200 Cottontail Lane South, Somerset, NJ 08873
Phone: 732-738-2226 / Todd.Frantz@parsons.com

May 25, 2021

Mr. Ricky Vargas
Land and Redevelopment Program Branch
Land, Chemicals and Redevelopment Division
USEPA Region 2
290 Broadway, 25th Floor
New York, New York 10007

Re: Response to USEPA Comments, dated April 23, 2021 related to the Monitored Natural Attenuation Implementation Work Plan
Former Chevron Perth Amboy Facility
Perth Amboy, New Jersey
SRP PI #003621

Dear Mr. Vargas:

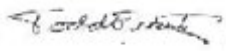
On behalf of Chevron Environmental Management Company (Chevron), Parsons has prepared responses to the comment received from the United States Environmental Protection Agency (USEPA) and the New Jersey Department of Environmental Protection (NJDEP) in a letter dated April 23, 2021. The comments were related to Chevron's Monitored Natural Attenuation (MNA) Implementation Work Plan (IWP), dated September 28, 2018 and the Revised MNA IWP and responses to the July 2019 USEPA comments, dated December 12, 2019. Chevron's response to the USEPA comment is included in this letter below.

Response to Comment #3: The response identified two HP-temporary well locations in the AOC 36 CVOC area. The locations of the two temporary wells on the AOC 22-36 data summary figures are requested, as well as the date, data, and MDLs from the temporary well sampling. Alternatively, this issue can be requested and transferred to the AOC 22-36 monitoring report for review, which should be included as part of the CVOC area.

Chevron Response: The locations of temporary well points HP-0013 and HP-0014, along with the 1,4-dioxane analytical results, are included on the performance monitoring results figures associated with the AOC 36 area included herein as attachments 1 and 2. Additionally, all groundwater analytical results for the temporary well points are included on the table included as Attachment 3.

Should you require additional information for your review, please do not hesitate to contact me directly at (732) 738-2226. Otherwise, Chevron looks forward to receiving your approval on the MNA IWP.

