



Stantec Consulting Services Inc.
725 East Fireweed Lane Suite 200, Anchorage AK 99503-224

December 7, 2021

Stantec Project Number: 185705374

Anastasia Duarte, REHS/RS
Environmental Representative
Speedway LLC
18336 Aurora Avenue North, Suite 105, #65028
Shoreline, Washington 981330-9996

RE: **2022 Corrective Action Work Plan**

Speedway Store 5310 (formerly Tesoro 2 Go Mart 112)
3392 Badger Road, North Pole, Alaska
ADEC Facility ID #1116; ADEC Hazard #24476; ADEC File #100.26.159

Dear Ms. Duarte:

This letter presents the proposed work plan tasks for the 2022 (calendar year) Corrective Action Plan (CAP) pertaining to the investigation and remediation of contamination at the above referenced site. This 2022 CAP will be presented at the annual work session with the Alaska Department of Environmental Conservation (ADEC), Speedway LLC and Stantec Consulting Services Inc. (Stantec). The work session is scheduled for December 7, 2021, and will be presented by Stantec to Pete Campbell, ADEC representative, in person or via Microsoft Teams app.

Attached to this letter are the project site plans and analytical test results for samples collected during the completion of the 2021 CAP tasks. The site plans, sampling test results and additional site documents for the subject site will be included in the presentation of the December 7 work session.

The following sections provide a summary of the work plan tasks that were completed under the current 2021 CAP and the proposed work plan tasks for the 2022 CAP.

2021 Work Plan Tasks

- *Task 1 – Groundwater Monitoring*

This task was completed in accordance with the approved 2021 CAP.

- *Task 2 – O&M Chemical Oxidation (Chemox) Treatment System*

This task was completed in accordance with the approved 2021 CAP.

Proposed Work Plan Tasks for 2022

- ***Task 1 –Groundwater Monitoring***

Quarterly monitoring of the groundwater wells and annual monitoring of several existing drinking water wells will be conducted. Sampling locations and analyses for the monitoring and drinking water wells are listed on the 2022 Work Plan Schedule below.

Work Plan Task		1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Task 1	Monitoring Wells: MW-2, MW-3, MW-6, MW-10, MW-17-2 and MW-17-5.		V, G, D, P, I & S		V, G, D, P, I, & S
	Monitoring Wells MW-1 and MW-4				V, G, D, P, I, & S
	Monitoring Wells MW-3, MW 17-2 and MW 17-5	V, G, D, P, I & S		V, G, D, P, I & S	
Task 2	Chemical Oxidation Treatment	✓	✓	✓	✓
Task 3	Decommission Former Remediation System (23 AS Wells, 9 SVE Wells and Remediation Shed) and 3 MWs (MW-7, MW-8 and MW-9)		✓	✓	

Key:

- AK – Alaska Test Method
- D – Diesel range organics by AK102.
- E – Drinking water parameters by EPA Method 524.1.
- G – Gasoline range organics by AK101.
- I – Intrinsic indicators include: dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.
- O&M – Operation and Maintenance
- P – Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds associated with petroleum fuel, by EPA Test Method 8270D Selective Ion Monitoring (SIM).
- S – Sodium analyzed by Metals (ICP) Method 6010C.
- V – Volatile organic compounds by EPA Test Method 8260C.

- ***Task 2 – Chemical Oxidation Treatment***

Stantec proposes to provide chemical oxidation treatment of the petroleum contaminated soil and groundwater located in the source area of the former underground storage tank (UST) system. The chemox injection will occur in all four quarters of the year into the following injection wells: RM17-1, RM17-3, RM17-4, and RM17-6. Approximately 100 gallons of a prepared solution of potable water and 110 pounds of Klozur One® will be

manually injected via gravity and/or a low-pressure booster pump into each of the four remediation wells. Following the injection of the chemox solution, a minimum of 100 gallons of potable water will be injected into each injection well to provide a means of “hydraulically pushing” the chemox solution into the subsurface formation. In addition, the groundwater monitoring wells will be sampled for sodium to check on the distribution/migration of the oxidant.

- Task 3 – Decommission Former Remediation System (23 AS Wells, 9 SVE Wells and Remediation Shed) and 3 MWs

The purpose of this task is to decommission the former on-site remediation system that consisted of air sparge (AS) wells and soil vapor extraction (SVE) wells. The layout of the former on-site AS/SVE remediation system is shown on Figure 3. The proposed scope of work for this task will include the removal/decommissioning of 23 AS wells and 9 SVE wells. The underground piping system that was used for the injection of air into the AS wells and extraction of soil vapor from the SVE wells will be filled with grout.

In addition, the equipment used for the former remediation system located in the remediation shed will also be decommissioned, i.e., equipment will be removed and salvaged and/or disposed of as appropriate.

Also, 3 existing groundwater monitoring wells shown on Figure 2 will be decommissioned as part of this scope of work. The wells proposed for decommissioning include the following: MW-7, MW-8 and MW-9. These wells are no longer used for the assessment of treatment/cleanup on this site.

A detailed work plan for the implementation of the above tasks will be prepared by Stantec during the first quarter of 2022. The work plan will be submitted to the ADEC for approval prior to the execution of work on this task.

The Corrective Action Work Plan for the year 2022 will be implemented by Stantec on behalf of Speedway. Groundwater monitoring will be conducted to track migration and trends of contaminants that are present at the site. All sampling activities will be completed in accordance with ADEC’s *Underground Storage Tanks Procedures Manual– Standard Sampling Procedures* (March 22, 2017). The methods that will be used for conducting a monitoring event, unless otherwise noted in the monitoring report, will include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established on-site during a vertical control survey that will be completed by Stantec on an annual basis. The survey will be performed during the summer after the seasonal frost layer thaws.
- The monitoring wells will be purged of a minimum of three well bore volumes prior to collecting the water samples. A new, disposable, Teflon® bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.
- Water samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.



