REQUEST TO MODIFY GROUNDWATER SAMPLING PROGRAM January 2018

TO: Mr. John T. Hunt
Wisconsin Department of Natural Resources (WDNR) Project Manager

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DATE: January 15, 2018

PROJECT: WDNR BRRTS#02-16-00475
Magellan Pipeline Company, L.P. Superior Station
2301 Winter Street, Superior, Wisconsin

The purpose of this memorandum is to notify the Wisconsin Department of Natural Resources (WDNR) of the intent of Magellan Pipeline Company, L.P. (Magellan) to modify the groundwater sampling program for the Magellan Superior Station (Station). The Station is located near 2301 Winter Street (**Figure 1**).

Magellan proposes to remove monitoring wells MW-5 and MW-8 from future sampling activities. The rationale for removing the wells from the sampling plan is as follows:

- MW-8:
  - Petroleum volatile organic compounds (PVOCs) have not been detected in any samples collected from this well historically; fifteen samples have been collected from 2007 through 2017 (**Table 1**);
  - Polynuclear aromatic hydrocarbons (PAHs) have not been detected above the laboratory reporting limit in samples collected from this well since November 2007 (**Table 2**);
  - MW-8 is located side-gradient of MW-3 (**Figure 2**); a declining trend is apparent in the water quality at MW-3; therefore, additional sampling of MW-8 is not necessary as the extent of the plume is diminishing; and,
  - MW-8 is located within 25 feet of the railroad; BNSF has requested that the services of a flagger be procured to conduct any work within 25 feet of the railroad. The likelihood of being able to procure a flagger for the January 23rd sampling event is very low.

- MW-5:
    - PVOCs have not been detected at concentrations above the Enforcement Standards (ESs) in samples collected from MW-5 since 2006;
    - PAHs have not been detected above the laboratory reporting limit in samples collected from this well since November 2007, with the exception of 1-methylnaphthalene which does not have an ES or a Preventive Action Limit prescribed;
    - MW-5 is located side-gradient of MW-6 and a declining trend is apparent in the concentrations of benzene, toluene, ethylbenzene and xylenes (BTEX) in water samples collected from MW-6; therefore, additional sampling of MW-5 is not necessary as the extent of the plume is diminishing;
    - Similar to MW-8, MW-5 is located within 25 feet of the railroad so the services of a flagger would need to be procured to conduct any work at this well.

Following the completion of the January 2018 sampling event, Magellan will evaluate the data to determine if any other changes in the sampling program are warranted (i.e. pursue site closure).

Attachments:

Table 1 – Historical Groundwater Results-VOCs (MW-5 and MW-8)
Table 2 – Historical Groundwater Results-PAHs (MW-5 and MW-8)

Figure 1 – Area Location
Figure 2 – Benzene Concentration in Groundwater, October/November 2017

TABLES

TABLE 1

MAGELLAN PIPELINE COMPANY, L.P.
SUPERIOR STATION
SUPERIOR, WISCONSIN

Historical Groundwater Results - VOCs

(micrograms per liter (ug/L))