Sincerely,

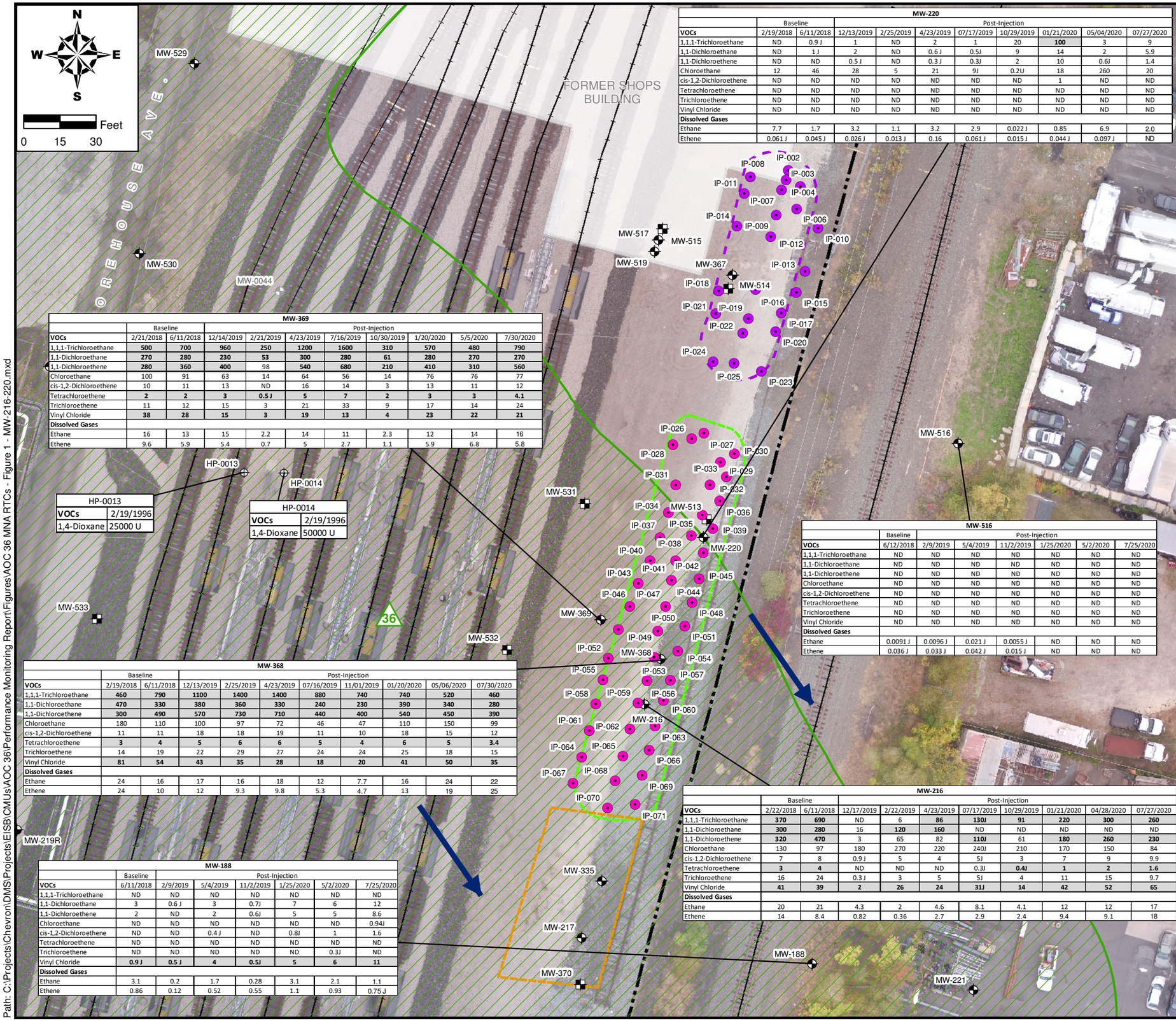


Todd Frantz
Senior Project Manager
Parsons

Attachment 1: Performance Monitoring Results – MW-216/MW-220 Area
Attachment 2: Performance Monitoring Results – MW-367 Area
Attachment 3: Groundwater Analytical Results

cc: Brian Connors, CEMC
Charlie Zielinski, NJDEP
Mike Samuel, Buckeye Perth Amboy Terminal, LLC
Krista Manley, Buckeye Perth Amboy Terminal, LLC

D-ID Number 2021-017-36



MW-220	Baseline		Post-Injection							
VOCs	2/19/2018	6/11/2018	12/13/2019	2/25/2019	4/23/2019	07/17/2019	10/29/2019	01/21/2020	05/04/2020	07/27/2020
1,1,1-Trichloroethane	ND	0.9 J	1	ND	2	1	20	**100**	3	9
1,1-Dichloroethane	ND	1 J	2	ND	0.6 J	0.5J	9	14	2	5.9
1,1-Dichloroethene	ND	ND	0.5 J	ND	0.3 J	0.3J	2	10	0.6J	1.4
Chloroethane	12	46	28	5	21	9J	0.2U	18	260	20
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	1	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Gases										
Ethane	7.7	1.7	3.2	1.1	3.2	2.9	0.022 J	0.85	6.9	2.0
Ethene	0.061 J	0.045 J	0.026 J	0.013 J	0.16	0.061 J	0.015 J	0.044 J	0.097 J	ND