- Additional water samples will be collected from the monitoring wells after the well has been purged, as described above, and tested in the field for chemical and physical intrinsic parameters listed in the 2022 Work Plan Schedule shown above.

If you have any questions or need additional information concerning this 2022 Corrective Action Work Plan, please contact us at (907) 248-8883.

Regards,

STANTEC CONSULTING SERVICES INC.

A handwritten signature in black ink that appears to read "M. Zidek".

Michael A. Zidek, PMP
Project Manager

A handwritten signature in black ink that appears to read "Robert Gilfilian".

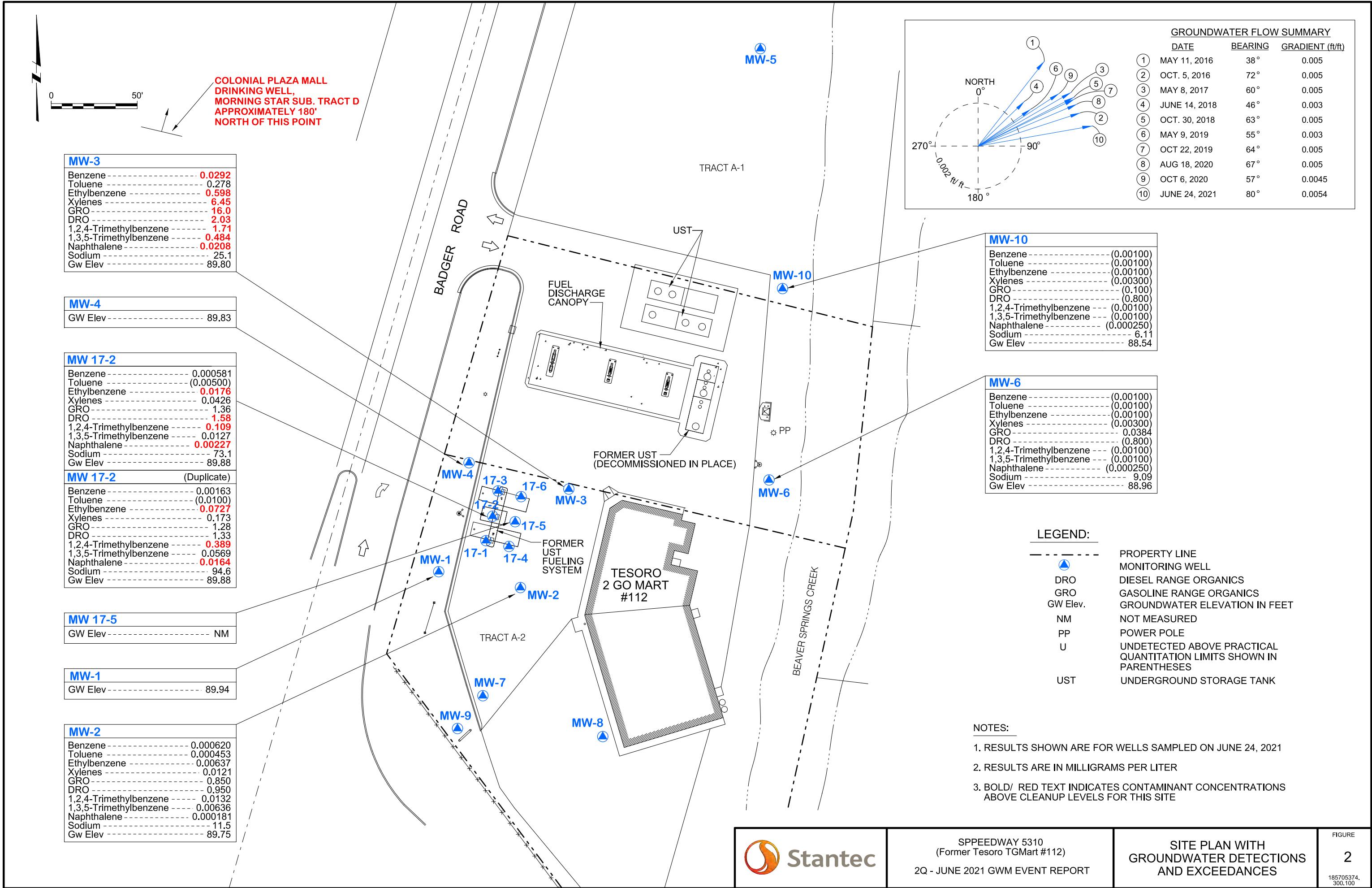
Robert (Bob) Gilfilian, P.E.
Project Technical Lead

