	5.1	2.1	0.89
SWFTS-MW01	11/15/2017	SWFTS-MW01-EM06	N	7,900	22,000	4.9	1.9	0.81
SWFTS-MW01	12/14/2017	SWFTS-MW01-EM07	N	8,000	24,000	5.3	1.9	0.20
SWFTS-MW01	2/20/2018	SWFTS-MW01-EM08	N	3,900	12,000	3.4	2.7	2.85
SWFTS-MW01	3/27/2018	SWFTS-MW01-EM09	N	6,900	26,000	5.3	1.9	2.42
SWFTS-MW02	3/29/2017	SWFTS-MW02-BL01	N	25,000	58,000	11	2.2	0.33
SWFTS-MW02	9/21/2017	SWFTS-MW02-EM01	N	23,000	52,000	8.5	2.1	0.16
SWFTS-MW02	9/27/2017	SWFTS-MW02-EM02	N	23,000	47,000	9.4	2.2	0.14
SWFTS-MW02	10/4/2017	SWFTS-MW02-EM03	N	22,000	45,000	8.7	2.0	1.76
SWFTS-MW02	10/12/2017	SWFTS-MW02-EM04	N	20,000	23,000	6.2	2.3	0.25
SWFTS-MW02	10/26/2017	SWFTS-MW02-EM05	N	21,000	34,000	4.6 H	2.5	2.11
SWFTS-MW02	11/14/2017	SWFTS-MW02-EM06	N	17,000	32,000	6.5	2.5	0.90
SWFTS-MW02	12/13/2017	SWFTS-MW02-EM07	N	19,000	38,000	6.7	2.1	0.01
SWFTS-MW02	2/19/2018	SWFTS-MW02-EM08	N	14,000	28,000	4.7	2.5	2.59
SWFTS-MW02	3/27/2018	SWFTS-MW02-EM09	N	4,400	7,400	0.80	2.5	1.76
SWFTS-MW03	3/1/2017	SWFTS-MW03-WG-21	N	7,600	---	---	---	---
SWFTS-MW03	3/1/2017	SWFTS-MW03-WG-32	N	8,600	---	---	---	---

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW03	3/1/2017	SWFTS-MW03-WG-32-FD	FD	8,600	---	---	---	---
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01	N	9,900	47,000	13	1.6	1.64
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01-FD	FD	9,200	47,000	13	1.7	---
SWFTS-MW03	9/21/2017	SWFTS-MW03-EM01	N	<4.8	<100	<0.55	4.2	0.19
SWFTS-MW03	9/27/2017	SWFTS-MW03-EM02	N	4.8	<100	<0.55	3.0	0.11
SWFTS-MW03	10/4/2017	SWFTS-MW03-EM03	N	<0.95	<50	<0.55	2.3	1.02
SWFTS-MW03	10/12/2017	SWFTS-MW03-EM04	N	21	<100	<0.55	2.0	0.14
SWFTS-MW03	10/26/2017	SWFTS-MW03-EM05	N	990	3,200	0.73 J	2.1	1.59
SWFTS-MW03	11/16/2017	SWFTS-MW03-EM06	N	3,200	15,000	3.2	1.7	0.64
SWFTS-MW03	12/12/2017	SWFTS-MW03-EM07	N	3,700	22,000	4.3	1.8	2.21
SWFTS-MW03	2/21/2018	SWFTS-MW03-EM08	N	3,400	33,000	4.2	1.7	0.30
SWFTS-MW03	3/27/2018	SWFTS-MW03-EM09	N	4,200	27,000	6.4	1.5	0.62
SWFTS-MW04	3/31/2017	SWFTS-MW04-BL01	N	14,000	26,000	5.5	2.3	7.02
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01	N	3,600	4,900	1.3	2.6	0.85
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01-FD	FD	3,600	4,800	1.3	2.6	---
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02	N	3,600	5,400	1.5	3.1	2.73
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02-FD	FD	3,500	5,400	1.5	3.1	---
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03	N	4,000	4,700	1.5	2.7	0.11
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03-FD	FD	3,900	4,700	1.9	2.6	---
SWFTS-MW04	10/11/2017	SWFTS-MW04-EM04	N	2,900	3,900	1.3	2.7	1.39
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05	N	3,600	4,200	1.4	2.9	0.28
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05-FD	FD	3,500	4,200	1.5	3.0	---
SWFTS-MW04	11/15/2017	SWFTS-MW04-EM06	N	3,500	3,400	1.6	3.0	0.89
SWFTS-MW04	12/14/2017	SWFTS-MW04-EM07	N	4,000	4,700	1.8	2.9	0.45
SWFTS-MW04	2/21/2018	SWFTS-MW04-EM08	N	5,200	8,000	2.4	2.7	0.37
SWFTS-MW04	3/27/2018	SWFTS-MW04-EM09	N	6,100	14,000	3.5	2.5	0.43
SWFTS-MW05A	3/30/2017	SWFTS-MW05A-BL01	N	7,400	67,000	18	1.4	4.28