Sampling Location	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Gasoline Range Organics	Diesel Range Organics	TPH as Gas	TPH as Fuel Oil	1,2,4-Trimethyl-benzene	1,3,5,-Trimethyl-benzene	Methyl tert-butyl ether	Naphthalene
WAC NR 140 ES		**5**	**800**	**700**	**2,000**	**NSS**	**NSS**	**NSS**	**NSS**	**480 ***	**480 ***	**60**	**100**
WAC NR 140 PAL		**0.5**	**160**	**140**	**400**	**NSS**	**NSS**	**NSS**	**NSS**	**96 ***	**96 ***	**12**	**10**
MW-5	6/8/2006	**9.1**	0.22 J	130	100	870	550	-	-	79	33	<0.50	*28*
MW-5	10/26/2006	**5.1**	0.11 J	32	3.1	310	360	-	-	2.9	<0.19	<1.3 RL1	1.4
MW-5	2/1/2007	*3.5*	<0.11	3.0	<0.39	86	240			0.52 J	<0.19	0.74 J	<0.41
MW-5	5/22/2007	*3.5*	0.12 J	0.76	<0.39	<50	190	-	-	0.59 J	<0.19	0.93	<0.40
MW-5	8/9/2007	*2.2*	<0.11	<0.22	<0.39	<50	<100	-	-	<0.25	<0.19	0.68 J	<0.40
MW-5	11/20/2007	*2.1*	<0.11	0.35 J	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-5	2/19/2008	*1.5*	<0.11	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-5	5/7/2008	*1.4*	<0.11	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.56 J	<0.40
MW-5	8/19/2008	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.64 J	<0.40
MW-5	11/25/2008	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.49 J	<0.41
MW-5	2/18/2009	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.60 J	<0.40
MW-5	8/11/2009	0.028 J	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.58 J	<0.40
MW-5	2/23/2010	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.55 J	<0.40
MW-5	8/10/2010	0.29 J	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	0.36 J	<0.40
MW-5	2/22/2011	0.34 Ja, P	<0.25 P	<0.22 P	<0.39 P	-	-	-	-	<0.25 P	<0.19 P	0.80 Ja, P	<0.0329
MW-5	8/2/2011	0.98 Ja	<0.25	<0.22	<0.39	-	-	-	-	--	--	1.9 Ja	<0.0460
MW-5	10/30/2017	*1.1*	<0.33	<0.37	<0.58	-	-	-	-	<0.30	<0.30	2.0	<0.23
MW-8	2/1/2007	<0.20	<0.20	<0.50	<0.50	<50	<100	-	-	<0.20	<0.20	<0.50	<0.25
MW-8	5/22/2007	<0.25	<0.11	<0.22	<0.39	<50	100	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	8/9/2007	<0.25	<0.11	<0.22	<0.39	<50	<100	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	11/20/2007	<0.25	<0.11	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	2/19/2008	<0.25	<0.11	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	5/7/2008	<0.25	<0.11	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	8/19/2008	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	11/25/2008	<0.25	<0.25	<0.22	<0.39	-	-	2	-	<0.25	<0.19	<0.23	<0.40
MW-8	2/18/2009	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	8/11/2009	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	2/23/2010	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	8/10/2010	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.40
MW-8	2/22/2011	<0.25	<0.25	<0.22	<0.39	-	-	-	-	<0.25	<0.19	<0.23	<0.0329
MW-8	8/2/2011	<0.25	<0.25	<0.22	<0.39	-	-	-	-	--	--	<0.23	<0.0460
MW-8	10/30/2017	<0.36	<0.33	<0.37	<0.58	-	-	-	-	<0.30	<0.30	<0.24	<0.23

WAC NR 140 ES : Wisconsin Administrative Code Chapter NR 140, Enforcement Standards, revised February 2017.
WAC NR 140 PAL : Wisconsin Administrative Code Chapter NR 140, Preventive Action Limits, revised February 2017.
< : Not detected above laboratory method detection limit.
9.1 : Exceeds Enforcement Standard.
69 : Exceeds Preventive Action Limit.
- : Constituent not analyzed.
* : Wisconsin NR 140 standards are for the combined concentration of 1,2,4 and 1,3,5 Trimethylbenzene.
NSS : No standard set.
J/Ja : Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.
VOCs : Volatile organic compounds.
TPH : Total petroleum hydrocarbons.
RL1 : Reporting limit raised due to sample matrix effects.
P : The sample, as received, was not preserved in accordance to the referenced analytical method.

