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By Alameda County Environmental Health 10:16 am, Mar 20, 2017

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March 10, 2017

Mr. Mark Detterman
Hazardous Materials Specialist
Alameda County Environmental Health Services
Environmental Protection, Local Oversight Program
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Subject: Letter of Transmittal for Second Semiannual 2015 Groundwater Monitoring Report, Former McGrath Steel, 6655 Hollis Street, Emeryville, California 94608, ACEH Fuel Leak Case No. RO0000063, GeoTracker Global ID No. T0600102099

Dear Mr. Detterman:

As required in your letter of September 30, 2016, we submit this transmittal letter and accompanying *Second Semiannual 2016 Groundwater Monitoring Report*.

I declare under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Sincerely,

MCG Investments LLC,
A California Limited Liability
Company



Walter F. Merkle
Authorized Agent



AllWest

AllWest Environmental

SECOND SEMIANNUAL 2016 GROUNDWATER MONITORING REPORT

**Former McGrath Steel, 6655 Hollis St. & 1471 67th St.,
Emeryville, CA**

Alameda County Fuel Leak Case # RO0000063

GeoTracker Facility Global ID # T0600102099

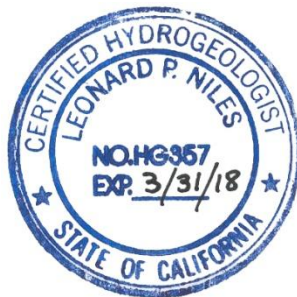


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ALLWEST PROJECT 16040.28
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SECOND SEMIANNUAL 2016 GROUNDWATER MONITORING REPORT

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Emeryville, CA

Alameda County Fuel Leak Case # RO0000063
GeoTracker Facility Global ID # T0600102099

I. INTRODUCTION

AllWest conducted semiannual groundwater monitoring on December, 2016 at the property referenced above (“the subject site”, Figure 1). The monitoring was performed to evaluate free product, petroleum hydrocarbons and volatile organic compounds (VOCs) concentrations in subject site groundwater.

II. PROJECT BACKGROUND

The subject property is located at the southwest corner of the intersection of Hollis and 67th Streets in a commercial and industrial district of the City of Emeryville, Alameda County, California. A site vicinity map is included as Figure 1.

The subject property consists of two parcels (Assessor’s Parcel Numbers 049-1511-01 and 049-1511-014). Parcel 01, on the southwest corner of Hollis and 67th Streets at the 6655 Hollis Street address, is developed with an approximately 4,100 square foot two-story commercial office building constructed in 1947, and a smaller metal tool shed building. Parcel 14, to the west of Parcel 1 at the 1471 67th Street address, is developed with an approximately 15,246 square foot light industrial warehouse building constructed circa 1946 (Stellar, 2011).

The subject property is vacant. It was last occupied by CMC Rebar circa 2011. Two USTs formerly present under the sidewalk in front of the warehouse at 1471 67th Street were removed in 1996. A site plan with former UST locations and historical and current boring and monitoring well locations is included as Figure 2.

Several subsurface investigations and groundwater monitoring events have been performed at the subject property since 1996. Sampling data indicate the petroleum hydrocarbon plume in groundwater extends beneath the subject property buildings.

Site location and description, background information, and a summary of previous investigations, remedial actions and monitoring activities were summarized in our *Additional Site Characterization and Interim Remedial Action Workplan* (AllWest, 2011), *Additional Site Characterization Workplan Addendum* (AllWest, 2012a), *Subsurface Investigation* (AllWest, 2013b), *Additional Site Characterization and Monitoring Well Installation Report* (AllWest, 2013e), *Data Gap Investigation Report* (AllWest, 2016b) and *First Semi-Annual Groundwater Monitoring Report* (AllWest, 2016c). AllWest conducted quarterly groundwater monitoring from

August 2012 to June 2014. Alameda County Environmental Health (ACEH), in their letter dated September 15, 2014, reduced groundwater monitoring to a semiannual basis. AllWest conducted semi-annual monitoring in February 2015, July 2016, and December 2016.

On December 31, 2013, a Geotech PRC 1-liter capacity product recovery canister-type passive skimming device was placed in well MW-3 (AllWest, 2014a). It was removed on February 5, 2015 due to an insufficient volume of product in the monitoring well to effectively work (AllWest, 2015a). The passive skimming device, with a smaller 0.125-liter capacity canister, was re-installed on July 14, 2016 due to the presence of a thin layer of free product during that monitoring event. It was removed during the current monitoring event.