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW05A	9/20/2017	SWFTS-MW05A-EM01	N	5,700	51,000	17	1.1	4.18
SWFTS-MW05A	9/27/2017	SWFTS-MW05A-EM02	N	5,600	44,000	18	1.2	3.30
SWFTS-MW05A	10/3/2017	SWFTS-MW05A-EM03	N	5,800	46,000	16	0.80 J	5.46
SWFTS-MW05A	10/10/2017	SWFTS-MW05A-EM04	N	5,600	44,000	16	1.3	3.41
SWFTS-MW05A	10/23/2017	SWFTS-MW05A-EM05	N	4,700	43,000	15	1.3	2.96
SWFTS-MW05A	11/14/2017	SWFTS-MW05A-EM06	N	5,500	38,000	16	1.4	2.27
SWFTS-MW05A	12/13/2017	SWFTS-MW05A-EM07	N	5,300	43,000	17	1.3	2.10
SWFTS-MW05A	2/20/2018	SWFTS-MW05A-EM08	N	6,400	53,000	18	1.4	2.78
SWFTS-MW05A	3/26/2018	SWFTS-MW05A-EM09	N	6,600	180,000	16	1.1	---
SWFTS-MW05B	3/30/2017	SWFTS-MW05B-BL01	N	7,200	48,000	13	1.5	0.70
SWFTS-MW05B	9/22/2017	SWFTS-MW05B-EM01	N	190	300	<0.55	39	0.24
SWFTS-MW05B	9/27/2017	SWFTS-MW05B-EM02	N	<0.95	<50	<0.55	57	0.10
SWFTS-MW05B	10/3/2017	SWFTS-MW05B-EM03	N	8.3	<50	<0.55	90	0.10
SWFTS-MW05B	10/10/2017	SWFTS-MW05B-EM04	N	<0.95	<100	<0.55	100	0.08
SWFTS-MW05B	10/23/2017	SWFTS-MW05B-EM05	N	<0.95	<100	<0.55	68	0.34
SWFTS-MW05B	11/14/2017	SWFTS-MW05B-EM06	N	<0.95	16 J	<0.55	3.2	0.46
SWFTS-MW05B	12/13/2017	SWFTS-MW05B-EM07	N	990	5,300	0.36 J	2.3	0.30
SWFTS-MW05B	2/20/2018	SWFTS-MW05B-EM08	N	2,000	11,000	4.2	2.2	0.34
SWFTS-MW05B	3/26/2018	SWFTS-MW05B-EM09	N	2,600	5,800	4.6	1.7	---
SWFTS-MW06A	3/30/2017	SWFTS-MW06A-BL01	N	170	<10	<0.11	3.6	0.38
SWFTS-MW06A	9/21/2017	SWFTS-MW06A-EM01	N	2,400	220	1.5	3.0	0.16
SWFTS-MW06A	9/27/2017	SWFTS-MW06A-EM02	N	2,600	320	1.7	3.3	0.30
SWFTS-MW06A	10/3/2017	SWFTS-MW06A-EM03	N	2,700	300	2.0 J-	2.8	0.12
SWFTS-MW06A	10/11/2017	SWFTS-MW6A-EM04	N	5,500	1,100	1.9	3.0	0.37
SWFTS-MW06A	10/23/2017	SWFTS-MW06A-EM05	N	2,300	350	1.9	3.3	2.52
SWFTS-MW06A	11/16/2017	SWFTS-MW06A-EM06	N	3,300	380	2.5	2.8	0.42
SWFTS-MW06A	12/13/2017	SWFTS-MW06A-EM07	N	3,600	520	2.6	2.7	0.17