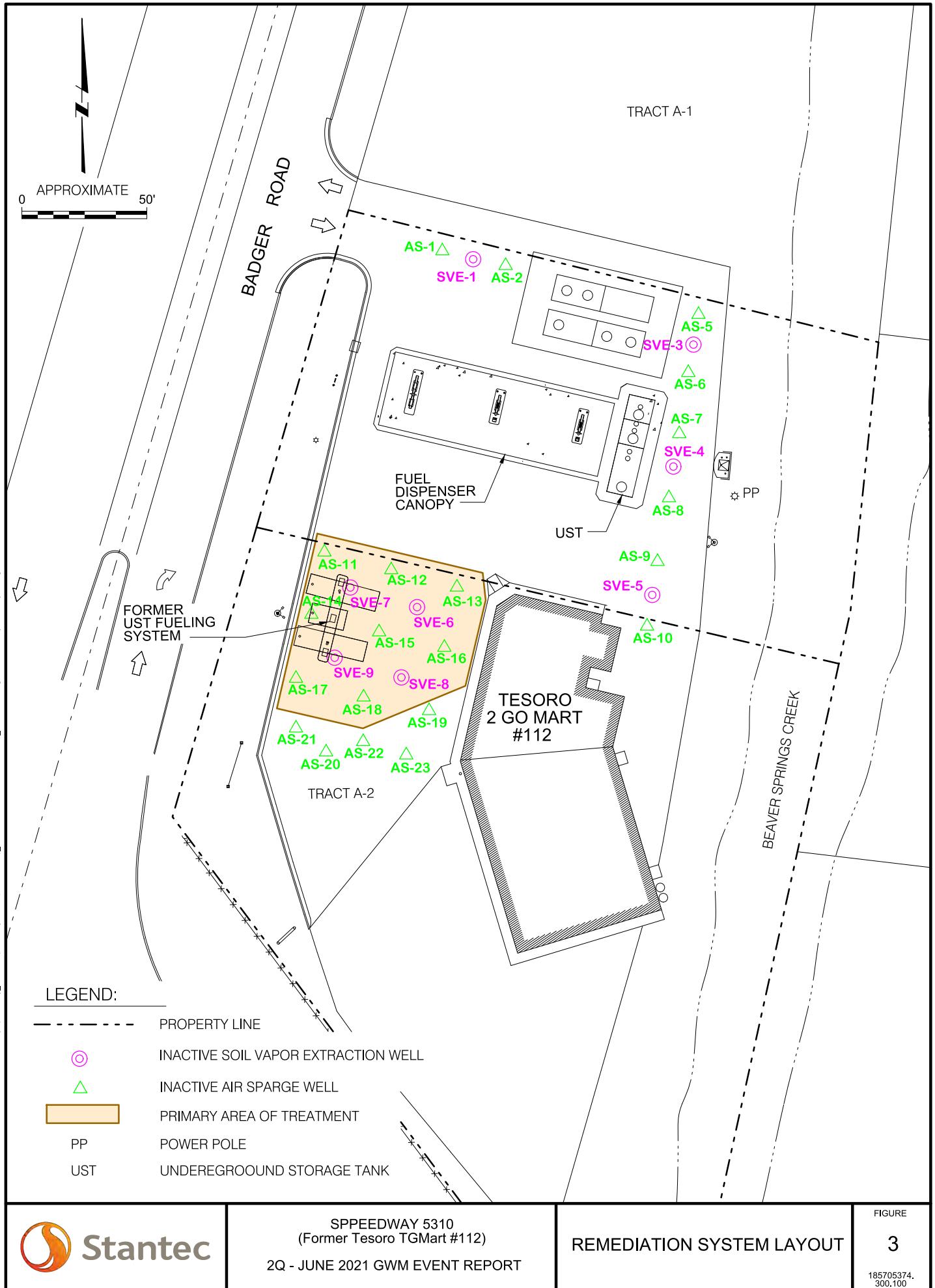
Attachments: Figure 1 – Location and Vicinity Map

Figure 2 - Site Plan

Figure 3 – Remediation System Layout
Analytical Test Results (historical tables)







Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-1

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
30-May-97	0.310	9.00	2.30	10.0	42.0	8.5	NT	88.88
11-Sep-97	0.571	12.60	2.00	9.37	55.0	6.05	NT	89.26
12-Mar-98	0.220	4.90	1.30	6.0	37	5.1	NT	88.92
21-Jul-98	0.143	4.29	0.84	3.92	22	7.59	NT	89.51
12-Oct-98	0.277	4.36	0.458	1.929	16	5.98	NT	87.78
21-Jan-99	0.036	1.08	0.24	1.208	6.8	2.46	NT	88.80
31-Mar-99	0.015	0.297	0.151	0.703	3.3	0.686	NT	88.28
28-Jul-99	0.087	10.80	1.96	9.38	46	3.89	NT	89.14
15-Oct-99	0.174	2.97	0.503	2.334	15	3.74	NT	88.91
10-Mar-00	0.0216	0.718	0.161	0.783	4.7	0.81	NT	88.52
21-Jun-00	0.0220	0.931	0.284	1.321	7.6	1.03	NT	89.32
21-Sep-00	0.0329	0.471	0.160	0.736	5.0	1.61	NT	89.26
25-Jan-01	0.0170	0.322	0.110	0.523	3.69	0.644	NT	88.90
19-Apr-01	0.0123	0.097	0.046	0.221	1.48	0.920	NT	88.87
24-Jul-01	0.0119	0.209	0.104	0.409	2.07	0.628	NT	89.25
28-Jan-02	0.1200	2.070	0.604	2.841	10.8	0.778	NT	89.16
30-Apr-02	5.020	9.480	0.284	3.470	32.2	2.1	NT	89.65
30-Sep-02	0.659	0.209	0.0551	0.736	3.87	1.11	NT	89.72
12-May-03	0.538	3.14	0.814	20.42	44.5	4.84	NT	89.70
09-Oct-03	0.00437	0.00571	0.00189	0.0998	0.697	U (0.32)	NT	389.08
21-Apr-04	U (0.0005)	0.000709	U (0.0005)	0.00984	U (0.05)	U (0.5)	NT	388.75
21-Oct-04	0.00544	0.00284	0.00585	1.46	3.52	2.41	NT	388.32
19-May-05	0.000943	0.00248	0.00272	0.0211	0.0709	0.48	NT	389.26
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.413)	NT	388.45
29-Apr-08	U (0.0005)	0.00088	U (0.0005)	U (0.0015)	U (0.05)	0.862	NT	388.52
12-May-09	U (0.0005)	0.00427	0.00077	0.00586	U (0.05)	1.77	NT	389.20
15-Jun-10	0.00134	0.0297	0.0357	0.249	0.849	U (0.420)	NT	389.00
24-May-11	U (0.0005)	0.00056	0.00479	0.0377	0.0857	0.652	NT	389.11
22-May-12	0.000701	0.00284	0.0765	0.407	1.41	U (0.410)	NT	388.89
21-May-13	0.000845	U (0.0005)	0.125	0.455	1.21	0.587	NT	389.20
06-May-14	U (0.0005)	U (0.0005)	0.0021	0.011	U (0.05)	0.64	NT	389.34
26-May-15	U (0.001)	0.0044	0.0045	0.031	0.21	2.3	NT	389.72
11-May-16	0.00055	0.0026	0.0053	0.029	U (0.1)	U (0.40)	NT	389.18
08-May-17	U (0.002)	U (0.002)	0.034	0.285	U (10)	1.5	NT	389.46
14-Jun-18	U (0.003)	0.0021	0.0086	0.071	0.028	0.43	NT	389.56
09-May-19	U (0.003)	U (0.002)	U (0.003)	0.0034	U (0.25)	0.42	NT	388.94
06-Oct-20	0.000373 J	0.0428	0.00419	0.0374	0.153	1.27	33	389.46
13-Oct-21	0.000246 J	0.0883	0.00310	0.0332	0.315	1.33	34.3	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Dates Well was not tested have been removed from this table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
30-May-97	92	64	7.1	33	170	8.2	NT	88.86
12-Mar-98	2.8	44	13	62	420	21	NT	88.90
19-Apr-01	2.93	52.9	9.9	44.5	216	27.4	NT	88.85
24-Jul-01	1.95	30.5	5.3	33.9	136	18.5	NT	89.24
28-Jan-02	1.23	33.4	7.38	39.8	156	10.5	NT	89.14
30-Apr-02	0.116	10.2	2.60	17.43	51.4	6.9	NT	89.66
30-Sep-02	0.656	17.9	2.92	26.61	118	6.93	NT	89.29
12-May-03	0.569	19.7	4.15	25.43	90.8	5.68	NT	89.74
09-Oct-03	0.25	6.21	2.88	14.2	64.9	U (0.32)	NT	389.00
21-Apr-04	U (0.005)	0.116	0.114	1.21	5.42	7	NT	388.73
21-Oct-04	0.00518	0.0824	0.109	0.699	3.2	1.74	NT	388.03
19-May-05	0.00681	0.513	0.376	1.61	7.88	5.49	NT	389.21
26-Sep-05	0.0125	0.58	0.422	1.78	9.6	3.15	NT	388.93
15-May-06	0.00058	0.0273	0.0533	0.223	1.5	1.87	NT	388.80
07-Nov-06	0.0102	1.11	0.906	3.24	17	1.35	NT	388.64
15-May-07	0.00279	0.0199	0.0356	0.173	1.99	1.9	NT	388.15
16-Oct-07	0.0032	0.173	0.412	1.03	7.61	1.55	NT	388.15
29-Apr-08	U (0.0005)	U (0.0005)	0.0043	0.0131	0.453	2.09	NT	388.82
01-Oct-08	0.00114	0.0194	0.228	0.739	3.12	1.38	NT	389.24
12-May-09	0.00385	0.0114	0.308	0.537	4.0	8.79	NT	389.14
26-Oct-09	0.00138	0.0108	0.717	1.48	4.25	0.738	NT	388.76
15-Jun-10	0.00143	0.00135	0.0205	0.0729	1.32	0.510	NT	388.99
14-Oct-10	0.00192	0.0136	0.127	0.700	4.45	1.49	NT	388.66
24-May-11	0.00232	0.0313	0.798	1.320	6.24	3.04	NT	388.96
26-Oct-11	U (0.010)	U (0.010)	0.345	1.110	6.53	0.744	NT	388.59
22-May-12	0.00566	0.00275	0.179	0.503	5.17	NR	NT	388.88
24-Jul-12	NT	NT	NT	NT	NT	U (0.410)	NT	NM
11-Oct-12	0.000750	0.0197	0.00707	0.0614	0.687	0.655	NT	389.13
21-May-13	0.001730	0.000638	0.0190	0.0325	0.388	U (0.397)	NT	389.20
25-Sep-13	0.001300	0.00104	0.269	0.481	2.61	0.573	NT	389.27
06-May-14	0.003800	U (0.0005)	0.150	0.210	1.80	0.670	NT	389.28
17-Sep-14	0.000720	0.00068	0.096	0.150	1.30	U (0.38)	NT	388.88
26-May-15	0.0018	U (0.003)	0.092	0.21	1.6	2.5	NT	389.53
06-Oct-15	0.036	0.0039	0.290	0.640	4.7	0.76	NT	389.86
11-May-16	0.0023	U (0.001)	0.10	0.14	1.2	0.73	NT	389.13
05-Oct-16	U (0.020)	U (0.020)	0.15	0.22	1.7	1.4	NT	389.51
08-May-17	U (0.002)	U (0.002)	0.23	0.639	2.8	0.68	NT	389.42
05-Sep-17	0.0014	U (0.001)	0.041	0.081	1.000	0.9	NT	389.34
14-Jun-18	U (0.003)	U (0.002)	0.077	0.1128	1.1	0.3	NT	389.52
30-Oct-18	U (0.003)	U (0.002)	0.042	0.062	0.69	2.4	NT	389.22
09-May-19	U (0.003)	U (0.002)	0.023	0.051	0.41	0.26	NT	388.88
22-Oct-19	U (0.003)	U (0.002)	0.017	0.029	0.36	0.72	NT	389.44
18-Aug-20	0.00074	0.000886 J	0.00728	0.0156	0.203	0.632	NT	389.8
06-Oct-20	0.00121	0.000531 J	0.0104	0.0245	0.277	0.38 J	12.3	389.4
24-Jun-21	0.00062 J	0.000453 J	0.00673	0.0121	0.85	0.95	11.5	389.94
13-Oct-21	0.000702 J	U (0.001)	0.00768	0.0130	0.210	1.49	23.8	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Dates Well was not tested have been removed from this table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-3