III. PURPOSE AND SCOPE OF WORK

The purpose of our work was the monitoring and interim mitigation of light non-aqueous phase liquid (LNAPL), dissolved-phase petroleum hydrocarbons in groundwater in the vicinity of the former UST at the subject property. The scope of work, as proposed, consisted of the following tasks:

1. On December 21, 2016, measured groundwater levels and free product (LNAPL) thickness, purged a minimum of three casing volumes and collected groundwater samples from groundwater monitoring wells AMW-1, AMW-2 and AMW-3, and MW-3;
2. Maintained groundwater samples under chain-of-custody and transported them to a Department of Health Services (DHS) certified analytical laboratory for chemical analyses. Analyzed one groundwater sample from each monitoring well for total petroleum hydrocarbons as mineral spirits (TPH-ms) by analytical method SW8021B/8015B, for total petroleum hydrocarbons as diesel (TPH-d) and total petroleum hydrocarbons as motor oil (TPH-mo) by analytical method 8015B without silica gel cleanup, for TPH as gasoline (TPH-g) and VOCs by analytical method SW8260B (full scan) and for polynuclear aromatic hydrocarbons (PNAs/PAHs) by analytical method SW8270C-SIM;
3. Prepared a written report describing the sampling event, laboratory data, investigation findings, conclusions and recommendations.

IV. FIELD ACTIVITIES

On December 21, 2016, AllWest visited the subject site to conduct a semi-annual groundwater monitoring event, which included lowering an electric oil/water interface sounding probe into all four well casings to measure the depth to the water and thickness of any potential floating free product (LNAPL) to the nearest 0.01 feet below TOC. Depth to groundwater ranged from 6.27 feet below TOC in MW-3 to 7.34 feet below TOC in AMW-2. No free product layer (LNAPL) was measured, detected or observed in any of monitoring wells MW-3, AMW-1, AMW-2 or AMW-3. No product sheen or odor was observed in wells AMW-1, AMW-2 or AMW-3. A thin product sheen and slight odor was observed in purged groundwater from monitoring well MW-3. Depth to groundwater and free product thickness data are included in Table 2.

During this monitoring event, AllWest removed the passive skimmer device from MW-3 prior to sampling activities and did not re-install it, due to lack of a measurable layer of LNAPL present at the groundwater surface, or observed in the 0.125-liter skimmer canister.

After all initial measurements were completed and recorded, a minimum of three well casing volumes of groundwater were purged with a new, disposable polyethylene bailer. Groundwater characteristics, temperature, pH and conductivity were monitored at each well volume interval. Purging was continued until groundwater parameters stabilized to within 10%.

Groundwater sampling was conducted after water levels recovered to at least 80% of initial level, recorded prior to purging. Groundwater samples were collected from each well with new, disposable polyethylene bailers. Upon bailer retrieval, the water was transferred to appropriate sample bottles furnished by the

analytical laboratory. Four 40-milliliter (ml) volatile organic analysis (VOA) glass vials preserved with hydrochloric acid (HCl) were used for TPH-g, TPH-ms, and VOC analysis. Each sample for TPH-d and TPH-mo analysis was collected in one 1-liter amber glass bottle preserved with HCl solution. Each sample for PNAs/PAHs analysis was collected in one 1-liter unpreserved amber glass bottle. All sample bottles for VOA had Teflon lined septum/caps and were filled so that no headspace was present. The sample bottles were then labeled and placed in an iced cooler for transport under chain-of-custody control to the analytical laboratory.

To help prevent cross-contamination, all groundwater sampling equipment that contacted groundwater was decontaminated prior to sampling. To minimize the possibility of cross-contamination, a new disposable bailer was used to collect each groundwater sample. Well purge water was temporarily stored at the property in a 55-gallon drum, awaiting test results to determine the proper disposal method.

Standard groundwater sampling procedures are included in Appendix A. Groundwater purging and sampling field logs are included in Appendix B.

V. QUALITY ASSURANCE/QUALITY CONTROL PROGRAM

A. Sample Preservation, Storage and Handling

To prevent the loss of constituents of interest, all groundwater samples were contained in properly preserved laboratory-supplied containers and preserved by storing in an ice chest cooled to 4°C with crushed ice immediately after their collection and during transportation to the laboratory. Samples were stored within the cooler in separate zip-lock plastic bags to avoid cross-contamination.

B. Chain-Of-Custody Program

All samples collected for this project were transported under chain-of-custody protocol. The chain-of-custody program allows for the tracing of possession and handling of individual samples from the time of field collection through laboratory analysis. The document includes the signature of the collector, date and time of collection, sample number, number and type of sample containers including preservatives, parameters requested for analysis, signatures of persons and inclusive dates involved in the chain of possession. Upon delivery to the laboratory the document also includes the name of the person receiving the samples, and date and time samples were received. Copies of chain-of-custody documentation are included in Appendix C.

VI. ANALYTICAL METHODS

Groundwater samples from the monitoring wells AMW-1, AMW-2, AMW-3 and MW-3 were analyzed for TPH-ms by analytical method SW8021B/8015Bm, for TPH-d and TPH-mo by analytical method SW8015B without silica gel cleanup, for TPH-g and VOCs by analytical method 8260B, and for PNAs/PAHs by analytical method SW8270C-SIM. TPH-d and TPH-mo analysis were conducted without silica gel cleanup for the first time during this monitoring event per the directive of ACEH and guidelines in the RWQCB *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Interim Final, February 2016 and *Environmental Screening Levels Frequently Asked Questions*, dated February 24, 2016.