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW06A	2/22/2018	SWFTS-MW06A-EM08	N	1,800	200	0.88	3.4	0.37
SWFTS-MW06A	3/28/2018	SWFTS-MW06A-EM09	N	1,500	77	0.36	3.1	0.44
SWFTS-MW06B	3/30/2017	SWFTS-MW06B-BL01	N	1,000	490	0.13 J	3.5	0.06
SWFTS-MW06B	9/21/2017	SWFTS-MW06B-EM01	N	2,000	350	0.70	2.8	0.18
SWFTS-MW06B	9/27/2017	SWFTS-MW06B-EM02	N	2,000	360	0.76	3.3	0.78
SWFTS-MW06B	10/3/2017	SWFTS-MW06B-EM03	N	2,500	340	1.0	2.8	0.11
SWFTS-MW06B	10/11/2017	SWFTS-MW6B-EM04	N	4,400	380	1.1	3.1	0.45
SWFTS-MW06B	10/23/2017	SWFTS-MW06B-EM05	N	2,000	390	1.3	3.1	1.14
SWFTS-MW06B	11/16/2017	SWFTS-MW06B-EM06	N	2,800	400	1.8	2.9	0.44
SWFTS-MW06B	12/13/2017	SWFTS-MW06B-EM07	N	3,200	590	2.2	2.9	0.91
SWFTS-MW06B	2/22/2018	SWFTS-MW06B-EM08	N	2,900	480	1.9	3.1	0.47
SWFTS-MW06B	3/28/2018	SWFTS-MW06B-EM09	N	2,500	370	1.1	2.8	0.59
SWFTS-MW07A	3/30/2017	SWFTS-MW07A-BL01	N	14,000	44,000	11	2.1	0.16
SWFTS-MW07A	9/20/2017	SWFTS-MW07A-EM01	N	14,000	41,000	11	2.0	0.20
SWFTS-MW07A	9/26/2017	SWFTS-MW07A-EM02	N	15,000	36,000	11	2.3	0.49
SWFTS-MW07A	10/3/2017	SWFTS-MW07A-EM03	N	16,000	37,000	10	2.1	0.22
SWFTS-MW07A	10/11/2017	SWFTS-MW07A-EM04	N	12,000	39,000	12	2.0	0.11
SWFTS-MW07A	10/24/2017	SWFTS-MW07A-EM05	N	14,000	38,000	10	2.3	0.43
SWFTS-MW07A	11/15/2017	SWFTS-MW07A-EM06	N	16,000	40,000	12	2.1	0.35
SWFTS-MW07A	12/14/2017	SWFTS-MW07A-EM07	N	14,000	35,000	11	2.1	-0.02
SWFTS-MW07A	2/19/2018	SWFTS-MW07A-EM08	N	12,000	36,000	12	2.2	0.72
SWFTS-MW07A	3/28/2018	SWFTS-MW07A-EM09	N	11,000	36,000	12	1.8	3.29
SWFTS-MW07B	3/30/2017	SWFTS-MW07B-BL01	N	13,000	40,000	11	2.0	1.29
SWFTS-MW07B	9/20/2017	SWFTS-MW07B-EM01	N	10,000	33,000	9.0	1.8	0.35
SWFTS-MW07B	9/26/2017	SWFTS-MW07B-EM02	N	11,000	29,000	10	2.2	0.60
SWFTS-MW07B	10/3/2017	SWFTS-MW07B-EM03	N	9,400	28,000	9.9	1.6	1.38
SWFTS-MW07B	10/11/2017	SWFTS-MW07B-EM04	N	8,400	28,000	11	1.7	0.13

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW07B	10/24/2017	SWFTS-MW07B-EM05	N	9,300	29,000	11	1.2	0.33
SWFTS-MW07B	11/15/2017	SWFTS-MW07B-EM06	N	9,700	29,000	12	2.0	0.42
SWFTS-MW07B	12/14/2017	SWFTS-MW07B-EM07	N	9,400	30,000	12	1.9	-0.09
SWFTS-MW07B	2/19/2018	SWFTS-MW07B-EM08	N	9,700	37,000	14	2.2	1.23
SWFTS-MW07B	3/28/2018	SWFTS-MW07B-EM09	N	11,000	47,000	16	1.7	0.30
SWFTS-MW08A	3/30/2017	SWFTS-MW08A-BL01	N	14,000	20,000	11	1.5	0.25
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01	N	10,000	47,000	12	1.4	0.41
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01-FD	FD	10,000	46,000	13	1.4	---
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02	N	9,800	40,000	12	1.7	0.27
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02-FD	FD	10,000	42,000	12	1.8	---
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03	N	7,800	42,000	14	1.6	4.16
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03-FD	FD	9,800	49,000	12	2.0	---
SWFTS-MW08A	10/10/2017	SWFTS-MW08A-EM04	N	9,500	43,000	12	1.6	44.01 E
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05	N	8,100	41,000	14	1.8	1.49
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05-FD	FD	8,100	40,000	12	1.8	---
SWFTS-MW08A	11/15/2017	SWFTS-MW08A-EM06	N	9,000	43,000	14	1.6	0.60
SWFTS-MW08A	12/14/2017	SWFTS-MW08A-EM07	N	8,900	45,000	14	1.6	0.11
SWFTS-MW08A	2/22/2018	SWFTS-MW08A-EM08	N	9,500	54,000	14	1.9	5.05
SWFTS-MW08A	3/29/2018	SWFTS-MW08A-EM09	N	9,100	59,000	15	1.5	2.61
SWFTS-MW08C	3/9/2017	SWFTS-MW08C-WG-50	N	10,000	---	---	---	---
SWFTS-MW08C	3/28/2017	SWFTS-MW08C-BL01	N	7,800	55,000	13	1.3	0.08
SWFTS-MW08C	12/14/2017	SWFTS-MW08C-EM07	N	9,300	50,000	13	1.1	-0.06
SWFTS-MW09A	3/29/2017	SWFTS-MW09A-BL01	N	14,000	50,000	13	1.6	0.33
SWFTS-MW09A	9/21/2017	SWFTS-MW09A-EM01	N	3,400	1,200	<0.55	51	0.57
SWFTS-MW09A	9/28/2017	SWFTS-MW09A-EM02	N	54	<100	<0.55	40	0.26
SWFTS-MW09A	10/4/2017	SWFTS-MW09A-EM03	N	420	200	<0.55	22	4.54
SWFTS-MW09A	10/11/2017	SWFTS-MW09A-EM04	N	8.4 F1	55	<0.55	7.5	0.12