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
30-May-97	23	69	12	54	380	54	NT	88.79
30-Sep-02	36.6	75.3	3.87	40.3	337	7.38	NT	89.15
12-May-03	5.41	6.45	1.44	7.86	36.6	2.37	NT	89.68
09-Oct-03	13.6	52.3	5.31	49.9	392	U (0.32)	NT	388.92
21-Apr-04	0.617	1.47	0.722	5.69	20.2	1.9	NT	389.34
21-Oct-04	9.38	29.5	3.68	24.3	157	4.96	NT	388.26
19-May-05	0.846	5.38	1.04	8.9	37.3	2.03	NT	389.41
26-Sep-05	0.0496	1.27	0.261	4.24	14.6	3.15	NT	389.12
15-May-06	0.833	5.05	1.63	12.5	44.3	4.44	NT	388.90
07-Nov-06	1.74	26.4	3.74	31.4	174	4.68	NT	388.87
15-May-07	0.0124	0.136	0.0942	0.948	3.93	2.49	NT	388.37
16-Oct-07	0.126	2.3	0.272	17.5	55.3	7.82	NT	387.31
29-Apr-08	0.0063	0.143	0.0197	0.321	1.44	4.71	NT	388.74
01-Oct-08	0.00305	0.0238	0.0572	0.913	2.4	3.2	NT	389.36
12-May-09	0.056	0.833	0.624	5.7	17.2	5.95	NT	389.26
26-Oct-09	0.0903	2.25	0.935	13.6	51.5	3.41	NT	388.70
15-Jun-10	0.0428	0.377	0.449	4.2	12.8	2.86	NT	388.90
14-Oct-10	0.113	9.24	2.48	25.6	137	7.56	NT	388.28
24-May-11	0.205	2.53	1.31	20.9	62.4	7.72	NT	388.85
26-Oct-11	0.104	2.09	1.39	20.7	47.0	12.0	NT	388.56
22-May-12	0.131	1.99	0.751	12.9	41.3	5.22	NT	388.82
11-Oct-12	0.0102	0.373	0.271	3.83	23.2	1.35	NT	389.05
21-May-13	1.50	11.2	2.39	15.9	70.0	20.3	NT	389.13
25-Sep-13	0.102	4.01	1.93	23.9	47.9	7.15	NT	389.18
06-May-14	0.037	0.470	0.420	3.8	12.0	4.70	NT	389.10
17-Sep-14	0.047	1.5	1.200	14.0	26.0	2.70	NT	388.75
26-May-15	0.057	2.0	1.6	13.0	79.0	4.6	NT	389.50
06-Oct-15	0.10	2.1	1.5	16.0	57.0	2.2	NT	389.77
11-May-16	0.00093	0.024	0.034	0.34	1.1	1.6	NT	389.07
05-Oct-16	0.054	0.61	0.92	7.9	21	2.5	NT	389.44
08-May-17	0.021	0.32	0.63	6.6	19	4.4	NT	389.37
05-Sep-17	0.040	0.750	1.000	12.000	30.000	2.000	NT	389.25
14-Jun-18	0.027	0.67	1.1	11.6	U (25)	2.8	NT	389.44
30-Oct-18	0.036	0.37	1.2	12	39	5.7	NT	389.14
10-May-19	0.029	0.200	0.380	4.02	10	0.66	NT	388.84
22-Oct-19	0.028	0.150	0.750	5.5	17	3.7 H	NT	389.42
18-Aug-20	0.0244	0.194	0.637	6.86	12.6	2.84	28.8	389.75
06-Oct-20	0.0446	0.187	0.473	4.59	10.7	3.64	23.5	389.35
24-Jun-21	0.0292	0.278	0.598	6.45	16	2.03	25.1	389.80
13-Oct-21	0.0186 J	0.0856	0.248	1.80	7.35	2.16	31.7	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Dates Well was not tested have been removed from this table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-4