TABLE 2

MAGELLAN PIPELINE COMPANY, L.P.
SUPERIOR STATION
SUPERIOR, WISCONSIN

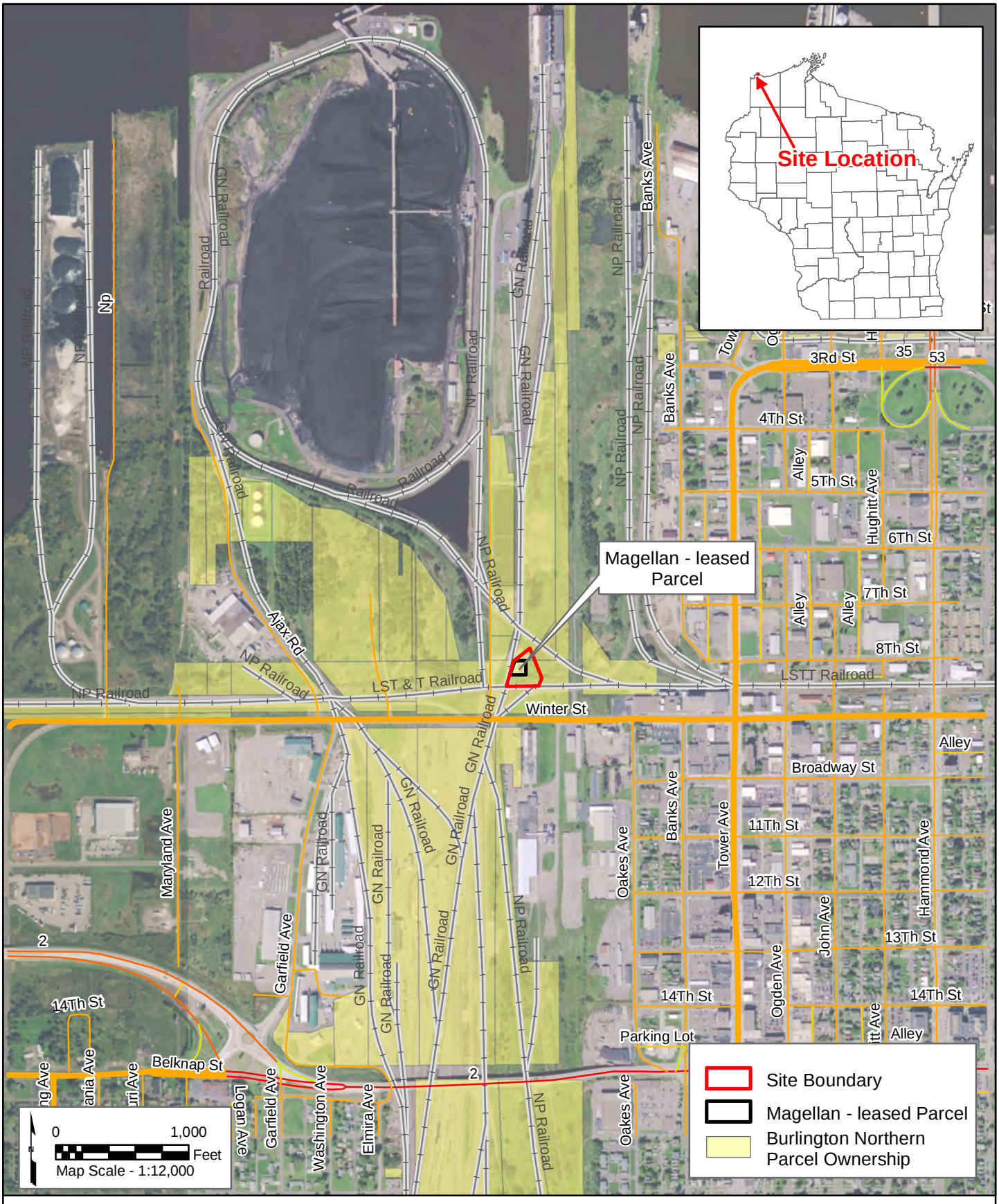
Historical Groundwater Results - PAHs

(results are in micrograms per liter (ug/L))