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW09A	10/25/2017	SWFTS-MW09A-EM05	N	1,300	1,700	<0.55	2.9	0.31
SWFTS-MW09A	11/16/2017	SWFTS-MW09A-EM06	N	3,400	8,400	1.2	2.1	1.88
SWFTS-MW09A	12/12/2017	SWFTS-MW09A-EM07	N	5,400	16,000	2.7	2.1	0.29
SWFTS-MW09A	2/20/2018	SWFTS-MW09A-EM08	N	6,800	16,000	5.3	2.1	4.16
SWFTS-MW09A	3/27/2018	SWFTS-MW09A-EM09	N	6,700	18,000	6.4	1.8	2.12
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01	N	13,000	46,000	12	1.8	0.31
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01-FD	FD	15,000	46,000	12	1.8	---
SWFTS-MW09B	9/21/2017	SWFTS-MW09B-EM01	N	220	390	<0.55	30	1.81
SWFTS-MW09B	9/28/2017	SWFTS-MW09B-EM02	N	990	2,500	<0.55	25	0.38
SWFTS-MW09B	10/4/2017	SWFTS-MW09B-EM03	N	430	1,000	<1.1	29	3.71
SWFTS-MW09B	10/11/2017	SWFTS-MW09B-EM04	N	1,400	3,000	1.1	18	0.12
SWFTS-MW09B	10/25/2017	SWFTS-MW09B-EM05	N	2,700	7,700	1.7	2.4	0.38
SWFTS-MW09B	11/16/2017	SWFTS-MW09B-EM06	N	2,400	8,600	2.1	2.1	0.77
SWFTS-MW09B	12/12/2017	SWFTS-MW09B-EM07	N	3,500	13,000	3.4	2.1	0.07
SWFTS-MW09B	2/20/2018	SWFTS-MW09B-EM08	N	800	1,400	<1.1	2.5	5.47
SWFTS-MW09B	3/27/2018	SWFTS-MW09B-EM09	N	7,700	28,000	5.9	1.8	2.09
SWFTS-MW10A	3/31/2017	SWFTS-MW10A-BL01	N	13,000	27,000	5.1	2.8	2.70
SWFTS-MW10A	9/21/2017	SWFTS-MW10A-EM01	N	1.9 J	<50	<0.55	23	0.42
SWFTS-MW10A	9/27/2017	SWFTS-MW10A-EM02	N	100	<100	0.66 J	12	5.10
SWFTS-MW10A	10/4/2017	SWFTS-MW10A-EM03	N	14	<100	<0.28	10	4.56
SWFTS-MW10A	10/12/2017	SWFTS-MW10A-EM04	N	<0.95	13 J	<0.11	13	0.15
SWFTS-MW10A	10/24/2017	SWFTS-MW10A-EM05	N	14	630	<0.28	6.3	1.38
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06	N	11	<50	<0.28	4.2	0.60
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06-FD	FD	15	<50	<0.28	4.0	---
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07	N	160	190	<0.28	3.2	0.53
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07-FD	FD	170	180	<0.28	3.4	---
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08	N	990	1,400	<1.1	3.2	0.44