All samples were analyzed by a State of California certified independent analytical laboratory, McCampbell Analytical, Inc., of Pittsburg, California. All samples were analyzed on standard five-day turn-around time. Chain of custody documents and laboratory analytical reports are included in Appendix C.

VII. ASSESSMENT FINDINGS

A. Groundwater Observations

No floating free product (LNAPL) was measured in monitoring well MW-3 or any of the other wells during the current monitoring event.

On December 21, 2016, depths to groundwater ranged from 6.27 feet below TOC in MW-3 to 7.34 feet below TOC in AMW-2. The well with the highest groundwater elevation was MW-3 at 19.28 feet above NAVD 1988 datum; the well with the lowest groundwater elevation was AMW-1 at 15.29 feet above NAVD 1988 datum. These are the highest groundwater elevations ever recorded at the subject site.

The wellhead elevation data and depth to water measurements were used to calculate local groundwater flow direction and gradient. The direction of groundwater flow was to the southwest at a gradient of 0.015 feet per foot. A groundwater elevation contour map is included as Figure 3. Monitoring well construction details are presented on Table 1. Gauging data is provided on Table 2. Groundwater elevation graphs are included in Appendix D.

B. Groundwater Analytical Data

TPH-g was detected in groundwater samples from AMW-3 and MW-3 at a maximum concentration of 9,900 micrograms per liter ($\mu\text{g/L}$) in monitoring well MW-3. TPH-ms was not detected any groundwater samples collected; however, the method detection limits for the sample collected from MW-3 were at an elevated concentration of 2,500 $\mu\text{g/L}$.

TPH-d with gasoline range compounds characterized as significant was detected in groundwater samples from AMW-3 and MW-3 at a maximum concentration of 2,600 $\mu\text{g/L}$ in the groundwater sample from MW-3.

Benzene was detected in AMW-3 and MW-3 at a maximum concentration of 1,400 $\mu\text{g/L}$ in the groundwater sample collected from monitoring well MW-3. Toluene was detected in MW-3 at a concentration of 920 $\mu\text{g/L}$ in MW-3. Ethylbenzene was detected in MW-3 and AMW-3 at a maximum concentration of 400 $\mu\text{g/L}$ in MW-3. Total xylenes were detected in MW-3 at a concentration of 1,600 $\mu\text{g/L}$ in MW-3.

MTBE was detected in AMW-2 and MW-3 at a maximum concentration of 1,100 $\mu\text{g/L}$ in the groundwater sample from MW-3.

Other VOCs detected in groundwater samples collected from the four site wells, and the maximum concentration of each VOC detected during this investigation, are listed below:

VOC Detected in Site Groundwater December 21, 2016	Maximum Concentration ($\mu\text{g/L}$)
Tertiary butyl alcohol (TBA)	470
1,1-Dichloroethane	4.4
1,1-Dichloroethene	120
Isopropylbenzene	2.6
Naphthalene (EPA Method 8260B)	200
n-Propyl benzene	69
1,1,1-Trichloroethane	3.7
Trichloroethene (TCE)	21
1,2,4-trimethylbenzene	550
1,3,5-trimethylbenzene	170

Groundwater analytical results for total petroleum hydrocarbons and VOCs are summarized in Tables 3 and 4, and on Figures 4, 5 and 6.

PNAs/PAHs detected in groundwater samples collected from wells AMW-2, AMW-3 and MW-3, and the maximum concentration of each PNA/PAH detected during this investigation, are listed below:

PNAs/PAHs Detected in Site Groundwater December 21, 2016	Maximum Concentration (µg/L)
1-Methylnaphthalene	69
2-Methylnaphthalene	120
Naphthalene (EPA Method 8270C)	250
Phenanthrene	0.92

Note that naphthalene is included in both the VOC and PNA/PAH tables; the difference in concentrations results from the two different analytical methods used (EPA Methods 8260B versus 8270C). PNA/PAH groundwater analytical results are summarized in Table 4. No other COCs were detected at or above laboratory reporting limits in any groundwater samples analyzed during this investigation. Laboratory analytical reports and chain of custody documents are included in Appendix C.

C. Laboratory QA/QC

A review of groundwater laboratory internal quality assurance/quality control (QA/QC) reports indicates the method blank and sample spike data for all analyses were within the laboratory recovery limits. The samples were also analyzed within the acceptable EPA holding times. The data from the McCampbell Laboratories are considered to be of good quality. Laboratory analytical reports and chain-of-custody records are included in this report as Appendix C.

VIII. DISCUSSION

Groundwater elevations increased an average of approximately 1.79 feet overall between the third quarter and fourth quarter 2016 monitoring events (Table 2). Groundwater elevations measured during the December 21, 2016 monitoring event were the highest ever recorded for the subject site. The groundwater flow direction to the southwest was consistent between the third quarter 2016 and fourth quarter 2016 monitoring events (Figure 3).

A thin layer of free LNAPL (free product) was measured in monitoring well MW-3 in the former UST vicinity during the July, 2016 monitoring event.