MW-369	Baseline		Post-Injection							
VOCs	2/21/2018	6/11/2018	12/14/2019	2/21/2019	4/23/2019	7/16/2019	10/30/2019	1/20/2020	5/5/2020	7/30/2020
1,1,1-Trichloroethane	**500**	**700**	**960**	**250**	**1200**	**1600**	**310**	**570**	**480**	**790**
1,1-Dichloroethane	**270**	**280**	**230**	**53**	**300**	**280**	**61**	**280**	**270**	**270**
1,1-Dichloroethene	**280**	**360**	**400**	98	**540**	**680**	**210**	**410**	**310**	**560**
Chloroethane	100	91	63	14	64	56	14	76	76	77
cis-1,2-Dichloroethene	10	11	13	ND	16	14	3	13	11	12
Tetrachloroethene	**2**	**2**	**3**	**0.5 J**	**5**	**7**	**2**	**3**	**3**	**4.1**
Trichloroethene	11	12	15	3	21	33	9	17	14	24
Vinyl Chloride	**38**	**28**	**15**	**3**	**19**	**13**	**4**	**23**	**22**	**21**
Dissolved Gases										
Ethane	16	13	15	2.2	14	11	2.3	12	14	16
Ethene	9.6	5.9	5.4	0.7	5	2.7	1.1	5.9	6.8	5.8

HP-0013	
VOCs	2/19/1996
1,4-Dioxane	25000 U

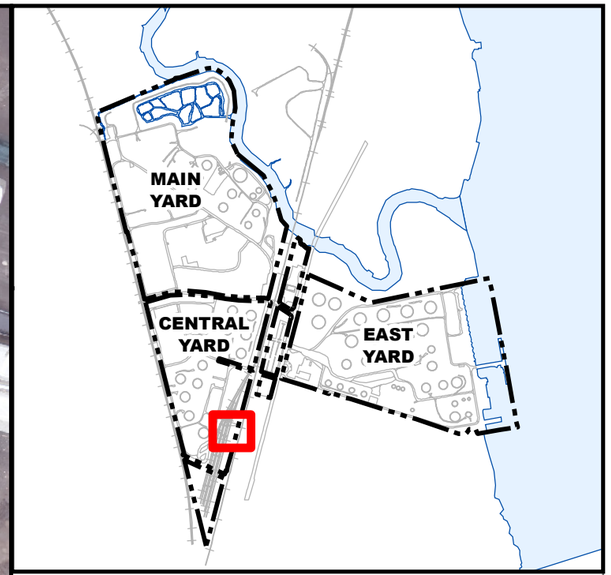
HP-0014	
VOCs	2/19/1996
1,4-Dioxane	50000 U

MW-368	Baseline		Post-Injection							
VOCs	2/19/2018	6/11/2018	12/13/2019	2/25/2019	4/23/2019	07/16/2019	11/01/2019	01/20/2020	05/06/2020	07/30/2020
1,1,1-Trichloroethane	**460**	**790**	**1100**	**1400**	**1400**	**880**	**740**	**740**	**520**	**460**
1,1-Dichloroethane	**470**	**330**	**380**	**360**	**330**	**240**	**230**	**390**	**340**	**280**
1,1-Dichloroethene	**300**	**490**	**570**	**730**	**710**	**440**	**400**	**540**	**450**	**390**
Chloroethane	180	110	100	97	72	46	47	110	150	99
cis-1,2-Dichloroethene	11	11	18	18	19	11	10	18	15	12
Tetrachloroethene	**3**	**4**	**5**	**6**	**6**	**5**	**4**	**6**	**5**	**3.4**
Trichloroethene	14	19	22	29	27	24	24	25	18	15
Vinyl Chloride	**81**	**54**	**43**	**35**	**28**	**18**	**20**	**41**	**50**	**35**
Dissolved Gases										
Ethane	24	16	17	16	18	12	7.7	16	24	22
Ethene	24	10	12	9.3	9.8	5.3	4.7	13	19	25

MW-188	Baseline	Post-Injection					
VOCs	6/11/2018	2/9/2019	5/4/2019	11/2/2019	1/25/2020	5/2/2020	7/25/2020
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	3	0.6 J	3	0.7J	7	6	12
1,1-Dichloroethene	2	ND	2	0.6J	5	5	8.6
Chloroethane	ND	ND	ND	ND	ND	ND	0.94J
cis-1,2-Dichloroethene	ND	ND	0.4 J	ND	0.8J	1	1.6
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	0.3J	ND
Vinyl Chloride	**0.9 J**	**0.5 J**	**4**	**0.5J**	**5**	**6**	**11**
Dissolved Gases							
Ethane	3.1	0.2	1.7	0.28	3.1	2.1	1.1
Ethene	0.86	0.12	0.52	0.55	1.1	0.93	0.75 J