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08-FD	FD	1,000	1,300	1.3 J	3.3	---
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09	N	2,300	4,000	0.37 J	2.8	---
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09-FD	FD	2,200	4,000	0.36 J	2.8	---
SWFTS-MW10C	3/28/2017	SWFTS-MW10C-BL01	N	8,300	39,000	7.6	1.5	0.09
SWFTS-MW10C	12/12/2017	SWFTS-MW10C-EM07	N	9,200	38,000	8.4	1.3	0.51
SWFTS-MW11	7/12/2017	SWFTS-MW11-BL02	N	13,000 J+	41,000	12	1.8	4.30
SWFTS-MW11	9/20/2017	SWFTS-MW11-EM01	N	13,000	40,000	11	1.7	1.86
SWFTS-MW11	9/26/2017	SWFTS-MW11-EM02	N	14,000	37,000	12	2.1	1.47
SWFTS-MW11	10/3/2017	SWFTS-MW11-EM03	N	13,000	36,000	12	1.8	0.93
SWFTS-MW11	10/11/2017	SWFTS-MW11-EM04	N	16,000	38,000	11	1.6	1.15
SWFTS-MW11	10/24/2017	SWFTS-MW11-EM05	N	13,000	36,000	12	5.7	2.32
SWFTS-MW11	11/16/2017	SWFTS-MW11-EM06	N	14,000	37,000	12	1.7	0.95
SWFTS-MW11	12/14/2017	SWFTS-MW11-EM07	N	12,000	40,000	11	2.0	1.78
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08	N	12,000	45,000	14	1.7	7.35
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08-FD	FD	12,000	46,000	13	1.9	---
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09	N	13,000	49,000	14	1.5	4.05
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09-FD	FD	13,000	49,000	14	1.5	---
SWFTS-MW12	7/13/2017	SWFTS-MW12-BL02	N	5,100	37,000	16	0.88 J	7.81
SWFTS-MW12	9/19/2017	SWFTS-MW12-EM01	N	5,100	360,000	14	1.1	4.36
SWFTS-MW12	9/26/2017	SWFTS-MW12-EM02	N	4,900	34,000	14	1.6	2.98
SWFTS-MW12	10/3/2017	SWFTS-MW12-EM03	N	5,400	34,000	14 J-	0.78 J	2.77
SWFTS-MW12	10/11/2017	SWFTS-MW12-EM04	N	4,800	35,000	13	0.93 J	1.59
SWFTS-MW12	10/24/2017	SWFTS-MW12-EM05	N	5,000	37,000	14	1.2	5.09
SWFTS-MW12	11/14/2017	SWFTS-MW12-EM06	N	4,700	33,000	14	0.99 J	2.52
SWFTS-MW12	12/14/2017	SWFTS-MW12-EM07	N	4,900	30,000	13	1.5	4.37
SWFTS-MW12	2/22/2018	SWFTS-MW12-EM08	N	4,500	26,000	12	1.6	5.95
SWFTS-MW12	3/28/2018	SWFTS-MW12-EM09	N	6,400	39,000	14	1.3	4.30

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW13	7/12/2017	SWFTS-MW13-BL02	N	4,600	40,000	12	1.6	4.72
SWFTS-MW13	9/20/2017	SWFTS-MW13-EM01	N	10,000	52,000	17	1.1	5.20
SWFTS-MW13	9/26/2017	SWFTS-MW13-EM02	N	6,200	53,000	18	1.4	3.17
SWFTS-MW13	10/3/2017	SWFTS-MW13-EM03	N	6,900	100	17 J-	1.1	5.57
SWFTS-MW13	10/10/2017	SWFTS-MW13-EM04	N	6,300	51,000	16	0.98 J	2.40
SWFTS-MW13	10/24/2017	SWFTS-MW13-EM05	N	6,100	52,000	19	1.3	6.62
SWFTS-MW13	11/15/2017	SWFTS-MW13-EM06	N	5,900	49,000	16	0.93 J	3.22
SWFTS-MW13	12/14/2017	SWFTS-MW13-EM07	N	6,200	49,000	16	1.2	3.79
SWFTS-MW13	2/22/2018	SWFTS-MW13-EM08	N	5,800	50,000	15	1.5	4.95
SWFTS-MW13	3/26/2018	SWFTS-MW13-EM09	N	6,400	52,000	16 F1	1.2	---
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02	N	23,000	54,000	12	2.6	0.65
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02-FD	FD	22,000	52,000	12	2.3	---
SWFTS-MW14	9/20/2017	SWFTS-MW14-EM01	N	<9.5	<100	<0.55	100	0.39
SWFTS-MW14	9/26/2017	SWFTS-MW14-EM02	N	<4.8	2,400	<1.1	81	0.17
SWFTS-MW14	10/3/2017	SWFTS-MW14-EM03	N	4.8	<100	<0.55 UJ	36	0.19
SWFTS-MW14	10/11/2017	SWFTS-MW14-EM04	N	<9.5	<50	<0.55	4.1	0.39
SWFTS-MW14	10/27/2017	SWFTS-MW14-EM05	N	26	<50	<0.28	3.5	0.60
SWFTS-MW14	11/15/2017	SWFTS-MW14-EM06	N	20 F1	<50	<0.55	3.1	0.83
SWFTS-MW14	12/12/2017	SWFTS-MW14-EM07	N	1,600	2,400	<0.55	2.6	6.49
SWFTS-MW14	2/20/2018	SWFTS-MW14-EM08	N	2,200	<100	<1.1	670	3.12
SWFTS-MW14	3/26/2018	SWFTS-MW14-EM09	N	5,500	<50	<0.28	220	---
SWFTS-MW15	7/13/2017	SWFTS-MW15-BL02	N	15,000	43,000	10	1.6	0.47
SWFTS-MW15	9/20/2017	SWFTS-MW15-EM01	N	11,000	40,000	10	1.6	0.27
SWFTS-MW15	9/26/2017	SWFTS-MW15-EM02	N	12,000	41,000	11	1.5	0.30
SWFTS-MW15	10/4/2017	SWFTS-MW-15-EM03	N	11,000	39,000	12	1.4	0.38
SWFTS-MW15	10/10/2017	SWFTS-MW15-EM04	N	18,000	40,000	11	1.6	0.21
SWFTS-MW15	10/27/2017	SWFTS-MW15-EM05	N	13,000	38,000	13	1.8	0.78