To assess if the identified contaminants of concern (COCs) in soil and groundwater pose a risk to human health and the environment, concentrations were compared with ESLs for commercial/industrial land use where groundwater is not a potential drinking water resource compiled by the SFRWQCB in *Tier 2 Interactive Tool, Table T2-1: Tier 2 ESL Input and Output, User's Guide: Derivation and Application of Environmental screening Levels (ESLs)*, Interim Final, February 2016, Revision 3 (May 23, 2016). Although the SFRWQCB *Basin Plan* has designated groundwater in the site vicinity as a potential drinking water resource (SFRWQCB, March 2015), groundwater in the subject site vicinity is not used as a drinking water resource. According to the City of Emeryville Public Works Department, a City ordinance prohibits use of groundwater for drinking water purposes due to widespread regional contamination, and no plans exist for future beneficial use.

AllWest notes that the commercial/industrial land use non-drinking water ESLs include screening levels for aquatic habitat goal and/or vapor intrusion human health risk. Because the subject site is located approximately 1,100 feet cross to up-gradient from the nearest surface water (the lagoon between Bay Street and Interstate 80), the petroleum hydrocarbon plume originating from the subject site is unlikely to impact aquatic habitat and the aquatic habitat ESLs are probably not relevant. Since the vapor intrusion ESLs are intended for evaluation of impact to indoor air quality, and all of the groundwater monitoring wells are located outside along 67th Street, these ESLs are not directly applicable to the COC concentrations detected in these monitoring wells.

TPH-g was detected in concentrations exceeding its non-drinking water ESL of 440 µg/L in the groundwater sample from MW-3 collected during this monitoring event, at a maximum concentration of 9,900 µg/L. TPH-ms was not detected; however, its elevated detection limit of 2,700 in MW-3 exceeds its non-drinking water ESL of 640 µg/L. TPH-d exceeded its non-drinking water ESL of 640 µg/L in one groundwater sample collected during this investigation at a concentration of 2,600 µg/L in monitoring well MW-3. Groundwater vapor intrusion ESLs have not been established for TPH-g, TPH-ms or TPH-d.

Benzene exceeded its non-drinking water and vapor intrusion ESL of 9.7 µg/L in one sample, at a concentration of 1,400 µg/L in MW-3. Toluene exceeded its non-drinking water ESL (for aquatic habitat goal) of 130 µg/L in one sample, at a concentration of 920 µg/L in MW-3. Toluene was not detected above the commercial/industrial vapor intrusion ESL of 30,000 µg/L. Ethylbenzene was detected at a concentration exceeding its non-drinking water ESL (for aquatic habitat goal) of 43 µg/L and exceeding its vapor intrusion ESL of 110 µg/L in the groundwater sample from monitoring well MW-3, at a concentration of 400 µg/L. Total xylenes were detected at concentrations exceeding its non-drinking water ESL (for aquatic habitat goal) of 100 µg/L in the monitoring well MW-3 groundwater sample, at a concentration of 1,600 µg/L. However, none of the groundwater samples exceeded the commercial/industrial vapor intrusion ESL for total xylenes of 11,000 µg/L.

MTBE was not detected above its non-drinking water ESL (for odor/nuisance) of 1,800 µg/L. MTBE did not exceed its vapor intrusion ESL of 11,000 µg/L in any of the groundwater samples collected. TBA was not detected at concentrations exceeding its non-drinking water ESL (for aquatic habitat goal) of 18,000 µg/L. Vapor intrusion ESLs have not been established for TBA.

2-Methylnaphthalene was detected at concentrations exceeding its non-drinking water ESL (for aquatic habitat goal) of 2.1 µg/L in the groundwater sample from MW-3 at a concentration of 120 µg/L. Vapor intrusion ESLs have not been established for 2-methylnaphthalene. Naphthalene was detected at a concentration exceeding its non-drinking water ESL (for aquatic habitat goal) of 24 µg/L in one groundwater sample (MW-3) at a concentration of 250 µg/L; naphthalene also exceeded its vapor intrusion ESL of 170 µg/L in the groundwater sample from monitoring well MW-3. No other COCs were detected in groundwater samples analyzed in this investigation at concentrations exceeding established applicable ESLs.

The down-gradient extent of the adsorbed and dissolved phase petroleum hydrocarbon plume in soil and groundwater is largely defined. It extends from the vicinity of the former McGrath Steel USTs to the west along 67th Street to the vicinity of monitoring well AMW-1 west of the former Clearprint Paper Company USTs. The highest COC concentrations occur in monitoring well MW-3 in the vicinity of the former McGrath Steel USTs. The cross-gradient extent of the adsorbed and dissolved phase hydrocarbon plume has not been fully defined, particularly south of 67th Street. Measurable free product thickness was not observed in well MW-3 during this semiannual monitoring event. A passive 0.125-liter passive product skimming device was removed from the monitoring well.

The chlorinated solvents, including 1,1-dichloroethene, and TCE, detected in monitoring wells AMW-1 and AMW-3, do not appear to have originated from the subject site, since they have not been detected in monitoring well MW-3 in the former UST vicinity, and there is no known historical use of these COCs at the subject property. However, detection limits for VOCs were elevated for MW-3 due to elevated concentrations of BTEX and MTBE, so an up-gradient source is possible.