MW-516	Baseline	Post-Injection					
VOCs	6/12/2018	2/9/2019	5/4/2019	11/2/2019	1/25/2020	5/2/2020	7/25/2020
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Dissolved Gases							
Ethane	0.0091 J	0.0096 J	0.021 J	0.0055 J	ND	ND	ND
Ethene	0.036 J	0.033 J	0.042 J	0.015 J	ND	ND	ND

MW-216	Baseline		Post-Injection							
VOCs	2/22/2018	6/11/2018	12/17/2019	2/22/2019	4/23/2019	07/17/2019	10/29/2019	01/21/2020	04/28/2020	07/27/2020
1,1,1-Trichloroethane	**370**	**690**	ND	6	**86**	**130J**	**91**	**220**	**300**	**260**
1,1-Dichloroethane	**300**	**280**	16	**120**	**160**	ND	ND	ND	ND	ND
1,1-Dichloroethene	**320**	**470**	3	65	82	**110J**	61	**180**	**260**	**230**
Chloroethane	130	97	180	270	220	240J	210	170	150	84
cis-1,2-Dichloroethene	7	8	0.9 J	5	4	5J	3	7	9	9.9
Tetrachloroethene	**3**	**4**	ND	ND	ND	0.3J	**0.4J**	**1**	**2**	**1.6**
Trichloroethene	16	24	0.3 J	3	5	5J	4	11	15	9.7
Vinyl Chloride	**41**	**39**	**2**	**26**	**24**	**31J**	**14**	**42**	**52**	**65**
Dissolved Gases										
Ethane	20	21	4.3	2	4.6	8.1	4.1	12	12	17
Ethene	14	8.4	0.82	0.36	2.7	2.9	2.4	9.4	9.1	18



Legend

- MW-367 Area EISB Injection Point
- MW-216/220 Area EISB Injection Point
- Deep Monitoring Well - Current
- Shallow Monitoring Well - Current
- Shallow Monitoring Well - Abandoned
- Temporary Well Point
- 2018 Treatment Zone for MW-367 Area
- 2018 Treatment Zone for MW-216/MW-220 Area
- 2012 Treatment Zone for MW-217 Area
- AOC
- Property Line
- Railroad
- Buildings
- Inferred Groundwater Flow Direction 2018 Q4

GENERAL NOTES:

1. Aerial photograph dated October 2017 was provided by Parsons.
2. Data transposed from tables, lab reports, and field forms provided by Parsons.
3. Substrate injection and bioaugmentation occurred between August 9, 2018 and September 21, 2018.
4. "J" qualifier indicates a laboratory estimate; ND = Not Detected

