Pfizer Inc.
100 Route 206 North, MS LLA-401
Peapack, NJ 07977
Tel: 908-901-8630

Via e-mail

November 18, 2015

David N. Cuevas-Miranda, Ph.D.
Geologist/Marine Scientist
Senior RCRA Corrective Action Project Manager
US EPA-Region 2
Caribbean Environmental Protection Division
City View Plaza II, Suite 7000
Guaynabo, Puerto Rico 00968

RE: Pfizer Pharmaceuticals, LLC
Carolina Facility Remedial Action Progress Report
65th Infantry Avenue, Km. 9.7
Carolina, Puerto Rico

Dear Mr. Cuevas:

On behalf of Pfizer Pharmaceuticals, LLC (Pfizer), please find attached a progress prepared by Golder Associates Inc, for remedial activities conducted at the Pfizer Carolina property. Our initial field tests were very helpful and successful with either total or near total degradation of Tetrachloroethylene (TCE) after making some adjustments to our amendment.

As outlined in the progress report, we plan on expanding our injection/treatment configuration in November, followed by full-scale application of amendments.

As always, please don't hesitate to contact me at 908-901-8630 should you have any questions or need additional information.

Sincerely,

William G. Gierke, P.G., Senior Manager
Pfizer Inc.

cc. L. Vélez, EQB
Golder Associates Inc.

TECHNICAL MEMORANDUM

Date: November 17, 2015 **Project No.:** 103-82746.B

To: William Gierke – Pfizer Inc.

From: Kirk A. Blevins, CHMM

cc: Robert J. Illes, Jeff Paul

RE: **PROGRESS REPORT FOR REMEDIAL ACTIVITIES AT THE FORMER PFIZER PHARMACEUTICAL FACILITY IN CAROLINA, PUERTO RICO**

Golder Associates Inc. has prepared this Technical Memorandum to summarize the remedial activities at the former Pfizer facility in Carolina, Puerto Rico (the site). A Remedial Action Plan was submitted to the US Environmental Protection Agency in July 2014 and implementation began immediately thereafter. The following summarizes the actions completed from July 2014 through September 2015.

WELL INSTALLATIONS

- July 2014 - Installed 14 injection wells (INJ-1 through INJ-14) and three monitoring wells (MW-16S through MW-18S) throughout the treatment/monitoring zone.
- June 2015 - Installed one injection well (INJ-15) and three monitoring wells (MW-19S through MW-21S) throughout the treatment/monitoring zone.

AMENDMENT INJECTIONS

- February 2015 - Injected initial amendment (approximately 20 kilograms (kg) sodium lactate per 1,000 gallons of water, per injection well) into treatment areas A, B, and C
- July 2015 – Injected second amendment (approximately 20 kg sodium lactate and 11 kg EOS Pro per 1,000 gallons of water, per injection well) in to treatment areas A and C.
- September/October 2015 – Injected amendment (approximately 36.7 kg of EOS Pro per 1,000 gallons of water, per injection well) into treatment areas B and C.

PERFORMANCE MONITORING

Baseline sampling and performance monitoring after each injection event is detailed below with results summarized in Figure 1 and Table 1 (attached).

- February 2015 – Conducted baseline sampling of wells prior to initial injection event.
- March/April 2015 – Performance monitoring after first injection event (Areas A, B, and C).
- July/August 2015 – Performance monitoring after second injection event (Areas A and C).

NEXT ACTIONS TENTATIVELY PLANNED

- November 30, 2015 – Begin installation of additional injection wells (up to 16) and monitoring wells (up to 4) for full-scale implementation (see Figure 2 for full-scale design configuration).

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- November 30, 2015 – Inject amendment (EOS Pro) in Area A.
- January 2016 – Conduct baseline sampling of new monitoring wells and select injection wells.
- January/February 2016 – Implement full-scale remedial actions throughout the treatment zone (Areas A, B, and C) with injections of amendment (EOS Pro).
- First quarter to second quarter 2016 – Conduct groundwater sampling to monitor the performance of the injection event.

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Figure 2 Full-Scale Injection and Monitoring Well Locations