Overall, concentrations of COCs detected in groundwater samples during this monitoring event, with the exception of benzene, have increased slightly or remained stable since the previous July 2016 sampling event. Benzene concentrations detected in samples from wells MW-3 and AMW-3 have declined since the July 2016 sampling event, and remained below the detection limit in wells AMW-1 and AMW-2. Groundwater analytical data and drinking water, non-drinking water and vapor intrusion ESLs are summarized in Tables 3 and 4. TPH-g, TPH-d and benzene isoconcentration maps are shown as Figures 4, 5 and 6, respectively. TPH-g, TPH-d, BTEX, MTBE and naphthalene concentration graphs are included in Appendix D.

IX. CONCLUSIONS

AllWest collected groundwater samples from four monitoring wells (AMW-1, AMW-2, AMW-3 and MW-3) at the subject site to further assess the extent of LNAPL, adsorbed and dissolved-phase petroleum hydrocarbons in groundwater in the vicinity of the former UST and dispenser source area at the subject property. No measurable free product thickness was observed in well MW-3 during this event. The passive 0.125-liter-capacity passive product skimming device was removed from monitoring well MW-3 as no recovered free product was observed in the skimmer canister.

TPH-g, TPH-ms, TPH-d, benzene, toluene, ethylbenzene, total xylenes, 2-methylnaphthalene, naphthalene, and 1,1-dichloroethene were identified in groundwater samples at concentrations exceeding corresponding and applicable SFRWQCB commercial/industrial non-drinking water ESL values. Benzene, ethylbenzene and naphthalene were identified in groundwater samples at concentrations exceeding corresponding and applicable SFRWQCB vapor intrusion ESL values.

AllWest concludes the down-gradient extent of the adsorbed and dissolved phase petroleum hydrocarbon plume in soil and groundwater is largely defined and extends from the vicinity of the former McGrath Steel USTs to the west along 67th Street to the vicinity of monitoring well AMW-1. The highest COC concentrations occur in monitoring well MW-3 in the vicinity of the former McGrath Steel USTs. The cross-gradient extent of the adsorbed and dissolved phase hydrocarbon plume south of 67th Street has not been fully defined. The chlorinated solvents, 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane and TCE, detected in monitoring wells AMW-1 and AMW-3, do not appear to have originated from the subject site. As shown in the Appendix D graphs, contaminant concentrations generally show stable and or diminishing concentrations over time.

X. LIMITATIONS

The work described in this report is performed in accordance with the Environmental Consulting Agreement between MCG Investments, LLC (Client) and AllWest Environmental, Inc, dated March 2015. AllWest has prepared this report for the exclusive use of the Client for this particular project and in accordance with generally accepted practices at the time of the work. No other warranties, certifications or representations, either expressed or implied are made as to the professional advice offered. The services provided for the Client were limited to their specific requirements; the limited scope allows for AllWest to form no more than an opinion of the actual site conditions. No matter how much research and sampling may be performed, the only way to know about the actual composition and condition of the subsurface of a site is through excavation.

The conclusions and recommendations contained in this report are made based on observed conditions existing at the site, laboratory test results of the submitted samples, and interpretation of a limited data set. It must be recognized that changes can occur in subsurface conditions due to site use or other reasons. Furthermore, the distribution of chemical concentrations in the subsurface can vary spatially and over time. The results of chemical analysis are valid as of the date and at the sampling location only. AllWest is not responsible for the accuracy of the test data from an independent laboratory, or for any analyte quantities falling below the recognized standard detection limits or for the method utilized by the independent laboratories.

Background information that AllWest has used in preparing this report, including but not limited to previous field measurements, analytical results, site plans, and other data, has been furnished to AllWest by the Client, its previous consultants, and/or third parties. AllWest has relied on this information as furnished. AllWest is not responsible for nor has it confirmed the accuracy of this information.

XI. REFERENCES

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AllWest, 2016a. *Data Gap Investigation Workplan Addendum Letter, Former McGrath Steel, 6655 Hollis Street and 1471 67th Street, Emeryville, CA 94608*. January 15.

TABLES

TABLE 1
Summary of Well Construction Details
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Well Number	Casing Diameter (inches)	Borehole Diameter (inches)	Total Depth of Well (feet bgs)	Top-Bottom of Screen (feet bgs)	Screen Length (feet)	Top-Bottom of Filter Pack (feet bgs)
MW-3	2	8	29	9-29	20	7-29.5
AMW-1	2	8	24	9-24	15	7-24
AMW-2	2	8	24	9-24	15	7-24
AMW-3	2	8	23	8-23	15	6-23