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW15	11/14/2017	SWFTS-MW15-EM06	N	9,900	38,000	12	1.8	1.08
SWFTS-MW15	12/13/2017	SWFTS-MW15-EM07	N	13,000	38,000	12	1.6	3.83
SWFTS-MW15	2/19/2018	SWFTS-MW15-EM08	N	12,000	47,000	11	1.6	3.24
SWFTS-MW15	3/26/2018	SWFTS-MW15-EM09	N	12,000	52,000	12	1.7	---
SWFTS-MW16	7/13/2017	SWFTS-MW16-BL02	N	8,400	38,000	12	1.6	0.93
SWFTS-MW16	9/22/2017	SWFTS-MW16-EM01	N	1,700	8,700	3.3	120	0.71
SWFTS-MW16	9/26/2017	SWFTS-MW16-EM02	N	1,300	8,800	3.8	68	1.54
SWFTS-MW16	10/3/2017	SWFTS-MW16-EM03	N	1,600	6,300	2.7	92	1.30
SWFTS-MW16	10/12/2017	SWFTS-MW16-EM04	N	1,100	5,800	2.1	180	1.32
SWFTS-MW16	10/24/2017	SWFTS-MW16-EM05	N	830	4,700	1.5	180	1.03
SWFTS-MW16	11/16/2017	SWFTS-MW16-EM06	N	<0.95	4,000	1.2	110	0.49
SWFTS-MW16	12/12/2017	SWFTS-MW16-EM07	N	490	3,100	1.1	5.9	0.56
SWFTS-MW16	2/21/2018	SWFTS-MW16-EM08	N	620	2,800	<1.1	7.7	0.49
SWFTS-MW16	3/27/2018	SWFTS-MW16-EM09	N	9,000	46,000	12	1.5	0.49
SWFTS-MW17	7/12/2017	SWFTS-MW17-BL02	N	3,200	---	16	1.1	4.30
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01	N	2,600	180,000	16	1.2	5.07
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01-FD	FD	2,600	180,000	16	1.3	---
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02	N	2,800	17,000	17	1.5	4.04
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02-FD	FD	2,800	17,000	17	1.5	---
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03	N	3,300	19,000	15	1.1	6.87
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03-FD	FD	3,300	19,000	16	1.0	---
SWFTS-MW17	10/10/2017	SWFTS-MW17-EM04	N	2,800	16,000	16	1.3	3.90
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05	N	2,700	15,000	17	1.2	5.28
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05-FD	FD	2,700	15,000	16	2.2	---
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06	N	2,300	16,000	17	1.3	4.91
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06-FD	FD	2,200	15,000	17	1.2	---
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07	N	2,200	14,000	16	1.2	5.54