Sampling Location	Sampling Date	Acenaphthalene	Acenaphthylene	Anthracene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (k) fluoranthene	Benzo (a) pyrene	Benzo (ghi) perylene	Chrysene	Dibenzo (a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3-cd) pyrene	1-Methyl naphthalene	2-Methyl naphthalene	Naphthalene	Phenanthrene	Pyrene
WAC NR 140 ES		**NSS**	**NSS**	**3,000**	**NSS**	**0.20**	**NSS**	**0.2**	**NSS**	**0.20**	**NSS**	**400**	**400**	**NSS**	**NSS**	**NSS**	**100**	**NSS**	**250**
WAC NR 140 PAL		**NSS**	**NSS**	**600**	**NSS**	**0.02**	**NSS**	**0.02**	**NSS**	**0.02**	**NSS**	**80**	**80**	**NSS**	**NSS**	**NSS**	**10**	**NSS**	**50**
MW-5	6/8/2006	<0.33	<0.70	<0.038	<0.044	<0.099	<0.049	<0.032	<0.12	<0.041	<0.13	<0.082	<0.063	<0.063	10	9.9	*22*	<0.030	<0.044
MW-5	10/26/2006	<0.33	<0.70	<0.038	<0.044	<0.099	<0.049	<0.032	<0.12	<0.041	<0.13	<0.082	<0.063	<0.063	1.9	<0.31	1.4	<0.030	<0.044
MW-5	2/1/2007	<0.34	<0.70	<0.039	<0.045	<0.10	<0.050	<0.033	<0.12	<0.042	<0.13	<0.083	<0.063	<0.063	<0.33	<0.32	<0.41	<0.031	<0.045
MW-5	5/22/2007	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	0.37 J	<0.31	<0.40	<0.030	<0.044
MW-5	8/9/2007	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	11/20/2007	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	2/19/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	5/7/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	8/19/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081 L	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	11/25/2008	<0.34	<0.71	<0.039	<0.045	<0.10	<0.051	<0.033	<0.12	<0.042	<0.13	<0.084	<0.064	<0.064	<0.33	<0.32	<0.41	<0.031	<0.045
MW-5	2/18/2009	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	8/11/2009	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	2/23/2010	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	8/10/2010	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-5	2/22/2011	<0.0157	<0.0621	0.00883 J	<0.00357	<0.0200	<0.00500	<0.00571	<0.00571	<0.00571	<0.00714	<0.00714	<0.0114	<0.00429	<0.0229	<0.0179	<0.0329	<0.00357	<0.0121
MW-5	8/2/2011	<0.0220	<0.0870	<0.0100	<0.0200	<0.0280	<0.00700	<0.00800	<0.00800	<0.00800	<0.0100	<0.0100	<0.0160	<0.00600	0.171 J	<0.100	<0.0460	<0.00500	<0.0170
MW-5	10/30/2017	<0.23	<0.20	<0.25	<0.042	<0.060	<0.047	<0.073	<0.28	<0.050	<0.038	<0.34	<0.18	<0.055	2.6	<0.048	<0.23	<0.22	<0.32
MW-8	2/1/2007	<0.33	<0.70	<0.038	<0.044	<0.099	<0.049	<0.032	<0.12	<0.041	<0.13	<0.082	<0.063	<0.063	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	5/22/2007	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	8/9/2007	<0.33	<0.69	0.083 J	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	0.19 J	<0.062	<0.062	<0.32	<0.31	<0.40	0.27	0.073 J
MW-8	11/20/2007	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	2/19/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	5/7/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	8/19/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	0.17 L, J	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	11/25/2008	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	2/18/2009	<0.33	<0.68	<0.038	<0.044	<0.097	<0.049	<0.032	<0.12	<0.041	<0.13	<0.080	<0.061	<0.061	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	8/11/2009	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	2/23/2010	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	8/10/2010	<0.33	<0.69	<0.038	<0.044	<0.098	<0.049	<0.032	<0.12	<0.041	<0.13	<0.081	<0.062	<0.062	<0.32	<0.31	<0.40	<0.030	<0.044
MW-8	2/22/2011	<0.0157	<0.0621	0.00718 J	<0.00357	<0.0200	<0.00500	<0.00571	<0.00571	<0.00571	<0.00714	<0.00714	<0.0114	<0.00429	<0.0229	<0.0179	<0.0329	<0.00357	<0.0121
MW-8	8/2/2011	<0.0220	<0.0870	<0.0100	<0.0200	<0.0280	<0.00700	<0.00800	<0.00800	<0.00800	<0.0100	<0.0100	<0.0160	<0.00600	<0.100	<0.100	<0.0460	<0.00500	<0.0170
MW-8	10/30/2017	<0.23	<0.20	<0.25	<0.042	<0.059	<0.047	<0.073	<0.28	<0.050	<0.037	<0.33	<0.18	<0.055	<0.22	<0.048	<0.23	<0.22	<0.31

PAH : Polynuclear aromatic hydrocarbons.
WAC NR 140 ES : Wisconsin Administrative Code Chapter NR 140, Enforcement Standards, revised February 2017.
WAC NR 140 PAL : Wisconsin Administrative Code Chapter NR 140, Preventive Action Limits, revised February 2017.
NSS : No standard set.
0.25 : Exceeds Enforcement Standard
0.059 : Exceeds Preventive Action Limit.
< : Not detected above laboratory method detection limit.
L : Laboratory control sample and/or laboratory control duplicate was above the acceptance limits.
J : Result is less than the reporting limit but greater than or equal to the method detection limit and the concentration is an approximate value.

FIGURES



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community and the City of Superior

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MAGELLAN PIPELINE COMPANY, L.P.