Notes:

bgs below ground surface

TABLE 2
Summary of Groundwater Elevation Data

Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Well Number	Date	TOC Elevation (feet msl)	Ground Surface Elevation (feet msl)	Depth to Groundwater (feet below TOC)	Product Thickness (feet)	Groundwater Surface Elevation (feet msl) ^a
MW-3	10/17/1995	22.73	23.17	9.42	0.00	13.31
MW-3	11/21/1995	22.73	23.17	9.85	0.00	12.88
MW-3	12/23/1995	22.73	23.17	8.52	0.00	14.21
MW-3	1/15/1996	22.73	23.17	8.72	0.00	14.01
MW-3	2/16/1996	22.73	23.17	7.08	0.04	15.68
MW-3	3/28/1996	22.73	23.17	6.78	0.03	15.97
MW-3	8/22/2005	22.73	23.17	12.36	0.00	10.37
MW-3	12/20/2005	22.73	23.17	10.82	0.00	11.91
MW-3	9/14/2011*	22.73	23.17	11.05	3	13.93
MW-3	7/30/2012	22.73	23.17	11.52	2.65	13.20
MW-3	8/2/2012	22.73	23.17	9.22	1.12	14.35
MW-3	12/18/2012	22.73	23.17	8.91	0.00	13.82
MW-3	3/27/2013	22.73	23.17	8.57	0.20	14.31
MW-3	6/27/2013	22.73	23.17	9.90	0.00	12.83
MW-3	8/7/2013	25.55	26.00	9.09	0.41	16.77
MW-3	11/6/2013	25.55	26.00	9.30	0.15	16.36
MW-3	12/31/2013*	25.55	26.00	9.16	0.01	16.40
MW-3	2/26/2014*	25.55	26.00	8.92	0.00	16.63
MW-3	3/19/2014	25.55	26.00	8.81	0.00	16.74
MW-3	4/22/2014	25.55	26.00	7.75	0.00	17.80
MW-3	5/29/2014	25.55	26.00	8.28	0.00	17.27
MW-3	6/20/2014	25.55	26.00	8.45	0.00	17.10
MW-3	1/30/2015	25.55	26.00	9.91	0.00	15.64
MW-3	2/28/2015	25.55	26.00	7.52	0.00	18.03
MW-3	7/14/2016	25.55	26.00	8.37	0.02	17.20
MW-3	12/21/2016	25.55	26.00	6.27	0.00	19.28
AMW-1	8/7/2013	22.09	22.54	9.54	0.00	12.55
AMW-1	11/6/2013	22.09	22.54	9.62	0.00	12.47
AMW-1	3/19/2014	22.09	22.54	7.73	0.00	14.36
AMW-1	6/20/2014	22.09	22.54	8.81	0.00	13.28
AMW-1	2/28/2015	22.09	22.54	7.61	0.00	14.48
AMW-1	7/14/2016	22.09	22.54	8.82	0.00	13.27

TABLE 2
Summary of Groundwater Elevation Data

Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Well Number	Date	TOC Elevation (feet msl)	Ground Surface Elevation (feet msl)	Depth to Groundwater (feet below TOC)	Product Thickness (feet)	Groundwater Surface Elevation (feet msl) ^a
AMW-1	12/21/2016	22.09	22.54	6.80	0.00	15.29
AMW-2	8/7/2013	23.43	23.73	9.96	0.00	13.47
AMW-2	11/6/2013	23.43	23.73	10.36	0.00	13.07
AMW-2	3/19/2014	23.43	23.73	8.50	0.00	14.93
AMW-2	6/20/2014	23.43	23.73	9.51	0.00	13.92
AMW-2	2/28/2015	23.43	23.73	6.30	0.00	17.13
AMW-2	7/14/2016	23.43	23.73	9.53	0.00	13.90
AMW-2	12/21/2016	23.43	23.73	7.34	0.00	16.09
AMW-3	8/7/2013	25.16	25.50	8.94	0.00	16.22
AMW-3	11/6/2013	25.16	25.50	9.34	0.00	15.82
AMW-3	3/19/2014	25.16	25.50	7.25	0.00	17.91
AMW-3	6/20/2014	25.16	25.50	8.37	0.00	16.79
AMW-3	2/28/2015	25.16	25.50	7.26	0.00	17.90
AMW-3	12/21/2016	25.16	25.50	6.41	0.00	18.75

Notes:

* Groundwater level measurement only, no sampling

TOC Top of Well Casing

feet msl Well MW-3 ground surface and TOC elevations surveyed to feet above mean sea level (msl) per City of Emeryville Datum, BM#5 by Triad/Holmes Associates October 17, 1995. All ground surface and TOC elevations re-surveyed to NAD 1983 and NAVD 1988 datum by Morrow Surveying, Inc., August 13, 2013.

a Groundwater elevation corrected for free product thickness, assuming density of 0.75 for gasoline.