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TABLE

TABLE 1
GROUNDWATER ANALYTICAL SUMMARY
CONSTITUENTS OF CONCERN

Pfizer, Carolina Facility, Puerto Rico

Sample			Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethene (Total)*	Vinyl Chloride	Total Organic Carbon	Methane	Ethane	Ethene
Location	Screen Interval (feet bgs)	Date										
MCL			*5*	*5*	*7*	*70*	*70*	*2*	*NA*	*NA*	*NA*	*NA*
MW-01S	58.4 - 68.4	02/02/2011	**0.5**	**2.8**	**1.2**	0.50 U	0.50 U	0.50 U	NM	NM	NM	NM
		10/17/2011	**0.64 I**	**3.2**	**0.80 I**	0.50 U	0.50 U	0.50 U	NM	NM	NM	NM
		09/12/2012	**0.72 I**	**2.3**	0.50 U	0.50 U	0.50 U	0.50 U	**1.2**	**0.12 I**	0.20 U	**0.037 I**
MW-02S	29.9 - 39.9	02/02/2011	**1.4**	**1,630**	**9.9**	**1,490**	**1,500**	**303**	NM	NM	NM	NM
		10/18/2011	**1.6**	**1,830**	**7.9**	**1,780**	**1,790**	**253**	NM	NM	NM	NM
		09/11/2012	**1.4**	**1,090**	**7.7**	**1,200**	**1,200**	**222**	**1.7**	**410**	**5.3**	**4.3**
		04/17/2013	**1.5**	**776**	**9.4**	**1,280**	**1,290**	**130**	NM	NM	NM	NM
		12/04/2013	**1.3**	**1,330**	**7.3**	**1,390**	**1,400**	**329**	**1.9**	**600**	**0.87**	**1.7**
		02/03/2015	**1.6**	**1,550**	**8.3**	**1,710**	**1,730**	**248**	**1.8**	NM	NM	NM
		03/16/2015	**1.3**	**1,230**	**7.4**	**1,370**	**1,380**	**186**	**1.9**	**200**	**5.0**	**2.8**
		04/21/2015	**1.6**	**1,260**	**9.3**	**1,440**	**1,450**	**157**	**1.9**	**150**	**3.9**	**2.3**
		07/17/2015	NM	NM	NM	NM	NM	NM	**2.87**	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	**1.51**	NM	NM	NM
		08/07/2015	**1.4**	**1,560**	**8.3**	**1,640**	**1,660**	**257**	**1.90**	NM	NM	NM
MW-03S	29 - 39	02/02/2011	**85.4**	**20**	**6.9**	**32.2**	**32.6**	**4.3**	NM	NM	NM	NM
		10/18/2011	**133**	**34.3**	**7.5**	**46.9**	**47.3**	**4.1**	NM	NM	NM	NM
		09/12/2012	**110**	**30.0**	**7.5**	**46.6**	**46.8**	**4.2**	**1.4**	**1.0**	**0.19 I**	**0.14 I**
		04/17/2013	**68**	**37.9**	**9.8**	**54.4**	**54.9**	**3.5**	NM	NM	NM	NM
		12/04/2013	**132**	**36.8**	**7.2**	**45.9**	**46.2**	**6.3**	**1.5**	**0.46**	**0.16 I**	**0.045 I**
MW-04S	12.5 - 22.5	02/02/2011	0.50 U	0.50 U	**0.5**	0.50 U	0.50 U	0.50 U	NM	NM	NM	NM
		10/17/2011	0.50 U	0.50 U	**0.58 I**	0.50 U	0.50 U	0.50 U	NM	NM	NM	NM
		09/12/2012	0.50 U	0.50 U	**0.54 I**	0.50 U	0.50 U	0.50 U	0.50 U	**9.1**	**0.010 I**	**0.027 I**
MW-05S	22.7 - 32.7	02/02/2011	0.50 U	**1.8**	**1.7**	**0.5**	**0.5**	0.50 U	NM	NM	NM	NM
		10/17/2011	0.50 U	**2.4**	**0.74 I**	**0.59 I**	**0.59 I**	0.50 U	NM	NM	NM	NM
		09/12/2012	0.50 U	**2.1**	**1.1**	**0.74 I**	**0.74 I**	0.50 U	**0.72 I**	**2.6**	**0.070 I**	**0.064 I**
		12/05/2013	0.50 U	**3.7**	**1.2**	**0.79 I**	**0.79 I**	0.50 U	**1.1**	**1.9**	0.018 U	**0.022 I**
MW-06S	30 - 40	02/02/2011	0.50 U	**19**	**7.4**	**4.1**	**4.1**	0.50 U	NM	NM	NM	NM
		10/18/2011	0.50 U	**17.9**	**5.9**	**4.4**	**4.4**	0.50 U	NM	NM	NM	NM
		09/11/2012	0.50 U	**17.8**	**5.0**	**3.5**	**3.5**	0.50 U	**0.91 I**	**3.0**	**0.017 I**	**0.052 I**
		12/05/2013	0.50 U	**26.0**	**6.3**	**4.4**	**4.5**	0.50 U	**0.76 I**	**3.3**	0.018 U	**0.030 I**
MW-07S	28 - 38	10/17/2011	**2.2**	**538**	**2.1**	**324**	**327**	**41.6**	NM	NM	NM	NM
		09/11/2012	**2.1**	**467**	**2.7**	**309**	**312**	**77.2**	**1.8**	0.20 U	0.20 U	0.20 U
		04/17/2013	**3.0**	**375**	**4.1**	**403**	**408**	**70.8**	NM	NM	NM	NM
		12/03/2013	**1.9**	**703**	**3.5**	**494**	**497**	**99.2**	**2.3**	**120**	**2.0**	**0.63**
		02/03/2015	**1.7**	**666**	**2.4**	**509**	**519**	**68.7**	**2.1**	NM	NM	NM
		03/17/2015	**1.5**	**645**	**3.6**	**547**	**552**	**92.5**	**2.0**	**72**	**1.8**	**0.62**
		04/22/2015	**2.0**	**744**	**4.5**	**636**	**643**	**100**	**2.0**	**75**	**2.2**	**0.69**
		07/17/2015	NM	NM	NM	NM	NM	NM	**57.6**	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	**10.5**	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	**3.61**	NM	NM	NM
		07/31/2015	1.2 U	**68.9**	**6.2**	**1,536**	**1,546**	1.2 U	NM	NM	NM	NM
		08/11/2015	2.5 U	**315**	**4.7 I**	**1,210**	**1,220**	**116**	**2.4**	NM	NM	NM
MW-08S	30 - 40	10/17/2011	**25.9**	**12.1**	**2.3**	**10**	**10**	**2.1**	NM	NM	NM	NM
		09/12/2012	**31.4**	**11.3**	**2.4**	**10.7**	**10.7**	0.50 U	**1.2**	**0.35**	**0.059 I**	**0.086 I**
		12/05/2013	**10.9**	**4.3**	**0.85 I**	**2.9**	**2.9**	0.50 U	**1.2**	**0.48**	0.018 U	**0.035 I**
MW-09S	11.4 - 21.4	10/17/2011	0.50 U	**14.3**	**9.2**	**0.99 I**	**0.99 I**	0.50 U	NM	NM	NM	NM
		09/11/2012	0.50 U	**13.7**	**8.5**	**0.76 I**	**0.76 I**	0.50 U	1.0 I	**0.68**	0.20 U	**0.050 I**
		12/04/2013	0.50 U	**13.7**	**8.1**	**0.85 I**	**0.85 I**	0.50 U	0.94 I	**1.3**	0.018 U	**0.026 I**