PERFORMANCE MONITORING RESULTS – MW-216/MW-220 AREA

MNA IWP RTCs

CHEVRON
ENVIRONMENTAL MANAGEMENT COMPANY
PERTH AMBOY, NEW JERSEY

PROJECT #:	DATE:	DWN:	CHKD:	FIG NO.:
452501-89000	5/4/2021	ADW	KA	1

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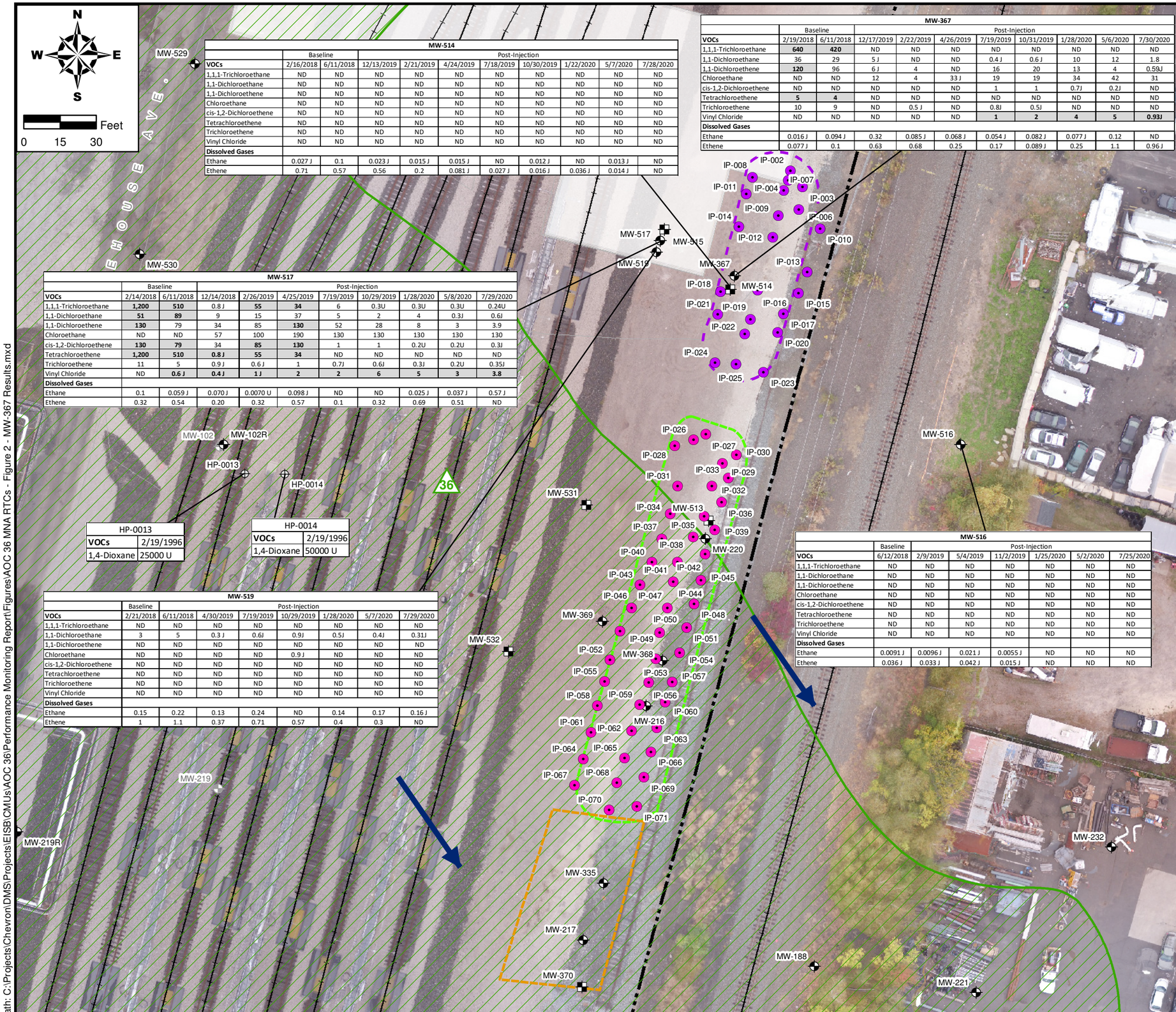


MW-514										
	Baseline		Post-Injection							
VOCs	2/16/2018	6/11/2018	12/13/2019	2/21/2019	4/24/2019	7/18/2019	10/30/2019	1/22/2020	5/7/2020	7/28/2020
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Gases										
Ethane	0.027 J	0.1	0.023 J	0.015 J	0.015 J	ND	0.012 J	ND	0.013 J	ND
Ethene	0.71	0.57	0.56	0.2	0.081 J	0.027 J	0.016 J	0.036 J	0.014 J	ND