NM Not Measured

TABLE 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons and VOCs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	TPH-g (µg/L)	TPH-ms (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Other VOCs (µg/L)
MW-3	10/17/1995	8,600	ND (<100)	220	NA	730	2,100	270	1,400	NA	NA
MW-3 qualifiers	8/22/2005	39,000	NA	2,500 L,Y	NA	3,100	3,800	1,100	4,700	7,200	Oxygenates - ND (varies)
MW-3 qualifiers	12/20/2005	54,000	NA	2,600 L,Y	NA	6,000	10,000	1,700	9,600	12,000	Oxygenates - ND (varies)
MW-3 qualifiers	8/2/2012	27,000	14,000 d1	33,000 e4, e2	680 e4, e2	1,300	3,800	400	4,500	630	400 (TBA) 110 (trans-1,3-dichloropropene) 250 (naphthalene) 1,100 (1,2,4-trimethylbenzene) 280 (1,3,5-trimethylbenzene) ND (others - varies)
MW-3 qualifiers	12/18/2012	21,000	12,000 d1	2,600 e4	ND (<250) e4	830	1,400	450	2,600	840	140 (naphthalene) 630 (1,2,4-trimethylbenzene) 78 (n-propyl benzene) 190 (1,3,5-trimethylbenzene) ND (others - varies)
MW-3 qualifiers	6/27/2013	18,000	NA	2,300 e4	NA	1,900	2,000	540	2,700	1,900	520 (TBA) 170 (naphthalene) 650 (1,2,4-trimethylbenzene) 84 (n-propyl benzene) 200 (1,3,5-trimethylbenzene) ND (others - varies)
MW-3 qualifiers	8/7/2013	130,000	54,000 d1, b6	24,000 e4, b6	NA	9,800 b6, c8	16,000 b6, c8	4,200 b6, c8	24,000 b6, c8	6,300 b6, c8	1,100 (naphthalene) 5,200 (1,2,4-trimethylbenzene) 620 (n-propyl benzene) 1,500 (1,3,5-trimethylbenzene) ND (others - varies) b6, c8
MW-3 qualifiers	11/6/2013	49,000	19,000 d1, b6	6,400 e4	NA	3,200 c8	4,900 c8	2,100 c8	11,000 c8	2,600 c8	700 (TBA) 140 (n-butyl benzene) 130 (isopropylbenzene) 690 (naphthalene) 460 (n-propyl benzene) 3,200 (1,2,4-trimethylbenzene) 1,000 (1,3,5-trimethylbenzene) ND (others - varies) c8
MW-3 qualifiers	3/19/2014	87,000	40,000 d1	11,000 e4	NA	5,500	7,200	2,000	11,000	4,400	1,500 (TBA) 480 (naphthalene) 340 (n-propyl benzene) 2,600 (1,2,4-trimethylbenzene) 780 (1,3,5-trimethylbenzene) ND (Others - varies)
MW-3 qualifiers	6/20/2014	54,000	26,000 d1	12,000 e4	NA	1,100	ND (<100)	ND (<100)	5,700	2,700	790 (TBA) 420 (naphthalene) 2,300 (1,2,4-trimethylbenzene) 610 (1,3,5-trimethylbenzene) ND (Other-varies)
MW-3 qualifiers	2/28/2015	84,000	21,000 d1	1,400 e4	NA	7,700	4,700	1,300	6,000	5,200	3,400 (TBA) 430 (naphthalene) 150 (n-propyl benzene) 1,400 (1,2,4-trimethylbenzene) 380 (1,3,5-trimethylbenzene) ND (Other-varies)

TABLE 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons and VOCs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	TPH-g (µg/L)	TPH-ms (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Other VOCs (µg/L)
MW-3 qualifiers	7/14/2016	7,900	2,700 d1	1,600 e4	NA	2,000	220	430	820	790	1,000 (t-Butyl alcohol) 170 (Naphthalene) 91 (n-propyl benzene) 280 (1,2,4-trimethylbenzene) 71 (1,3,5- trimethylbenzene)
MW-3 qualifiers	12/21/2016	9,900	ND (<2,500) d1,c4,S	2,600 e4,e2	ND (<250)	1,400	920	400	1,600	1,100	470 (t-Butyl alcohol) 200 (Naphthalene) 69 (n-Propyl benzene) 550 (1,2,4-trimethylbenzene) 170 (1,3,5- trimethylbenzene)
AMW-1 qualifiers	8/7/2013	ND (<50) b1	ND (<50) b1	110 e7, e1, b1	NA	ND (<1.2) b1	ND (<1.2) b1	ND (<1.2) b1	ND (<1.2) b1	2.5 b1	2.0 (1,1-dichloroethane) 39 (1,1-dichloroethane) 7.3 (TCE) ND (others, reporting limits vary) b1
AMW-1 qualifiers	11/6/2013	ND (<50) c4	ND (<50) c4	ND (<50)	NA	ND (<1.0) b1	ND (<1.0) b1	ND (<1.0) b1	ND (<1.0) b1	2.4	2.0 (1,1-dichloroethane) 50 (1,1-dichloroethane) 7.6 (TCE) ND (Other-varies)
AMW-1 qualifiers	3/19/2014	ND (<50) c2, b1	ND (<50) c2, b1	ND (<50) b1	NA	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	83 (1,1-dichloroethane) 7.2 (TCE) ND (Other-varies) b1
AMW-1 qualifiers	6/20/2014	ND (<50) c2, S	ND (<50) c2, S	ND (<100)	NA	ND (<1.0) b1	ND (<1.0) b1	ND (<1.0) b1	ND (<1.0) b1	2.3	1.8 (1,1-dichloroethane) 21 (1,1-dichloroethane) 5.4 (TCE), ND (Other-varies)
AMW-1	2/28/2015	ND (<50)	ND (<50)	ND (<50)	NA	ND (<0.50) b1	ND (<0.50) b1	ND (<0.50) b1	ND (<0.50) b1	2.1	2.1 (1,1-dichloroethane) 0.82 (1,2-DCA) 36 (1,1-dichloroethane) 0.59 (DIPE) 0.59 (PCE) 6.8 (TCE) ND (Other-varies)
AMW-1 qualifiers	7/14/2016	ND (<50)	ND (<50) c4,S	ND (<50)	NA	ND (<2.5) b1	ND (<2.5) b1	ND (<2.5) b1	2.8	ND (<2.5) b1	82 (t-Butyl alcohol) 2.9 (1,1-dichloroethane) 9.4 (Trichloroethane)
AMW-1 qualifiers	12/21/2016	ND (<50)	ND (<50) c11,S	ND (<50)	ND <250	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	ND (<5.0) b1	47 (t-Butyl alcohol) 45 (1,1-Dichloroethane) 6.9 (Trichloroethane)
AMW-2 qualifiers	8/7/2013	1,300	550 d1, b1	210 e4, e2, b1	NA	66 b1	74 b1	48 b1	280 b1	350 b1	22 (naphthalene) 46 (1,2,4-trimethylbenzene) 6.4 (n-propyl benzene) 29 (1,3,5-trimethylbenzene) ND (Other-varies) b1
AMW-2 qualifiers	11/6/2013	2,200	1,400 d1	330 e4	NA	130	16	120	270	330	7.2 (n-butyl benzene) 7.2 (isopropylbenzene) 54 (naphthalene) 23 (n-propyl benzene) 150 (1,2,4-trimethylbenzene) 49 (1,3,5-trimethylbenzene) ND (Other-varies)