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
				ug/L	ug/L	mg/L	mg/L	Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07-FD	FD	2,300	13,000	16	1.2	---
SWFTS-MW17	2/22/2018	SWFTS-MW17-EM08	N	2,000	15,000	16	2.1	3.65
SWFTS-MW17	3/28/2018	SWFTS-MW17-EM09	N	2,000	14,000	15	1.2	3.49
SWFTS-MW18	7/11/2017	SWFTS-MW18-BL02	N	13,000	52,000	12	1.5	2.68
SWFTS-MW18	9/21/2017	SWFTS-MW18-EM01	N	9,700	34,000	8.9	2.0	0.59
SWFTS-MW18	9/27/2017	SWFTS-MW18-EM02	N	11,000	36,000	12	2.2	0.40
SWFTS-MW18	10/3/2017	SWFTS-MW18-EM03	N	8,100	30,000	8.6	1.5	2.22
SWFTS-MW18	10/10/2017	SWFTS-MW18-EM04	N	9,700	40,000	12	1.7	0.31
SWFTS-MW18	10/23/2017	SWFTS-MW18-EM05	N	8,200	38,000	12	1.7	0.98
SWFTS-MW18	11/15/2017	SWFTS-MW18-EM06	N	11,000	37,000	11	1.8	1.37
SWFTS-MW18	12/13/2017	SWFTS-MW18-EM07	N	9,100	39,000	12	1.6	0.40
SWFTS-MW18	2/22/2018	SWFTS-MW18-EM08	N	8,900	45,000	12	2.3	0.51
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09	N	2,000	11,000	3.9	2.5	0.25
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09-FD	FD	2,100	11,000	3.5	2.4	---
SWFTS-MW19	7/12/2017	SWFTS-MW19-BL02	N	840	130	0.33	2.6	0.77
SWFTS-MW19	9/21/2017	SWFTS-MW19-EM01	N	1,400	220	0.51	2.3	0.43
SWFTS-MW19	9/28/2017	SWFTS-MW19-EM02	N	1,400	260	0.74	2.8	6.39
SWFTS-MW19	10/5/2017	SWFTS-MW19-EM03	N	1,400	220	0.63	2.6	5.16
SWFTS-MW19	10/12/2017	SWFTS-MW19-EM04	N	1,400	220 F1	0.70	2.2	0.28
SWFTS-MW19	10/27/2017	SWFTS-MW19-EM05	N	1,900	250	0.77	2.6	0.38
SWFTS-MW19	11/16/2017	SWFTS-MW-19-EM06	N	1,500	270	0.97	2.3	0.73
SWFTS-MW19	12/12/2017	SWFTS-MW19-EM07	N	2,000	410	1.2	2.4	0.92
SWFTS-MW19	2/20/2018	SWFTS-MW19-EM08	N	1,900	610	0.73	2.6	1.25
SWFTS-MW19	3/27/2018	SWFTS-MW19-EM09	N	1,800	650	0.71	2.2	1.09
SWFTS-MW20	7/12/2017	SWFTS-MW20-BL02	N	20,000	51,000	13	1.7	6.05
SWFTS-MW20	9/21/2017	SWFTS-MW20-EM01	N	17,000	30,000	7.3	2.5	3.72
SWFTS-MW20	9/26/2017	SWFTS-MW20-EM02	N	16,000	33,000	7.6	3.0	0.49

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW20	10/4/2017	SWFTS-MW20-EM03	N	19,000	38,000	9.6	2.6	0.22
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04	N	14,000	42,000	8.5	2.2	0.23
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04-FD	FD	14,000	40,000	9.1	2.2	---
SWFTS-MW20	10/25/2017	SWFTS-MW20-EM05	N	17,000	40,000	11	2.6	0.45
SWFTS-MW20	11/16/2017	SWFTS-MW20-EM06	N	7,900	16,000	4.0	3.0	0.74
SWFTS-MW20	12/12/2017	SWFTS-MW20-EM07	N	16,000	43,000	8.5	2.2	0.20
SWFTS-MW20	2/19/2018	SWFTS-MW20-EM08	N	6,600	16,000	3.2	2.5	2.54
SWFTS-MW20	3/27/2018	SWFTS-MW20-EM09	N	11,000	24,000	5.2	2.2	3.64
SWFTS-MW21	7/13/2017	SWFTS-MW21-BL02	N	5,800	49,000	15	0.94 J	6.15
SWFTS-MW21	9/21/2017	SWFTS-MW21-EM01	N	5,200	15,000	3.9	7.5	4.90
SWFTS-MW21	9/27/2017	SWFTS-MW21-EM02	N	950	4,700	1.8 J	19	0.28
SWFTS-MW21	10/5/2017	SWFTS-MW21-EM03	N	1,100	7,700	3.2	24	4.40
SWFTS-MW21	10/11/2017	SWFTS-MW21-EM04	N	820	4,200	1.8	25	0.28
SWFTS-MW21	10/27/2017	SWFTS-MW21-EM05	N	890	5,000	2.0	2.8	0.45
SWFTS-MW21	11/15/2017	SWFTS-MW21-EM06	N	2,300	13,000	3.7	2.1	3.07
SWFTS-MW21	12/13/2017	SWFTS-MW21-EM07	N	3,500	26,000	4.7	1.6	0.68
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08	N	4,800	34,000	11	1.6	0.24
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08-FD	FD	4,900	33,000	11	1.6	---
SWFTS-MW21	3/27/2018	SWFTS-MW21-EM09	N	4,600	32,000	10	1.1	0.37
SWFTS-MW22	7/13/2017	SWFTS-MW22-BL02	N	5,000	7,900	2.2	2.2	2.09
SWFTS-MW22	9/20/2017	SWFTS-MW22-EM01	N	4,000	6,700	1.7	2.2	0.32
SWFTS-MW22	9/27/2017	SWFTS-MW22-EM02	N	3,800	6,300	1.7	2.6	0.12
SWFTS-MW22	10/5/2017	SWFTS-MW22-EM03	N	3,500	6,000	1.7	2.7	0.41
SWFTS-MW22	10/12/2017	SWFTS-MW22-EM04	N	2,600	5,700	1.4	2.3	2.72
SWFTS-MW22	10/26/2017	SWFTS-MW22-EM05	N	3,700	5,500	1.6	2.6	0.29
SWFTS-MW22	11/16/2017	SWFTS-MW22-EM06	N	3,000	4,400	1.3	2.5	0.45
SWFTS-MW22	12/14/2017	SWFTS-MW22-EM07	N	2,500	4,900	1.4	2.6	1.31