MW-367										
	Baseline		Post-Injection							
VOCs	2/19/2018	6/11/2018	12/17/2019	2/22/2019	4/26/2019	7/19/2019	10/31/2019	1/28/2020	5/6/2020	7/30/2020
1,1,1-Trichloroethane	**640**	**420**	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	36	29	5 J	ND	ND	0.4 J	0.6 J	10	12	1.8
1,1-Dichloroethene	**120**	96	6 J	4	ND	16	20	13	4	0.59J
Chloroethane	ND	ND	12	4	33 J	19	19	34	42	31
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	1	1	0.7J	0.2J	ND
Tetrachloroethene	**5**	**4**	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	10	9	ND	0.5 J	ND	0.8J	0.5J	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	**1**	**2**	**4**	**5**	**0.93J**
Dissolved Gases										
Ethane	0.016 J	0.094 J	0.32	0.085 J	0.068 J	0.054 J	0.082 J	0.077 J	0.12	ND
Ethene	0.077 J	0.1	0.63	0.68	0.25	0.17	0.089 J	0.25	1.1	0.96 J

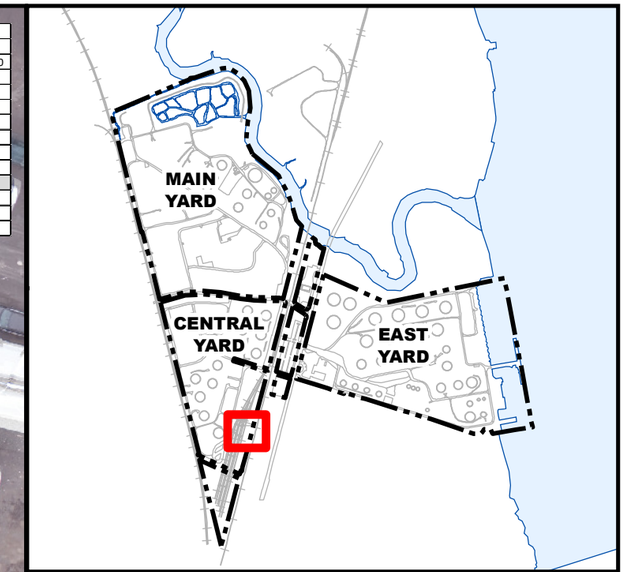
MW-517										
	Baseline		Post-Injection							
VOCs	2/14/2018	6/11/2018	12/14/2018	2/26/2019	4/25/2019	7/19/2019	10/29/2019	1/28/2020	5/8/2020	7/29/2020
1,1,1-Trichloroethane	**1,200**	**510**	0.8 J	**55**	**34**	6	0.3U	0.3U	0.3U	0.24U
1,1-Dichloroethane	**51**	**89**	9	15	37	5	2	4	0.3J	0.6J
1,1-Dichloroethene	**130**	79	34	85	**130**	52	28	8	3	3.9
Chloroethane	ND	ND	57	100	190	130	130	130	130	130
cis-1,2-Dichloroethene	**130**	**79**	34	**85**	**130**	1	1	0.2U	0.2U	0.3J
Tetrachloroethene	**1,200**	**510**	**0.8 J**	**55**	**34**	ND	ND	ND	ND	ND
Trichloroethene	11	5	0.9 J	0.6 J	1	0.7J	0.6J	0.3J	0.2U	0.35J
Vinyl Chloride	ND	**0.6 J**	**0.4 J**	**1 J**	**2**	**2**	**6**	**5**	**3**	**3.8**
Dissolved Gases										
Ethane	0.1	0.059 J	0.070 J	0.0070 U	0.098 J	ND	ND	0.025 J	0.037 J	0.57 J
Ethene	0.32	0.54	0.20	0.32	0.57	0.1	0.32	0.69	0.51	ND