TABLE 1
GROUNDWATER ANALYTICAL SUMMARY
CONSTITUENTS OF CONCERN

Pfizer, Carolina Facility, Puerto Rico

Sample			Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethene (Total)*	Vinyl Chloride	Total Organic Carbon	Methane	Ethane	Ethene
Location	Screen Interval (feet bgs)	Date										
MW-10S	30 - 40	12/03/2013	29.7	11.6	2.8	10.8	10.8	1.3	1.8	1.0	0.37	0.032 I
MW-11S	30 - 40	12/03/2013	0.50 U	62.6	0.50 U	8.1	8.8	1.3	2.3	8.6	2.0	0.84
MW-12S	17.5 - 27.5	12/02/2013	28.3	109	2.9	44.0	44.6	1.6	1.2	4.2	0.49	0.53
MW-13S	30 - 40	12/02/2013	3.5	3,510	12.1	2,610	2,640	429	2.5	550	14	13
		12/2/2013[1]	3.2	2,770	13.9	1,890	1,920	324	NM	540	14	14
		03/16/2015	0.85 I	1,310	5.3	1,630	1,640	134	4.9	100	2.0	3.2
		04/20/2015	1.3	1,390	14.0	3,100	3,140	274	4.6	210	5.3	10
MW-14S	30 - 40	12/04/2013	0.50 U	1.2	0.50 U	0.50 U	0.50 U	0.50 U	1.8	12.0	5.2	0.13 I
MW-15S	22.5 - 32.5	12/02/2013	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.3	52	11	2.9
MW-16S	38 - 48	02/03/2015	3.9	4,000	20.3	4,210	4,300	547	2.5	1,000	24	14
		03/16/2015	3.5	2,370	16.3	3,180	3,210	397	2.6	800	13	8.4
		04/21/2015	3.4	2,630	20.0	2,980	3,010	383	2.5	740	15	8.3
		07/17/2015	NM	NM	NM	NM	NM	NM	3	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	2	NM	NM	NM
		08/07/2015	2.8	3,560	18.0	3,940	4,100	709	2.9	NM	NM	NM
MW-17S	40 - 50	02/04/2015	1.4	5,930	62.1	9,380	9,530	658	4.2	1,200	41	10
		03/16/2015	0.50 U	826	59.4	10,200	10,300	1,080	7.7	540	18	5.8
		04/20/2015	0.73 I	2,020	67.7	9,080	9,220	810	4.3	920	38	11
		07/08/2015	NM	NM	NM	NM	NM	NM	1,629	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	1,652	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	1,479	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	1,522	NM	NM	NM
		08/07/2015	0.50 U	0.83 I	0.99 I	4.9	85	1,830	436	NM	NM	NM
		09/11/2015	6.0 U	6.0 U	6.0 U	409	409	26.0	451	NM	NM	NM
MW-18S	50 - 60	02/04/2015	0.68 I	3,190	36.6	5,440	5,530	354	3.2	1,200	21	5
		03/16/2015	0.50 U	220	42.6	8,160	8,250	414	4.3	960	16	3.9
		04/20/2015	0.50 U	917	45.2	5,340	5,430	449	4.4	790	16	5.0
		07/08/2015	NM	NM	NM	NM	NM	NM	1,290	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	1,269	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	892	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	649	NM	NM	NM
		08/07/2015	0.50 U	0.50 U	0.50 U	2.3	61.9	1,820	424	NM	NM	NM
		09/11/2015	12.0 U	12.0 U	12.0 U	54.8	86.9	114	556	NM	NM	NM
MW-19S	40 - 50	07/07/2015	1.2 U	556	12.8	4,502	4,543	317	3.43	NM	NM	NM
		07/10/2015	NM	NM	NM	NM	NM	NM	286	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	225	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	149	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	91.9	NM	NM	NM
		08/07/2015	0.50 U	8.8	0.50 U	166	212	486	29.9	NM	NM	NM
		09/11/2015	12.0 U	12.0 U	12.0 U	12.0 U	28.4	12.0 U	3.74	NM	NM	NM
MW-20S	40 - 50	07/07/2015	1.2 U	532	9.00	2,544	2,568	181	1.64	NM	NM	NM
		07/10/2015	NM	NM	NM	NM	NM	NM	216	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	35.7	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	6.36	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	8.55	NM	NM	NM
		08/07/2015	0.50 U	151	4.4	645	670	426	2.30	NM	NM	NM
		09/11/2015	12.0 U	12.0 U	12.0 U	12.0 U	35.6	12.0 U	188	NM	NM	NM