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW22	2/21/2018	SWFTS-MW22-EM08	N	2,000	2,400	0.89 J	2.4	0.43
SWFTS-MW22	3/28/2018	SWFTS-MW22-EM09	N	2,000	2,600	0.83	2.4	0.65
SWFTS-MW23	7/13/2017	SWFTS-MW23-BL02	N	930	20	0.14 J	2.9	0.36
SWFTS-MW23	9/22/2017	SWFTS-MW23-EM01	N	1,700	160 J	0.64	3.1	0.55
SWFTS-MW23	9/28/2017	SWFTS-MW23-EM02	N	1,700	120	0.67	3.3	0.16
SWFTS-MW23	10/5/2017	SWFTS-MW23-EM03	N	1,900	<2,000	0.79	3.2	0.79
SWFTS-MW23	10/11/2017	SWFTS-MW23-EM04	N	4,000	220	0.88	2.9	1.87
SWFTS-MW23	10/26/2017	SWFTS-MW23-EM05	N	2,400	270	1.2	2.8	0.38
SWFTS-MW23	11/15/2017	SWFTS-MW23-EM06	N	2,400	270	1.4	3.0	0.49
SWFTS-MW23	12/12/2017	SWFTS-MW23-EM07	N	2,800	370	1.5	2.7	0.23
SWFTS-MW23	2/21/2018	SWFTS-MW23-EM08	N	2,800	300 H	1.6	3.1	5.42
SWFTS-MW23	3/28/2018	SWFTS-MW23-EM09	N	2,100	180	0.83	2.8	2.59
SWFTS-MW24	7/13/2017	SWFTS-MW24-BL02	N	13,000	47,000	13	1.3	3.04
SWFTS-MW24	9/22/2017	SWFTS-MW24-EM01	N	9,400	32,000	9.0	1.7	1.31
SWFTS-MW24	9/28/2017	SWFTS-MW24-EM02	N	5,200	12,000	4.5	4.3	0.48
SWFTS-MW24	10/5/2017	SWFTS-MW24-EM03	N	7,800	34,000	9.4	2.0	0.76
SWFTS-MW24	10/11/2017	SWFTS-MW24-EM04	N	4,400	17,000	4.7	1.9	3.88
SWFTS-MW24	10/26/2017	SWFTS-MW24-EM05	N	7,000	24,000	7.9	2.0	3.06
SWFTS-MW24	11/15/2017	SWFTS-MW24-EM06	N	4,100	14,000	3.9	1.9	1.39
SWFTS-MW24	12/12/2017	SWFTS-MW24-EM07	N	6,600	26,000	6.1	1.5	1.11
SWFTS-MW24	2/21/2018	SWFTS-MW24-EM08	N	6,100	22,000	6.9	2.0	0.95
SWFTS-MW24	3/28/2018	SWFTS-MW24-EM09	N	4,800	15,000	5.4	1.6	0.55
SWFTS-MW25	7/13/2017	SWFTS-MW25-BL02	N	17,000	43,000	10	1.8	3.03
SWFTS-MW25	9/22/2017	SWFTS-MW25-EM01	N	280	<200	<0.55	13	0.50
SWFTS-MW25	9/28/2017	SWFTS-MW25-EM02	N	370	130	<0.55	4.8	0.14
SWFTS-MW25	10/5/2017	SWFTS-MW25-EM03	N	230	<500	<0.55	3.3	0.96
SWFTS-MW25	10/11/2017	SWFTS-MW25-EM04	N	140	160	<0.55	2.7	0.26

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Table 6 - Groundwater Analytical Results
Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Field Measurement
								Dissolved Oxygen
				ug/L	ug/L	mg/L	mg/L	mg/L
SWFTS-MW25	10/26/2017	SWFTS-MW25-EM05	N	420	170	<0.28	2.6	0.98
SWFTS-MW25	11/15/2017	SWFTS-MW25-EM06	N	440	630	<0.55	2.5	1.11
SWFTS-MW25	12/12/2017	SWFTS-MW25-EM07	N	2,300	1,700	<0.55	2.3	0.63
SWFTS-MW25	2/21/2018	SWFTS-MW25-EM08	N	2,800	4,700	<1.1	2.4	0.32
SWFTS-MW25	3/28/2018	SWFTS-MW25-EM09	N	4,600	11,000	2.8	2.0	0.20

Notes:

mg/L - milligrams per liter

ug/L - micrograms per liter

-- not analyzed

< - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.

J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.

F1 - Matrix Spike and/or Matrix Spike Duplicate Recovery is outside acceptance limits.

F2- Matrix Spike/Matrix Spike Duplicate relative percent difference exceeds control limits.

E- Instrument error during sampling