HP-0013	
VOCs	2/19/1996
1,4-Dioxane	25000 U

HP-0014	
VOCs	2/19/1996
1,4-Dioxane	50000 U

MW-519								
	Baseline	Post-Injection						
VOCs	2/21/2018	6/11/2018	4/30/2019	7/19/2019	10/29/2019	1/28/2020	5/7/2020	7/29/2020
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	3	5	0.3 J	0.6J	0.9J	0.5J	0.4J	0.31J
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	0.9 J	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND
Dissolved Gases								
Ethane	0.15	0.22	0.13	0.24	ND	0.14	0.17	0.16 J
Ethene	1	1.1	0.37	0.71	0.57	0.4	0.3	ND

MW-516							
	Baseline	Post-Injection					
VOCs	6/12/2018	2/9/2019	5/4/2019	11/2/2019	1/25/2020	5/2/2020	7/25/2020
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Chloroethane	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND
Dissolved Gases							
Ethane	0.0091 J	0.0096 J	0.021 J	0.0055 J	ND	ND	ND
Ethene	0.036 J	0.033 J	0.042 J	0.015 J	ND	ND	ND



Legend

- MW-367 Area EISB Injection Point
- MW-216/220 Area EISB Injection Point
- Deep Monitoring Well - Current
- Shallow Monitoring Well - Current
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- Temporary Well Point
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- 2018 Treatment Zone for MW-216/MW-220 Area
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- Property Line
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GENERAL NOTES:

1. Aerial photograph dated October 2017 was provided by Parsons.
2. Data transposed from tables, lab reports, and field forms provided by Parsons.
3. Substrate injection and bioaugmentation occurred between July 24, 2018 and October 12, 2018.
4. "J" qualifier indicates a laboratory estimate; ND = Not Detected

PERFORMANCE MONITORING RESULTS – MW-367 AREA

MNA IWP RTCs

CHEVRON
ENVIRONMENTAL MANAGEMENT COMPANY
PERTH AMBOY, NEW JERSEY

PROJECT #:	DATE:	DWN:	CHKD:	FIG NO.:
452501-89000	5/4/2021	ADW	KA	2

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Groundwater Analytical Results
Response to Comments
Monitored Natural Attenuation Implementation Work Plan
Former Chevron Perth Amboy Facility