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CONSTITUENTS OF CONCERN

Pfizer, Carolina Facility, Puerto Rico

Sample			Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethene (Total)*	Vinyl Chloride	Total Organic Carbon	Methane	Ethane	Ethene
Location	Screen Interval (feet bgs)	Date										
MW-21S	37 - 47	07/10/2015	1.2 U	1,649	7.0	3,282	3,292	298	2.16	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	131	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	6.47	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	3.10	NM	NM	NM
		07/31/2015	1.2 U	1,511	7.0	1,608	1,621	1.2 U	NM	NM	NM	NM
		08/11/2015	2.5 U	1,970	8.2	1,480	1,490	214	2.4	NM	NM	NM
MW-02D	77.2 - 87.2	02/02/2011	0.50 U	523	4.6	431	439	53.6	NM	NM	NM	NM
		10/18/2011	0.50 U	310	3.3	716	734	32.0	NM	NM	NM	NM
		09/11/2012	0.50 U	205	2.9	379	391	34.2	1.1	430	0.30	1.4
		04/17/2013	0.50U	104	4.3	257	303	20.1	NM	NM	NM	NM
		12/03/2013	0.50 U	347	4.9	653	671	46.0	1.4	350	5.0	3.7
		02/03/2015	0.50 U	341	2.1	481	496	20.5	1.0	NM	NM	NM
		03/16/2015	0.50 U	235	2.1	439	449	17.7	1.1	260	0.23	0.40
		04/21/2015	0.50 U	274	2.7	380	393	18.8	1.1	240	0.23	0.32
MW-03D	69 - 79	02/02/2011	0.50 U	1.9	0.5	1.2	0.50 U	0.50 U	NM	NM	NM	NM
		10/18/2011	0.50 U	2.4	0.57 I	1.7	1.8	0.50 U	NM	NM	NM	NM
		09/12/2012	0.50 U	1.2	0.50 U	1.1	1.2	0.50 U	1.2	9.4	0.030 I	0.15 I
		04/17/2013	0.50U	1.6	0.5	1.5	2.1	0.50U	NM	NM	NM	NM
		12/04/2013	5.4	1.3	0.70 I	1.6	2.2	0.50 U	1.2	7.7	0.048 I	0.36
MW-07D	88 - 98	10/17/2011	0.50 U	12.5	0.50 U	116	134	1.9	NM	NM	NM	NM
		09/11/2012	0.50 U	0.50 U	0.50 U	90.5	109	1.7	1.4	140	0.080 I	0.73
		04/17/2013	0.50 U	7.8	0.50 U	95.4	122	2.3	NM	NM	NM	NM
		12/03/2013	0.50 U	3.1	0.50 U	114	139	2.4	1.4	340	0.051 I	2.1
		02/03/2015	0.50 U	0.50 U	0.50 U	141	182	1.2	1.5	NM	NM	NM
		03/16/2015	0.50 U	0.50 U	0.50 U	155	188	1.4	1.2	590	0.02	1.2
		04/21/2015	0.50 U	3.0	0.50 U	172	215	3.1	1.1	330	0.03	1.0
		07/17/2015	NM	NM	NM	NM	NM	NM	3.28	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	3.83	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	3.39	NM	NM	NM
		08/11/2015	0.50 U	0.59 I	0.50 U	133	163	4.6	1.2	NM	NM	NM
INJ-1	20 - 40 (Open Borehole)	07/17/2015	NM	NM	NM	NM	NM	NM	488	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	452	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	92.6	NM	NM	NM
		08/11/2015	2.5 U	2.5 U	2.5 U	25.5	47.6	543	117	NM	NM	NM
INJ-2	19 - 40 (Open Borehole)	02/03/2015	1.4	1,170	4.2	982	1,020	146	NM	NM	NM	NM
		04/21/2015	1.7	1,250	7.4	1,200	1,210	162	1.9	900	4.6	1.6
		07/17/2015	NM	NM	NM	NM	NM	NM	775	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	703	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	556	NM	NM	NM
		07/31/2015	1.2 U	2.8	3.0	931	936	1.2 U	NM	NM	NM	NM
		08/11/2015	2.5 U	2.5 U	4.3 I	1,470	1,480	91.8	687	NM	NM	NM
INJ-3	19 - 40 (Open Borehole)	04/22/2015	1.8	1,750	9.3	1,480	1,490	183	2.2	590	5.0	1.6
		07/17/2015	NM	NM	NM	NM	NM	NM	5,145	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	739	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	231	NM	NM	NM
		08/11/2015	2.5 U	5.2	10.1	3,540	3,560	206	94.7	NM	NM	NM
INJ-4	40 - 50	07/17/2015	NM	NM	NM	NM	NM	NM	2.90	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	1.64	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	1.37	NM	NM	NM
		08/11/2015	2.5 U	1,290	6.6	1,540	1,580	159	1.5	NM	NM	NM

