



July 9, 2018

Mr. Grant Lidren
Alaska Department of Environmental Conservation
Division of Spill Prevention and Response
555 Cordova St.
Anchorage, AK 99501

**RE: Work Plan Addendum for Groundwater Monitoring at the ML&P Transformer Shop;
1130 E. First Ave., Anchorage, Alaska (Hazard ID: 23842)**

Dear Mr. Lidren:

This Work Plan Addendum is submitted in response to a request by the Alaska Department of Environmental Conservation (ADEC) to perform additional investigation and analyses at the Municipal Light and Power (ML&P) Transformer Shop Site at 1130 E. First Avenue (formerly 1201 E. Third Ave.), in Anchorage, Alaska. The request was sent to ML&P during after the ADEC conducted a file review of the Site in November 2017 (ADEC 2017b). This Work Plan Addendum addresses changes to groundwater monitoring program. The requested vapor intrusion pathway evaluation will be addressed at a later date under separate cover.

The Site is listed with ADEC as File #2100.26.302, Record Key #90210001102, and Hazard ID 23842. The petroleum hydrocarbon contamination in the groundwater is attributed to leaking underground storage tanks removed in 1989. Since 2002, sampling activities at the Site have been conducted in accordance with the *Work Plan for Groundwater Monitoring at 1201 E. 3rd Ave, Anchorage* (Work Plan, ML&P 2002), and subsequent modifications approved by ADEC. These modifications have been detailed in previous annual groundwater monitoring reports, and include the following:

- In 2004, ADEC requested continuation of groundwater sampling at five of the six monitoring wells at the Site (MW-3, MW-5, MW-6, MW-7 and MW-9) (ADEC 2004). Monitoring was to be conducted annually in the summer (June) and the samples analyzed for diesel range organics (DRO), gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and total xylenes (BTEX).
- In 2011, the sampling method was changed to a low-flow sampling technique utilizing a peristaltic pump to improve sample quality (decreased turbidity) and reduce the volume of purge water generated. This differs from the 2002 Work Plan, which included the removal of 3 well casing volumes of purge water with a bailer prior to sampling.
- Monitoring well MW-3 was damaged during the winter of 2013-2014, and was removed from the monitoring program (ADEC 2015).
- Since 2013, alternate purging methods have been conducted in monitoring well MW-9, which has historically been a poor yielding well and has repeatedly gone dry when

purging and attempting to achieve stable parameters, even at very low flow rates. In 2013 and 2014, MW-9 was sampled prior to purging. In 2013 an attempt was made to resample following purging, but recharge was not sufficient for a full sample suite. In 2015 and 2016 MW-9 was initially purged dry and allowed to recover prior to sampling.

- Beginning in 2016, monitoring frequency was reduced to biennial (once every two years), occurring during even-numbered years.

Groundwater Sampling Methods

All of the groundwater monitoring wells are flush-mounted and located in an asphalt paved lot adjacent to the Transformer Shop Building. Figure 1 provides a General Vicinity Map for the site, and Figure 2 provides a Site Plan showing 2016 monitoring results. SLR International Corporation (SLR) personnel will collect groundwater samples at four monitoring wells (MW-5, MW-6, MW-7, and MW-9) every other year until the Work Plan is amended or cleanup complete determination is approved by the ADEC. The next sampling event scheduled for the summer of 2018. The sampling effort will be completed by personnel who meet the criteria of ADEC-qualified environmental professionals and samplers per 18 AAC 75.333. During the sampling events, groundwater sampling forms documenting the sampling of the wells will be completed, and photographs documenting the site conditions and monitoring activities will be taken.

Prior to the collection of the groundwater samples, the water levels in all wells will be measured using an electronic water level indicator. With the exception of monitoring well MW-9 (discussed below) groundwater samples will be collected via a low-flow sampling method using a peristaltic pump. The low-flow sampling method consists of purging at a low flow rate (between 0.05 and 0.5 liters per minute [L/min]), while maintaining a drawdown of less than 0.3 feet, if possible. During the purging, up to six water quality parameters will be measured (temperature, pH, conductivity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and turbidity) at three to five minute intervals. Water quality parameters are considered stable when three consecutive readings of at least three parameters (or four if temperature is used) are within:

- $\pm 3\%$ for temperature (minimum of $\pm 0.2^\circ \text{C}$),
- ± 0.1 for pH,
- $\pm 3\%$ for conductivity,
- $\pm 10 \text{ mv}$ for ORP,
- $\pm 10\%$ for DO, and
- $\pm 10\%$ for turbidity.