				Location ID	HP-0013		HP-0014	
				Field Sample ID	HP-0013-A		HP-0014-A	
				Sample Date	02/19/1996		02/19/1996	
Parameter Group Name	Parameter Name	Report Units	Filtered	NJDEP GWQS	Report Result	Method Detection Limit	Report Result	Method Detection Limit
BACR TAL Metals	Antimony	ug/L	N	6	**36.4B***	60	**81.6**	60
BACR TAL Metals	Arsenic	ug/L	N	3	**506**	10	**1080**	10
BACR TAL Metals	Barium	ug/L	N	6000	1510	10	4950	10
BACR TAL Metals	Beryllium	ug/L	N	1	**9**	5	**51**	5
BACR TAL Metals	Cadmium	ug/L	N	4	**51.6**	5.0	**35**	5
BACR TAL Metals	Chromium	ug/L	N	70	**740**	10	**469**	10
BACR TAL Metals	Cobalt	ug/L	N	NA	131	50	312	50
BACR TAL Metals	Lead	ug/L	N	5	**11800**	300	**5410**	3
BACR TAL Metals	Mercury	ug/L	N	2	**4.2**	0.2	**10.4**	0.8
BACR TAL Metals	Nickel	ug/L	N	100	**1260**	40	**1410**	40
BACR TAL Metals	Selenium	ug/L	N	40	17.9	5.0	26.3	5
BACR TAL Metals	Vanadium	ug/L	N	NA	624	50	1200	50
BACR TCL SVOCs	2,4-Dimethylphenol	ug/L	N	100	67	11	110U	110
BACR TCL SVOCs	2,4-Dinitrophenol	ug/L	N	40	23U	23	220U	220
BACR TCL SVOCs	2-Methyl-Naphthalene	ug/L	N	NA	23	22	460	110
BACR TCL SVOCs	2-Methylphenol (o-Cresol)	ug/L	N	NA	12	11	110U	110
BACR TCL SVOCs	4-Nitrophenol	ug/L	N	NA	23U	23	220U	220
BACR TCL SVOCs	Anthracene	ug/L	N	2000	11U	11	110U	110
BACR TCL SVOCs	Benzo(a)anthracene	ug/L	N	0.1	11U	11	110U	110
BACR TCL SVOCs	Benzo(a)pyrene	ug/L	N	0.1	11U	11	110U	110
BACR TCL SVOCs	Benzo(b)fluoranthene	ug/L	N	0.2	11U	11	110U	110
BACR TCL SVOCs	Benzo(k)fluoranthene	ug/L	N	0.5	11U	11	110U	110
BACR TCL SVOCs	bis(2-Ethylhexyl)phthalate	ug/L	N	3	3	11	110U	110
BACR TCL SVOCs	Butylbenzylphthalate	ug/L	N	100	11U	11	110U	110
BACR TCL SVOCs	Chrysene	ug/L	N	5	11U	11	110U	110
BACR TCL SVOCs	Di-n-butylphthalate	ug/L	N	700	11U	11	110U	110
BACR TCL SVOCs	Di-n-octylphthalate	ug/L	N	100	11U	11	110U	110
BACR TCL SVOCs	Dibenz(a,h)anthracene	ug/L	N	0.3	11U	11	110U	110
BACR TCL SVOCs	Diethylphthalate	ug/L	N	6000	11U	11	110U	110
BACR TCL SVOCs	Dimethyl phthalate	ug/L	N	NA	11U	11	110U	110
BACR TCL SVOCs	Fluoranthene	ug/L	N	300	11U	11	110U	110
BACR TCL SVOCs	Naphthalene	ug/L	N	300	92	11	**860**	110
BACR TCL SVOCs	Phenanthrene	ug/L	N	NA	11U	11	110U	110
BACR TCL SVOCs	Phenol	ug/L	N	2000	26	11	12	110
BACR TCL SVOCs	Pyrene	ug/L	N	200	11U	11	110U	110
BACR TCL VOCs	1,2-Dibromoethane	ug/L	N	NA	250U	250	500U	500
BACR TCL VOCs	1,2-Dichlorobenzene (o-Dichlorobenzene)	ug/L	N	600	11U	11	110U	110
BACR TCL VOCs	1,2-Dichloroethane	ug/L	N	2	250U	250	500U	500
BACR TCL VOCs	1,3-Dichlorobenzene	ug/L	N	600	11U	11	110U	110
BACR TCL VOCs	1,4-Dichlorobenzene	ug/L	N	75	11U	11	110U	110
BACR TCL VOCs	1,4-Dioxane	ug/L	N	0.4	25000U	25000	50000U	50000
BACR TCL VOCs	2-Butanone (Methyl ethyl ketone)	ug/L	N	300	500U	500	1000U	1000
BACR TCL VOCs	Benzene	ug/L	N	1	**6800**	250	**8000**	500
BACR TCL VOCs	Carbon disulfide	ug/L	N	700	250U	250	500U	500
BACR TCL VOCs	Chlorobenzene	ug/L	N	50	250U	250	500U	500
BACR TCL VOCs	Chloroform	ug/L	N	70	250U	250	500U	500
BACR TCL VOCs	Ethylbenzene	ug/L	N	700	**2600**	250	**5000**	500
BACR TCL VOCs	Styrene	ug/L	N	100	250U	250	500U	500
BACR TCL VOCs	Toluene	ug/L	N	600	**850**	250	**18000**	500
BACR TCL VOCs	Xylene (total)	ug/L	N	1000	**7800**	250	**26000**	500

Notes:
Bold and highlighted indicates exceedance to NJDEP GWQS
NA - No action level limit available for this parameter
U - Analyte not detected at that concentration
B - Analyte found in the sample and associated blank