TABLE 1
GROUNDWATER ANALYTICAL SUMMARY
CONSTITUENTS OF CONCERN

Pfizer, Carolina Facility, Puerto Rico

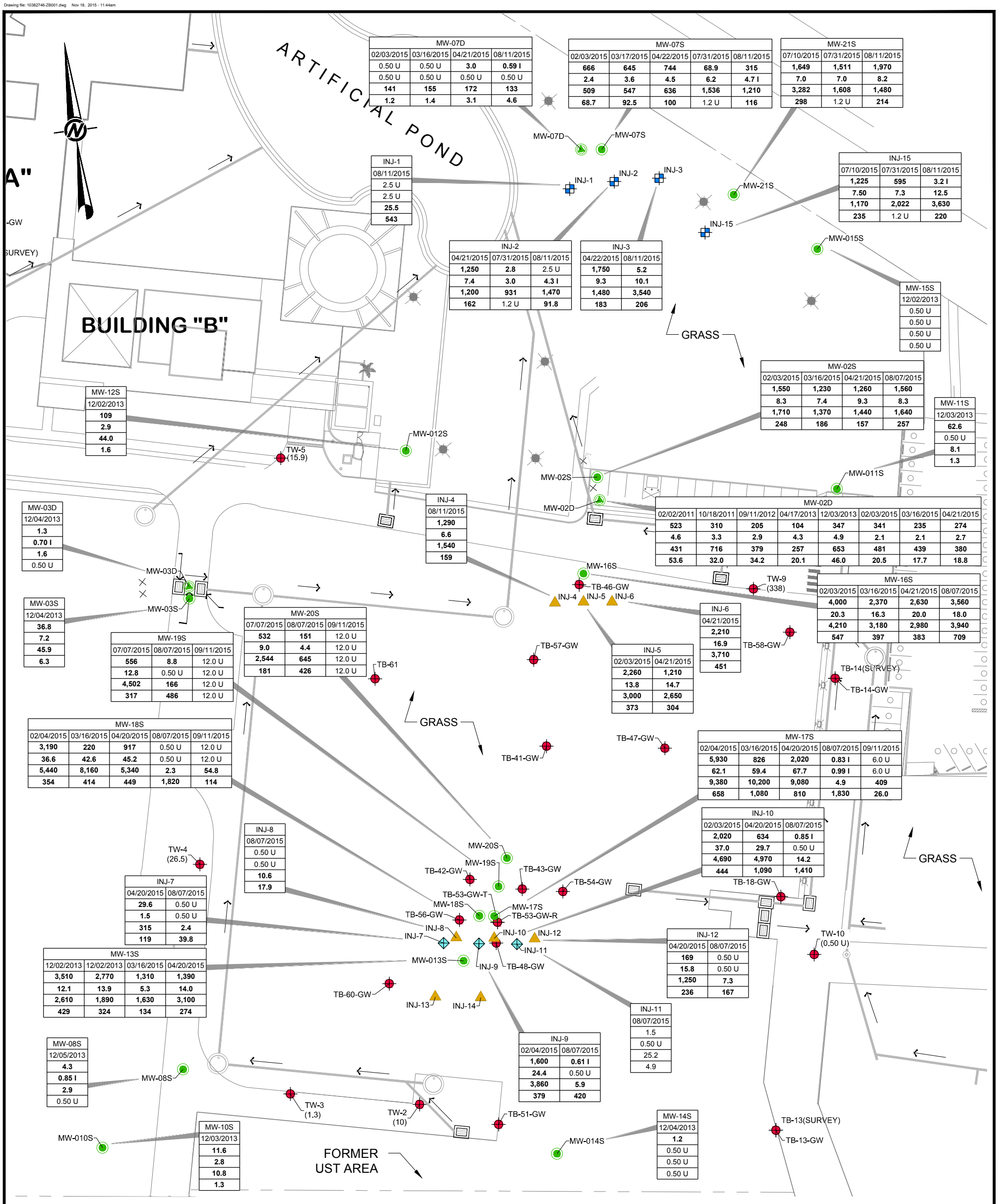
Sample			Tetrachloroethene	Trichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	1,2-Dichloroethene (Total)*	Vinyl Chloride	Total Organic Carbon	Methane	Ethane	Ethene
Location	Screen Interval (feet bgs)	Date										
INJ-5	40 - 50	02/03/2015	**3.1**	**2,260**	**13.8**	**3,000**	**3,050**	**373**	NM	NM	NM	NM
		04/21/2015	**1.7**	**1,210**	**14.7**	**2,650**	**2,690**	**304**	**2.3**	**1,400**	**12**	**6.7**
INJ-6	40 - 50	04/21/2015	3.2	**2,210**	**16.9**	**3,710**	**3,750**	**451**	**3.3**	**650**	**25**	**12**
INJ-7	50 - 60	04/20/2015	0.50 U	**29.6**	**1.5**	**315**	**331**	**119**	**2.5**	**360**	**1.5**	**110**
		07/17/2015	NM	NM	NM	NM	NM	NM	**116**	NM	NM	NM
		08/07/2015	0.50 U	0.50 U	0.50 U	**2.4**	**10.6**	**39.8**	**274**	NM	NM	NM
INJ-8	40 - 50	07/17/2015	NM	NM	NM	NM	NM	NM	**6,110**	NM	NM	NM
		08/07/2015	0.50 U	0.50 U	0.50 U	**10.6**	**19.6**	**17.9**	**522**	NM	NM	NM
INJ-9	50 - 60	02/04/2015	0.50 U	**1,600**	**24.4**	**3,860**	**3,920**	**379**	NM	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	**1,041**	NM	NM	NM
		07/13/2015	NM	NM	NM	NM	NM	NM	**1,031**	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	**470**	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	**297**	NM	NM	NM
		08/07/2015	0.50 U	**0.61 I**	0.50 U	**5.9**	**34.9**	**420**	**344**	NM	NM	NM
		09/11/2015	NM	NM	NM	NM	NM	NM	**226**	NM	NM	NM
INJ-10	40 - 50	02/03/2015	0.50 U	**2,020**	**37.0**	**4,690**	**4,780**	**444**	NM	NM	NM	NM
		04/20/2015	0.50 U	**634**	**29.7**	**4,970**	**5,510**	**1,090**	**4.8**	**820**	**16**	**5.7**
		07/13/2015	NM	NM	NM	NM	NM	NM	**1,654**	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	**591**	NM	NM	NM
		07/24/2015	NM	NM	NM	NM	NM	NM	**1,231**	NM	NM	NM
		08/07/2015	0.50 U	**0.85 I**	0.50 U	**14.2**	**53.3**	**1,410**	**531**	NM	NM	NM
		09/11/2015	NM	NM	NM	NM	NM	NM	**3.57**	NM	NM	NM
INJ-11	50 - 60	07/17/2015	NM	NM	NM	NM	NM	NM	**1,254**	NM	NM	NM
		08/07/2015	0.50 U	1.5	0.50 U	25.2	26.7	4.9	**921**			
INJ-12	40 - 50	04/20/2015	0.50 U	**169**	**15.8**	**1,250**	**1,370**	**236**	**4.2**	**510**	**1.1**	**28**
		07/17/2015	NM	NM	NM	NM	NM	NM	**1,300**	NM	NM	NM
		08/07/2015	0.50 U	0.50 U	0.50 U	**7.3**	**59.6**	**167**	**801**	NM	NM	NM
INJ-15	27 - 37	07/10/2015	1.2 U	**1,225**	**7.50**	**1,170**	**1,180**	**235**	NM	NM	NM	NM
		07/17/2015	NM	NM	NM	NM	NM	NM	**1,403**	NM	NM	NM
		07/21/2015	NM	NM	NM	NM	NM	NM	**734**	NM	NM	NM
		07/28/2015	NM	NM	NM	NM	NM	NM	**223**	NM	NM	NM
		07/31/2015	1.2 U	**595**	**7.3**	**2,022**	**2,030**	1.2 U	NM	NM	NM	NM
		08/11/2015	2.5 U	**3.2 I**	**12.5**	**3,630**	**3,670**	**220**	**70.4**	NM	NM	NM