Due to its history as a poor yielding well, MW-9 will be intentionally purged dry, and allowed to recover prior to sampling. Groundwater sampling will be conducted approximately 24 to 48 hours following purging. Water quality parameters will be measured concurrent with sampling.

Laboratory Analyses

Groundwater samples will be collected from the four monitoring wells, including a duplicate sample from well MW-9, and submitted to SGS North America in Anchorage using chain-of-custody procedures. Samples will be collected for the following:

- DRO by Method AK 102, GRO by Method AK101 and BTEX by Method SW8260c.

- In addition, MW-9 will be sampled for full list Volatile Organic Compounds (VOCs) by Method SW8260c and Polycyclic Aromatic Hydrocarbons, Select Ion Monitoring (PAH-SIM) by SW8270d.

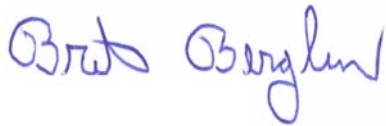
Analytical data will be reviewed for consistency with the ADEC Technical Memorandum; *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling* (ADEC 2017a). The sampling results will be reported following the data review.

Purge Water Storage and Disposal

The purge water generated during sampling activities will be stored in metal or plastic drums/containers, which will be labeled and tightly covered. Purge water from MW-9 will be containerized separately from other wells. After receiving analytical results, ML&P will dispose of wastewater in excess of applicable cleanup criteria at a facility authorized to accept the waste.

If you have any questions or concerns, please contact Bret Berglund (SLR, 907-563-2128) or Yelena Saville (ML&P, 907-263-5273).

Sincerely,



Bret Berglund
Project Manager, C.P.G.

cc: Yelena Saville, ML&P

References

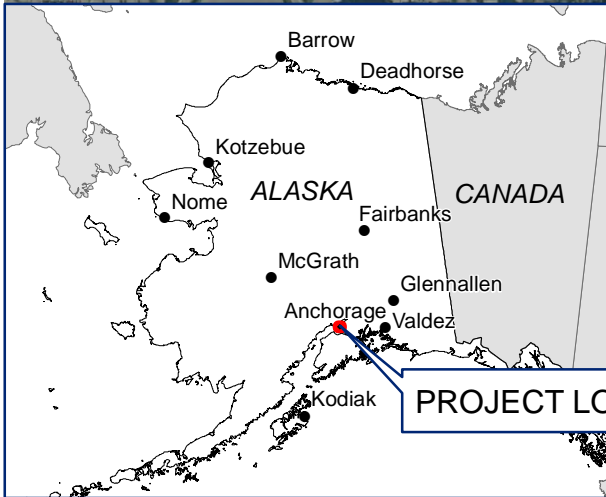
- Alaska Department of Environmental Conservation (ADEC). 2004. Letter from Beatrice Egbejimba (ADEC) to Yelena Saville (ML&P) approving the September 2003 Groundwater Monitoring Event. February 3.
- ADEC. 2015. Letter, *Re: Municipal Light & Power Transformer Shop*, from Grant Lidren (ADEC) to Yelena Saville (ML&P). February 3.
- ADEC. 2017a. Technical Memorandum: *Data Quality Objectives, Checklists, Quality Assurance Requirements for Laboratory Data, and Sample Handling*. March.
- ADEC. 2017b. Letter, *Re: Municipal Light & Power Transformer Shop*, from Grant Lidren (ADEC) to Yelena Saville (ML&P). November 28.

Municipal Light and Power (ML&P). 2002. Work Plan for Groundwater Monitoring at 1201 E. 3rd Ave, Anchorage, File # L69.07, Fac. ID #1420, Event ID #133, Reckey # 90210001102. August 26.