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
30-May-97	0.85	0.71	0.160	0.64	3.8	0.55	NT	88.79
11-Sep-97	8.41	14.5	1.150	5.57	64	1.71	NT	89.2
12-Mar-98	2.30	3.3	0.420	1.80	15	0.68	NT	88.84
21-Jul-98	3.71	3.69	0.485	2.09	21	0.7	NT	89.41
12-Oct-98	1.95	1.99	0.360	1.58	12	1.29	NT	88.73
21-Jan-99	0.94	0.483	0.127	0.579	4.3	0.7	NT	88.75
28-Jul-99	3.48	5.6	0.390	1.86	21	2.65	NT	89.03
15-Oct-99	3.3	5.4	0.422	1.962	26	3.84	NT	88.81
10-Mar-00	1.88	2.52	0.466	2.03	14	1.91	NT	88.45
21-Jun-00	1.44	1.78	0.201	0.923	10	0.660	NT	89.24
21-Sep-00	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	0.838	NT	89.18
25-Jan-01	0.5330	0.602	0.397	1.464	7.27	1.71	NT	88.82
19-Apr-01	U (0.0005)	0.015	0.011	0.066	0.225	U(0.8)	NT	88.78
24-Jul-01	0.001	U (0.002)	U (0.002)	U (0.002)	U (0.09)	0.869	NT	89.17
28-Jan-02	0.2710	0.802	0.631	2.646	9.580	0.708	NT	89.06
30-Apr-02	0.0644	U (0.002)	0.509	0.128	0.623	U (0.495)	NT	89.66
30-Sep-02	0.0157	U (0.002)	0.00523	0.0114	0.0943	U (0.5)	NT	89.22
12-May-03	0.0138	0.00268	0.00595	0.05252	0.167	U (0.3)	NT	89.69
09-Oct-03	0.0311	U (0.0005)	0.00555	0.0657	0.266	2.95	NT	388.92
21-Apr-04	0.00295	U (0.0005)	0.00506	0.113	0.311	U (0.5)	NT	388.65
21-Oct-04	0.0121	U (0.0005)	U (0.0005)	0.00791	0.0646	0.455	NT	387.82
19-May-05	0.00295	U (0.0005)	U (0.0005)	0.0167	0.067	U (0.391)	NT	389.16
15-May-06	0.000635	U (0.0005)	U (0.0005)	0.00919	0.051	U (0.403)	NT	388.63
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	0.782	NT	387.97
29-Apr-08	0.00175	0.00338	0.00097	1.2	1.75	3.78	NT	388.88
12-May-09	U (0.0005)	0.00121	U (0.0005)	0.00189	U (0.05)	U (0.427)	NT	388.98
15-Jun-10	U (0.0005)	U (0.0005)	U (0.0005)	U (0.00976)	U (0.05)	U (0.410)	NT	388.93
24-May-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NT	388.87
22-May-12	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	388.82
21-May-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NT	389.13
06-May-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	NT	389.23
26-May-15	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	0.23	NT	389.50
11-May-16	U (0.0020)	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.40)	NT	389.09
08-May-17	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (1)	0.14	NT	389.41
14-Jun-18	U (0.003)	U (0.002)	U (0.003)	U (0.002)	U (0.000054)	U (0.25)	NT	389.49
09-May-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.51	NT	393.87
06-Oct-20	U (0.001)	U (0.001)	U (0.001)	U (0.003)	0.0144	0.574	13.3	389.38
13-Oct-21	U (0.001)	U (0.001)	U (0.001)	0.000454 J	U (0.100)	2.84	19.0	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Dates Well was not tested have been removed from this table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-5

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
12-Oct-98	0.019	U	U	0.002	0.045	0.110	NT	85.78
21-Jan-99	0.051	U	U	U	0.110	0.127	NT	86.04
31-Mar-99	0.023	U (0.001)	U (0.001)	0.0013	U (0.09)	U (0.297)	NT	86.56
28-Jul-99	0.008	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.300)	NT	88.23
15-Oct-99	0.040	U (0.002)	U (0.002)	U (0.002)	0.11	U (0.297)	NT	88.17
10-Mar-00	0.104	0.003	U (0.002)	0.005	0.22	U (0.297)	NT	88.17
21-Jun-00	0.025	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.297)	NT	88.67
21-Sep-00	0.025	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.303)	NT	88.39
25-Jan-01	0.066	0.003	0.002	0.007	0.19	U (0.300)	NT	88.15
19-Apr-01	U(0.0005)	0.002	0.003	0.003	U (0.09)	U(0.816)	NT	88.06
24-Jul-01	U(0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.495)	NT	88.37
28-Jan-02	0.0029	U (0.002)	U (0.002)	0.002	U (0.09)	U (0.521)	NT	88.28
30-Apr-02	U(0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.500)	NT	88.85
30-Sep-02	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.5)	NT	88.00
12-May-03	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.3)	NT	87.94
09-Oct-03	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.08)	U (0.32)	NT	388.19
21-Apr-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.5)	NT	387.86
21-Oct-04	U (0.0002)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.4)	NT	387.72
19-May-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	388.12
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	387.69
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	0.00154	U (0.05)	0.522	NT	387.46
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.435)	NT	387.92
12-May-09	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.450)	NT	388.21
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Well not tested between May 12, 2009 and October 13, 2021. Dates Well was not tested have been removed from table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-6