Notes:
All analytical results reported in micrograms per liter (µg/L); except TOC which is in milligrams per liter (mg/L).
MCL - Federal Maximum Contaminant Level from http://water.epa.gov/drink/contaminants/index.cfm#List as of 10/11/10.
U - Indicates the compound was analyzed for but not detected at a concentration greater than the shown MDL.
I - The reported value is between the laboratory MDL and the laboratory practical quantitation limit (PQL).
MDL - Method Detection Limit
NM - Not Measured
Bold denotes a detection above laboratory method detection limit.
[1]Duplicate sample
Shaded - Concentration is greater than MCL
*Total 1,2-Dichloroethene is for the *cis* and *trans* isomers.
The Federal MCL of 70 µg/l is for the *cis* isomer as it is the more stringent value.

Checked by: MCC
Reviewed by: KAB

FIGURES

Drawing file: 10382746-ZB001.dwg Nov 18, 2015 - 11:44am



MW-07D			
02/03/2015	03/16/2015	04/21/2015	08/11/2015
0.50 U	0.50 U	3.0	0.59 I
0.50 U	0.50 U	0.50 U	0.50 U
141	155	172	133
1.2	1.4	3.1	4.6

MW-07S				
02/03/2015	03/17/2015	04/22/2015	07/31/2015	08/11/2015
666	645	744	68.9	315
2.4	3.6	4.5	6.2	4.7 I
509	547	636	1,536	1,210
68.7	92.5	100	1.2 U	116

MW-21S		
07/10/2015	07/31/2015	08/11/2015
1,649	1,511	1,970
7.0	7.0	8.2
3,282	1,608	1,480
298	1.2 U	214

INJ-1
08/11/2015
2.5 U
2.5 U
25.5
543

INJ-15		
07/10/2015	07/31/2015	08/11/2015
1,225	595	3.2 I
7.50	7.3	12.5
1,170	2,022	3,630
235	1.2 U	220

INJ-2		
04/21/2015	07/31/2015	08/11/2015
1,250	2.8	2.5 U
7.4	3.0	4.3 I
1,200	931	1,470
162	1.2 U	91.8

INJ-3	
04/22/2015	08/11/2015
1,750	5.2
9.3	10.1
1,480	3,540
183	206

MW-15S
12/02/2013
0.50 U
0.50 U
0.50 U
0.50 U

MW-02S			
02/03/2015	03/16/2015	04/21/2015	08/07/2015
1,550	1,230	1,260	1,560
8.3	7.4	9.3	8.3
1,710	1,370	1,440	1,640
248	186	157	257

MW-11S
12/03/2013
62.6
0.50 U
8.1
1.3

MW-12S
12/02/2013
109
2.9
44.0
1.6

MW-02D							
02/02/2011	10/18/2011	09/11/2012	04/17/2013	12/03/2013	02/03/2015	03/16/2015	04/21/2015
523	310	205	104	347	341	235	274
4.6	3.3	2.9	4.3	4.9	2.1	2.1	2.7
431	716	379	257	653	481	439	380
53.6	32.0	34.2	20.1	46.0	20.5	17.7	18.8

MW-03D
12/04/2013
1.3
0.70 I
1.6
0.50 U

INJ-4
08/11/2015
1,290
6.6
1,540
159

MW-16S			
02/03/2015	03/16/2015	04/21/2015	08/07/2015
4,000	2,370	2,630	3,560
20.3	16.3	20.0	18.0
4,210	3,180	2,980	3,940
547	397	383	709

MW-03S
12/04/2013
36.8
7.2
45.9
6.3

MW-20S		
07/07/2015	08/07/2015	09/11/2015
532	151	12.0 U
9.0	4.4	12.0 U
2,544	645	12.0 U
181	426	12.0 U

INJ-6
04/21/2015
2,210
16.9
3,710
451

MW-19S		
07/07/2015	08/07/2015	09/11/2015
556	8.8	12.0 U
12.8	0.50 U	12.0 U
4,502	166	12.0 U
317	486	12.0 U

INJ-5	
02/03/2015	04/21/2015
2,260	1,210
13.8	14.7
3,000	2,650
373	304

MW-18S				
02/04/2015	03/16/2015	04/20/2015	08/07/2015	09/11/2015
3,190	220	917	0.50 U	12.0 U
36.6	42.6	45.2	0.50 U	12.0 U
5,440	8,160	5,340	2.3	54.8
354	414	449	1,820	114

MW-17S				
02/04/2015	03/16/2015	04/20/2015	08/07/2015	09/11/2015
5,930	826	2,020	0.83 I	6.0 U
62.1	59.4	67.7	0.99 I	6.0 U
9,380	10,200	9,080	4.9	409
658	1,080	810	1,830	26.0

INJ-8
08/07/2015
0.50 U
0.50 U
10.6
17.9

INJ-10		
02/03/2015	04/20/2015	08/07/2015
2,020	634	0.85 I
37.0	29.7	0.50 U
4,690	4,970	14.2
444	1,090	1,410

INJ-7	
04/20/2015	08/07/2015
29.6	0.50 U
1.5	0.50 U
315	2.4
119	39.8

INJ-12	
04/20/2015	08/07/2015
169	0.50 U
15.8	0.50 U
1,250	7.3
236	167

MW-13S			
12/02/2013	12/02/2013	03/16/2015	04/20/2015
3,510	2,770	1,310	1,390
12.1	13.9	5.3	14.0
2,610	1,890	1,630	3,100
429	324	134	274