SUPERIOR STATION
SUPERIOR, WISCONSIN

AREA LOCATION

FILE:	G3RTSUP01t.MXD	DATE:	12/8/2017	FIGURE:	1

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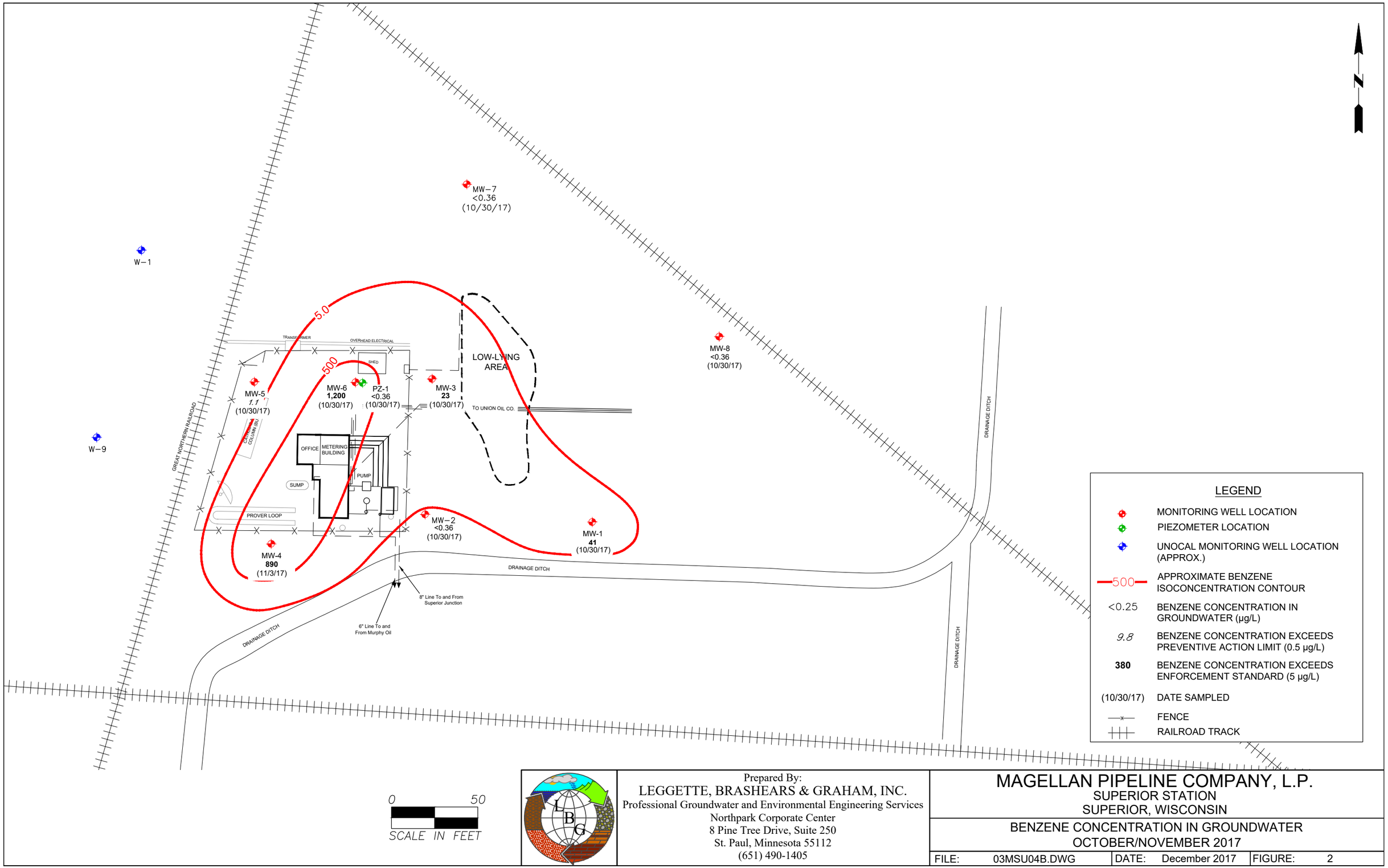

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MAGELLAN PIPELINE COMPANY, L.P.

SUPERIOR STATION
SUPERIOR, WISCONSIN

BENZENE CONCENTRATION IN GROUNDWATER
OCTOBER/NOVEMBER 2017

FILE:	03MSU04B.DWG	DATE:	December 2017	FIGURE:	2