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
21-Jun-00	0.0012	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.3)	NT	88.51
21-Sep-00	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.297)	NT	88.47
25-Jan-01	0.00051	0.0026	U (0.002)	0.003	U (0.09)	U (0.3)	NT	88.22
19-Apr-01	U (0.0005)	U (0.002)	U (0.002)	0.003	U (0.09)	U (0.808)	NT	88.17
24-Jul-01	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.495)	NT	88.48
28-Jan-02	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.500)	NT	88.43
30-Apr-02	0.000565	0.00411	0.00203	0.01081	U (0.09)	U (0.500)	NT	88.77
30-Sep-02	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.495)	NT	88.40
12-May-03	U (0.0005)	U (0.002)	U (0.002)	U (0.002)	U (0.09)	U (0.3)	NT	88.13
09-Oct-03	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.08)	U (0.32)	NT	388.30
21-Apr-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.5)	NT	387.99
21-Oct-04	U (0.0002)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.4)	NT	387.21
19-May-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	388.24
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.397)	NT	387.96
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	387.44
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.481)	NT	388.23
12-May-09	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.400)	NT	388.52
15-Jun-10	U (0.0005)	U (0.0005)	U (0.0005)	U (0.00976)	U (0.05)	U (0.431)	NT	NM
24-May-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.385)	NT	388.26
26-Oct-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NT	388.12
22-May-12	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	388.26
11-Oct-12	U (0.0005)	U (0.001)	U (0.001)	U (0.003)	U (0.05)	U (0.403)	NT	388.44
21-May-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	388.48
25-Sep-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.385)	NT	388.63
06-May-14	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.42)	NT	388.59
17-Sep-14	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0005)	U (0.05)	U (0.39)	NT	389.46
26-May-15	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	U (0.21)	NT	389.20
06-Oct-15	U (0.001)	U (0.001)	U (0.001)	U (0.003)	U (0.01)	0.84	NT	388.99
11-May-16	U (0.0020)	U (0.0020)	U (0.0020)	U (0.0020)	U (0.0020)	U (0.0020)	NT	388.41
05-Oct-16	U (0.0020)	U (0.0020)	U (0.0030)	U (0.0020)	U (0.05)	U (0.12)	NT	388.70
08-May-17	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (1)	U (0.11)	NT	388.70
05-Sep-17	U (0.004)	U (0.001)	U (0.001)	U (0.003)	U (0.150)	U (0.290)	NT	388.64
14-Jun-18	U (0.003)	U (0.002)	U (0.003)	U (0.002)	U (025)	U (0.12)	NT	388.77
30-Oct-18	U (0.003)	U (0.002)	U (0.003)	0.0084	U (0.25)	U (0.12)	NT	388.53
09-May-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.12)	NT	388.30
22-Oct-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.12)	NT	388.72
18-Aug-20	U (0.200)	U (0.500)	U (0.500)	U (1.500)	U (0.0500)	J (0.210)	NT	389.05
06-Oct-20	U (0.001)	U (0.001)	U (0.001)	U (0.003)	U (0.0100)	U (0.800)	15	388.69
24-Jun-21	U (0.001)	U (0.001)	U (0.001)	U (0.003)	J 0.0384	U (0.800)	9.09	388.96
13-Oct-21	U (0.001)	U (0.001)	U (0.001)	0.000221	U (0.1)	0.376 J	14.2	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Dates Well was not tested have been removed from this table.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-7

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
09-Oct-03	0.0237	0.00185	0.014	0.0877	2.36	U (0.32)	NT	389.10
21-Apr-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.5)	NT	388.83
21-Oct-04	0.00325	U (0.0005)	0.000934	0.00498	0.298	0.508	NT	388.25
19-May-05	0.000909	U (0.0005)	0.000527	U (0.0015)	0.275	U (0.391)	NT	389.29
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	0.109	0.412	NT	388.70
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.413)	NT	388.88
12-May-09	U (0.0005)	U (0.0005)	0.00063	0.00231	1.16	U (0.442)	NT	389.18
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Well not tested between May 12, 2009 and October 13, 2021.

Monitoring Well MW-8

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
16-Mar-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.37)	NT	388.69
21-Apr-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.5)	NT	388.79
21-Oct-04	0.000298	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.4)	NT	388.30
19-May-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	389.26
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	NT	388.73
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.394)	NT	388.41
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	388.87
12-May-09	U (0.0005)	0.00062	0.00067	0.00199	U (0.05)	U (0.413)	NT	389.22
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Well not tested between May 12, 2009 and October 13, 2021.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-9

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
16-Mar-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.37)	NT	388.27
21-Apr-04	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.5)	NT	388.88
21-Oct-04	U (0.0002)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	U (0.4)	NT	388.22
19-May-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	389.41
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	388.83
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	NT	388.33
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.417)	NT	388.94
12-May-09	U (0.0005)	U (0.0005)	U (0.0005)	0.00182	U (0.05)	U (0.400)	NT	389.33
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Well not tested between May 12, 2009 and October 13, 2021.