INJ-11
08/07/2015
1.5
0.50 U
25.2
4.9

INJ-9	
02/04/2015	08/07/2015
1,600	0.61 I
24.4	0.50 U
3,860	5.9
379	420

MW-08S
12/05/2013
4.3
0.85 I
2.9
0.50 U

MW-14S
12/04/2013
1.2
0.50 U
0.50 U
0.50 U

MW-10S
12/03/2013
11.6
2.8
10.8
1.3

NOTES

1. ALL SITE BUILDINGS, WITH THE EXCEPTION OF BUILDINGS A, B, AND F, WERE DEMOLISHED IN 2013.
2. TCE = TRICHLOROETHENE.
3. DCE = DICHLOROETENE.
4. VC = VINYL CHLORIDE
5. ug/L = MICROGRAMS PER LITER.
6. U = INDICATES THAT THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE VALUE SHOWN IS THE METHOD DETECTION LIMIT.
7. I = THE REPORTED VALUE IS BETWEEN THE LABORATORY METHOD DETECTION LIMIT AND THE LABORATORY PRACTICAL QUANTITATION LIMIT.
8. TW-2 THROUGH TW-10 RESULTS FROM SEPTEMBER 2010.
9. TB-13-GW, TB-14-GW, AND TB-15-GW RESULTS FROM JANUARY 2011.
10. TB-18-GW RESULTS FROM JUNE 2013.
11. TB-41-GW, TB-42-GW, TB-43-GW, TB-46-GW, TB-47-GW, AND TB-48-GW RESULTS FROM JULY 2013.
12. TB-51-GW, TB-53-GW-T, TB-53-GW-R, TB-54-GW, TB-56-GW, TB-57,GW, AND TB-58-GW RESULTS FROM OCTOBER 2013.
13. TB-60-GW AND TB-61-GW RESULTS FROM DECEMBER 2013.

LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- TEMPORARY MONITORING WELL (TMW)
- (703) BASELINE TCE CONCENTRATION (ug/L)
- BEDROCK INJECTION WELL (SCREEN INTERVAL ~20 TO 40 FEET-BGS)
- OVERBURDEN INJECTION WELL (SCREEN INTERVAL ~40 TO 50 FEET BGS)
- OVERBURDEN INJECTION WELL (SCREEN INTERVAL ~50 TO 60 FEET BGS)

MW-02S	WELL ID
2/3/2015	DATE SAMPLED
5	TCE
7	1,1-DCE
70	cis-1,2-DCE
2	VC

50 0 50
APPROXIMATE SCALE FEET

REFERENCES

1.) BASE MAP TAKEN FROM CADD FILE ORIGINALLY PREPARED BY WYETH - CAROLINA TITLED "STORM WATER PLAN", FILE NAME "C-SITE-004.dwg", REVISION 2, DATED 05/11/2010. BASE MAP MODIFIED BY GOLDER ASSOCIATES ON 02/06/2014 TO REFLECT EXISTING SITE CONDITIONS AS PER AERIAL PHOTOGRAPHS PROVIDED BY PFIZER INC., DATED 11/01/2013. ACTUAL SITE CONDITIONS MAY VARY.