Attachments

Figure 1 Site Vicinity Map

Figure 2 Site Plan and June 2016 Groundwater Sampling Results



Site
 MUNICIPAL LIGHT AND POWER
 1130 EAST 1ST AVENUE
 (FORMERLY 1201 EAST 3RD AVENUE)
 ANCHORAGE, ALASKA

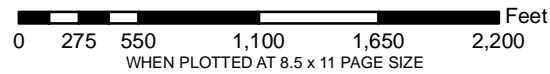
Report
 TRANSFORMER SHOP
 2016 GROUNDWATER SAMPLING

Drawing
 GENERAL VICINITY MAP

Drawing February 2017
 File Name F1 Transformer Shop Bldg_16.mxd

Scale 1 in = 880 feet
 Project No. 101.00528.11001

Fig. No. 1

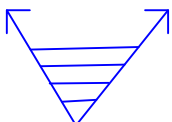


THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY.
 ACTUAL LOCATIONS MAY VARY AND NOT ALL STRUCTURES ARE SHOWN.





Historical Groundwater Flow Direction (Approximate)



Transformer Shop Building
1130 E. 1st Avenue
(formerly 1201 E. 3rd Avenue)

MW-3
Well Damaged
Not Sampled

MW-7 TS	
Analyte	Result
DRO	ND [0.3]
GRO	ND [0.05]
B	ND [0.0002]
T	0.00055 J
E	ND [0.0005]
X	ND [0.001]

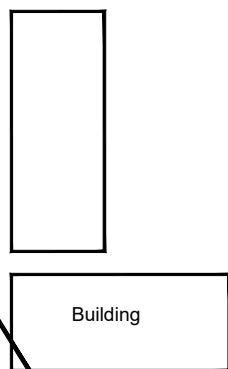
MW-6 TS	
Analyte	Result
DRO	0.191 J
GRO	ND [0.05]
B	ND [0.0002]
T	ND [0.0005]
E	ND [0.0005]
X	ND [0.001]

MW-8 TS

MW-9 TS / MW-99 TS	
Analyte	Result
DRO	2.16 / 2.38 DUP
GRO	2.34 / 2.52 DUP
B	0.645 / 0.5 DUP
T	0.00771 / 0.00741
E	0.00295 MN / 0.00418 MN DUP
X	0.2052 / 0.1917 DUP

Asphalt Pavement

MW-5 TS	
Analyte	Result
DRO	ND [0.294]
GRO	ND [0.05]
B	ND [0.0002]
T	ND [0.0005]
E	ND [0.0005]
X	ND [0.001]



Building

Legend	
	GROUNDWATER MONITORING WELL
	GROUNDWATER MONITORING WELL - SAMPLING DISCONTINUED IN 2003
	CHAIN-LINK FENCE

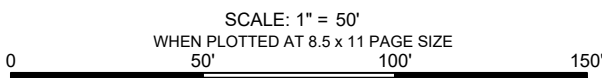
Sampling Results Guidelines	
AAC	ALASKA ADMINISTRATIVE CODE
ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DRO	DIESEL RANGE ORGANICS
GRO	GASOLINE RANGE ORGANICS
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
DUP	DUPLICATE SAMPLE
ND	ANALYTE IS NOT DETECTED ABOVE THE LIMIT OF DETECTION (LOD) SHOWN
J	RESULT IS AN ESTIMATION
F	COMPOUND WAS POSITIVELY IDENTIFIED AT A CONCENTRATION ABOVE THE DETECTION LIMIT BUT BELOW THE LIMIT OF QUANTITATION (LOQ).
0.00249	SAMPLE HAS EXCEEDED ADEC CLEANUP LEVEL LISTED IN 18 AAC 75.345 TABLE C (NOVEMBER 2016)
0.005	SAMPLE DOES NOT EXCEED ADEC CLEANUP LEVEL LISTED IN 18 AAC 75.345 TABLE C (NOVEMBER 2016)

Site
**ML&P 1130 E. 1ST AVENUE
(FORMERLY 1201 E. 3RD AVENUE)
ANCHORAGE, ALASKA**

Report
**TRANSFORMER SHOP
2016 GROUNDWATER SAMPLING**

Drawing
**SITE PLAN AND JUNE 2016
GROUNDWATER SAMPLING RESULTS**

Date	February 2017	Scale	1" = 50 Feet	Fig. No.	2
File Name	F2 Trans Shop GW Results_16	Project No.	105.00528.11001		



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