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well MW-10

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
17-Sep-04	0.0103	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.385)	NT	NM
21-Oct-04	U (0.0002)	U (0.0005)	U (0.0005)	U (0.001)	U (0.05)	2.19	NT	387.01
19-May-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	387.92
26-Sep-05	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.397)	NT	387.87
15-May-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.391)	NT	387.69
07-Nov-06	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.442)	NT	387.72
15-May-07	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	NT	387.31
16-Oct-07	U (0.0005)	0.000745	U (0.0005)	0.00843	U (0.05)	U (0.427)	NT	387.31
29-Apr-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.424)	NT	387.79
01-Oct-08	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.49)	NT	388.12
12-May-09	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NT	388.04
26-Oct-09	U (0.0005)	U (0.001)	U (0.001)	U (0.003)	U (0.05)	U (0.417)	NT	387.77
15-Jun-10	U (0.0005)	U (0.0005)	U (0.0005)	U (0.00976)	U (0.05)	U (0.417)	NT	387.95
14-Oct-10	U (0.0005)	U (0.001)	U (0.001)	U (0.003)	U (0.05)	U (0.397)	NT	387.82
24-May-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.410)	NT	387.92
26-Oct-11	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.410)	NT	387.79
22-May-12	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.410)	NT	387.87
11-Oct-12	U (0.0005)	U (0.001)	U (0.001)	U (0.003)	U (0.05)	U (0.413)	NT	388.03
21-May-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.410)	NT	388.09
25-Sep-13	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.403)	NT	388.21
06-May-14	U (0.0005)	U (0.0005)	U (0.0005)	0.0027	U (0.05)	U (0.41)	NT	388.19
17-Sep-14	U (0.0005)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	NT	389.21
26-May-15	U (0.001)	U (0.001)	U (0.001)	U (0.001)	U (0.05)	U (0.22)	NT	388.95
06-Oct-15	U (0.001)	U (0.001)	U (0.001)	U (0.003)	U (0.1)	0.41	NT	388.59
11-May-16	U (0.0020)	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.42)	NT	388.07
05-Oct-16	U (0.0020)	U (0.002)	U (0.003)	U (0.002)	U (0.05)	2.6	NT	388.42
08-May-17	U (0.002)	U (0.002)	U (0.003)	0.0056	U (1)	U (0.11)	NT	388.32
05-Sep-17	U (.0004)	U (0.001)	U (0.001)	U (0.003)	U (0.150)	U (0.280)	NT	388.28
14-Jun-18	U (0.003)	U (0.002)	U (0.003)	U (0.002)	U (0.25)	U (0.12)	NT	388.37
30-Oct-18	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.12)	NT	388.19
09-May-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.12)	NT	388.01
22-Oct-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.12)	NT	388.37
18-Aug-20	U (0.0002)	U (0.0005)	U (0.0005)	U (0.0015)	U (0.050)	J (0.283)	NT	388.65
06-Oct-20	U (0.001)	U (0.001)	U (0.001)	U (0.003)	U (0.0100)	U (0.800)	5.51	388.32
24-Jun-21	U (0.001)	U (0.001)	U (0.001)	U (0.003)	U (0.0100)	U (0.800)	6.11	388.54
13-Oct-21	0.00247	U (0.001)	U (0.001)	U (0.003)	U (0.1)	0.403 J	6.56	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Appendix D
Tables of Historical Groundwater Monitoring Data

Monitoring Well 17-2

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
30-Oct-18	U (0.003)	U (0.002)	0.18	0.9	3.9	2.5	NT	NM
10-May-19	U (0.003)	U (0.002)	0.0051	0.012	U (0.25)	0.91	NT	NM
22-Oct-19	U (0.003)	U (0.002)	0.210	0.790	3.5	1.4 H	NT	NM
18-Aug-20	0.0017 J	0.00186 J	0.084	0.320	1.76	1.96	41.6	389.83
06-Oct-20	0.00132 J	U (0.001)	0.1130	0.591	2.08	2.43	75.8	389.41
24-Jun-21	0.00163 J	U (0.01)	0.0727	0.173	1.36	1.58	94.6	389.88
13-Oct-21	0.00125 J	0.00253 J	0.0506	0.197	1.51	1.77	157	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Monitoring Well 17-5

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	Sodium (mg/L)	GW Elev (feet)
14-Jun-18	0.025	0.52	0.064	0.548	1.7	0.17	NT	NM
30-Oct-18	0.055	0.21	0.15	0.505	3.7	0.26	NT	NM
09-May-19	0.0032	0.0026	0.016	0.048	0.31	0.92	NT	NM
22-Oct-19	0.022	0.360	0.230	0.721	3.7	0.47 H	NT	NM
18-Aug-20	0.0308	0.386	0.151	0.896	2.68	0.825	12.4	389.82
06-Oct-20	0.0314	0.144	0.158	0.401	1.68	J 0.569	14.1	389.43
24-Jun-21	NT	NT	NT	NT	NT	NT	NM	NM
13-Oct-21	0.0387	0.265	0.140	0.469	2.18	0.800 J	26.0	
GCLs	0.0046	1.1	0.015	0.19	2.2	1.5	NA	NA

Monitoring Well 17-2 Supplemental

Date	1,2,4-TMB (mg/L)	1,3,5-TMB (mg/L)	Naphthalene (mg/L)
19-Jul-17	NT	NT	U(0.039)
	NT	NT	NT
10-May-19	NT	NT	U(0.00011)
18-Aug-20	0.457	0.088	0.00805
06-Oct-20	NT	NT	0.00614
24-Jun-21	0.389	0.0569	0.0164 B,J
13-Oct-21	0.315	0.0692	0.00493
GCLs	0.056	0.06	0.0017

Monitoring Well 17-5 Supplemental

Date	1,2,4-TMB (mg/L)	1,3,5-TMB (mg/L)	Naphthalene (mg/L)
19-Jul-17	0.86	NT	0.027
14-Jun-18	0.044	0.063	0.0011
10-May-19	NT	NT	0.00014
18-Aug-20	0.19	0.117	0.00729
06-Oct-20	NT	NT	0.00475
24-Jun-21	NT	NT	NT
13-Oct-21	0.186	0.0964	0.00210
GCLs	0.056	0.06	0.0017

Appendix D

Tables of Historical Groundwater Monitoring Data

Key:

DRO - diesel range organics

GCL - ground water cleanup levels

GRO - gasoline range organics

GW Elev - ground water elevation

J - The identification of the analyte is acceptable; the reported value is an estimate.

H - Sample was prepped or analyzed beyond the specified holding time

mg/L - milligrams per liter

NA - not applicable

NM - not measured

NR - Reported as an unreliable result by the laboratory.

NT - not tested

U - Undetected above practical quantitation limits.

Analytical data for the June 2010 Monitoring Event may have an associated low bias for some samples.

See ADEC laboratory QC checklist for impacted analytes.

Bold, shade indicates concentration exceeds the GCL.