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

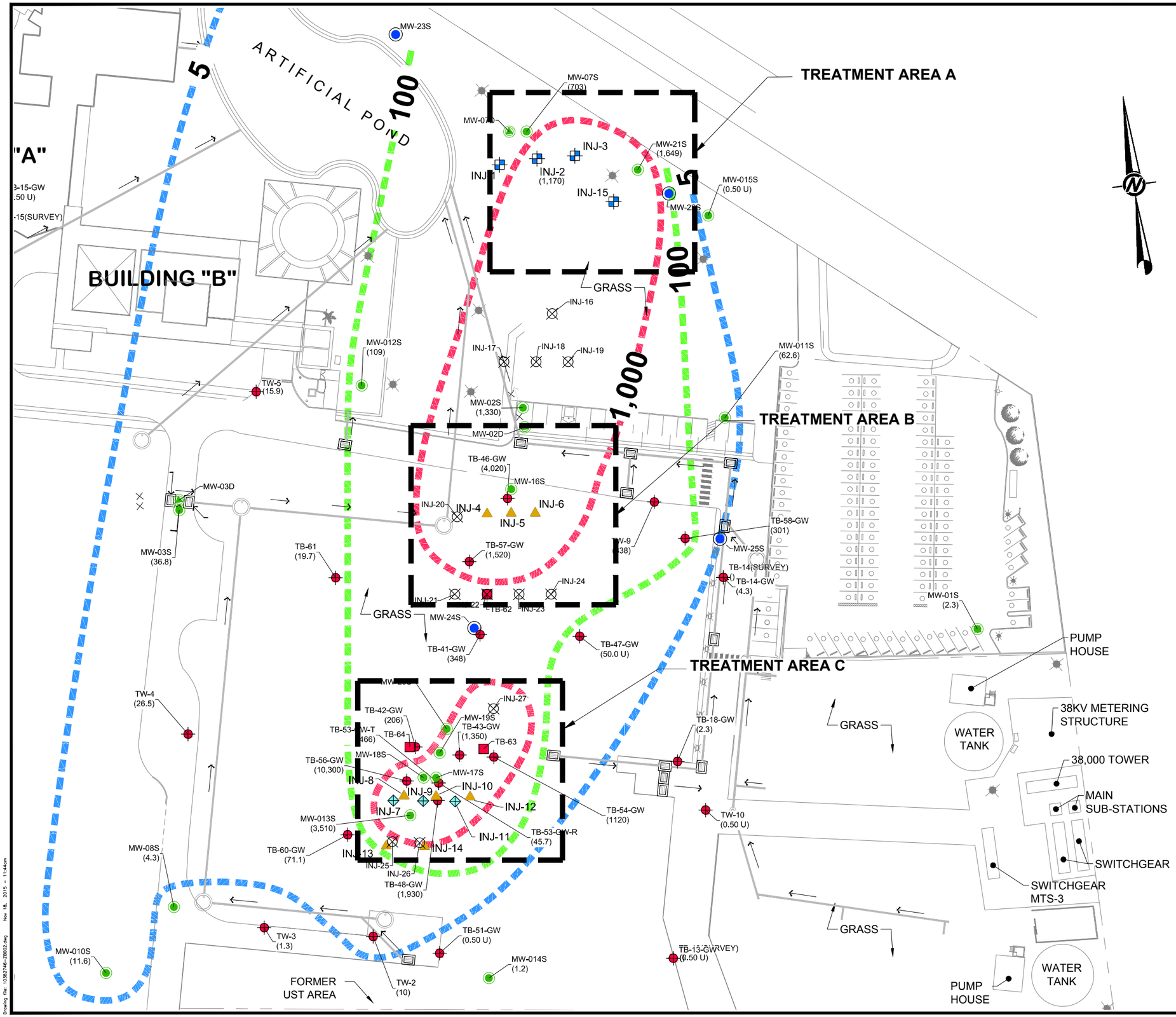
PROJECT
Pfizer
CAROLINA, PUERTO RICO

TITLE
GROUNDWATER MONITORING WELL ANALYTICAL SUMMARY

Golder Associates
Jacksonville, Florida

PROJECT No.		103-82746	FILE No.	10382746-ZB001
DESIGN	KAB	11/16/15	SCALE AS SHOWN	REV. 0
CADD	BCL	11/16/15		
CHECK	KAB	11/17/15		
REVIEW	JP	11/17/15		

FIGURE 1



LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- TEMPORARY MONITORING WELL (TMW)
- TCE CONCENTRATION CONTOUR - 5 ug/L
- TCE CONCENTRATION CONTOUR - 100 ug/L
- TCE CONCENTRATION CONTOUR - 1,000 ug/L
- (703) BASELINE TCE CONCENTRATION (ug/L)
- BEDROCK INJECTION WELL (SCREEN INTERVAL ~20 TO 40 FEET-BGS)
- OVERBURDEN INJECTION WELL (SCREEN INTERVAL ~40 TO 50 FEET BGS)
- OVERBURDEN INJECTION WELL (SCREEN INTERVAL ~50 TO 60 FEET BGS)
- PROPOSED MONITORING WELL
- PROPOSED INJECTION WELL LOCATION
- PROPOSED TMW GROUNDWATER PROFILE LOCATION

NOTES

1.) ALL SITE BUILDINGS, WITH THE EXCEPTION OF BUILDINGS A, B, AND F, WERE DEMOLISHED IN 2013.

2.) TCE = TRICHLOROETHENE.

3.) ug/L = MICROGRAMS PER LITER.

4.) U = INDICATES THAT THE COMPOUND WAS ANALYZED FOR BUT NOT DETECTED. THE VALUE SHOWN IS THE METHOD DETECTION LIMIT.

5.) I = THE REPORTED VALUE IS BETWEEN THE LABORATORY METHOD DETECTION LIMIT AND THE LABORATORY PRACTICAL QUANTITATION LIMIT.

6.) MAXIMUM CONTAMINANT LEVEL (MCL) FOR TCE IS 5 ug/L.

7.) TW-2 THROUGH TW-10 RESULTS FROM SEPTEMBER 2010.

8.) TB-13-GW, TB-14-GW, AND TB-15-GW RESULTS FROM JANUARY 2011.

9.) MW-01S AND MW-04S RESULTS FROM SEPTEMBER 2012.

10.) TB-18-GW RESULTS FROM JUNE 2013.

11.) TB-41-GW, TB-42-GW, TB-43-GW, TB-46-GW, TB-47-GW, AND TB-48-GW RESULTS FROM JULY 2013.

12.) TB-51-GW, TB-53-GW-T, TB-53-GW-R, TB-54-GW, TB-56-GW, TB-57,GW, AND TB-58-GW RESULTS FROM OCTOBER 2013.

13.) TB-60-GW AND TB-61-GW RESULTS FROM DECEMBER 2013.

14.) ALL CONTOURS DASHED WHERE INFERRED.

REFERENCES

1.) BASE MAP TAKEN FROM CADD FILE ORIGINALLY PREPARED BY WYETH - CAROLINA TITLED "STORM WATER PLAN", FILE NAME "C-SITE-004.dwg", REVISION 2, DATED 05/11/2010. BASE MAP MODIFIED BY GOLDER ASSOCIATES ON 02/06/2014 TO REFLECT EXISTING SITE CONDITIONS AS PER AERIAL PHOTOGRAPHS PROVIDED BY PFIZER INC., DATED 11/01/2013. ACTUAL SITE CONDITIONS MAY VARY.

60 0 60

APPROXIMATE SCALE FEET

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RVW

PROJECT

Pfizer
CAROLINA, PUERTO RICO

TITLE

PROPOSED INJECTION AND MONITORING WELL LOCATION MAP

Golder Associates
Jacksonville, Florida

PROJECT No.	103-82746		FILE No.	10382746-ZB002
DESIGN	KAB	11/16/15	SCALE AS SHOWN	REV. 0
CADD	BCL	11/16/15		
CHECK	KAB	11/17/15		
REVIEW	JP	11/17/15		

FIGURE 2

Drawing File: 10382746-ZB002.dwg Nov 18, 2015 - 11:44am