TABLE 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons and VOCs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	TPH-g (µg/L)	TPH-ms (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Other VOCs (µg/L)
AMW-2 qualifiers	3/19/2014	550 d1	430 d1	190 e4	NA	30	ND (<5.0)	17	19	300	14 (naphthalene) 6.2 (n-propyl benzene) 38 (1,2,4-trimethylbenzene) 6.0 (1,3,5-trimethylbenzene) ND (Other-varies)
AMW-2 qualifiers	6/20/2014	370 d1	270 d1	110 e4	NA	22	ND (<5.0)	11	44	380	8.4 (naphthalene) 40 (1,2,4-trimethylbenzene) ND (Other-varies)
AMW-2 qualifiers	2/28/2015	120 d1	77 d1	ND (<50)	NA	5.1	ND (<5.0)	ND (<5.0)	5.1	260	7.4 (1,2,4-trimethylbenzene) ND (Other-varies)
AMW-2 qualifiers	7/14/2016	92	ND (<50) d1	ND (<50)	NA	ND (<12)	ND (<12)	ND (<12)	ND (<12)	360	ND (others, reporting limits vary)
AMW-2 qualifiers	12/21/2016	ND (<50)	ND (<50)	ND (<50)	ND (<250)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	270	ND (others, reporting limits vary)
AMW-3 qualifiers	8/7/2013	2,000 d1, b1	1,000 d1, b1	340 e4, e2, b1	NA	17	72	83	360	ND (<5.0)	7.4 (n-butyl benzene) 18 (naphthalene) 76 (1,2,4-trimethylbenzene) 5.2 (1,1-dichloroethane) 140 (1,1-dichloroethene) 18 (n-propyl benzene) 5.3 (1,1,1-trichloroethane) 20 (TCE) 39 (1,3,5-trimethylbenzene) ND (Other-varies)
AMW-3 qualifiers	11/6/2013	110 d1, c4	99 d1, c4	130 e4	NA	ND (<5.0) c8	ND (<5.0) c8	ND (<5.0) c8	ND (<5.0) c8	ND (<5.0) c8	5.4 (1,1-dichloroethane) 180 (1,1-dichloroethene) 6.1 (1,1,1-trichloroethane) 22 (TCE) ND (Other-varies) c8
AMW-3 qualifiers	3/19/2014	140 d1, c4	110 d1, c4	130 e4	NA	ND (<5.0)	ND (<5.0)	9.3	ND (<5.0)	ND (<5.0)	240 (1,1-dichloroethene) 9.0 (naphthalene) 19 (TCE) ND (Other-varies) c8
AMW-3 qualifiers	6/20/2014	320 d1, c4, S	250 d1, c4, S	220 e4	NA	13	ND (<2.5)	44	2.9	ND (<2.5)	3.4 (1,1-dichloroethane) 74 (1,1-dichloroethene) 12 (naphthalene) 7.5 (n-propyl benzene) 2.8 (1,1,1-trichloroethane) 9.9 (TCE) 6.8 (1,2,4-trimethylbenzene) ND (Other-varies)
AMW-3 qualifiers	2/28/2015	770 d1, c4	560 d1, c4	240 e4	NA	7.4	3.0	28	100	ND (<2.5)	4.4 (n-butyl benzene) 3.6 (1,1-dichloroethane) 77 (1,1-dichloroethene) 3.1 (isopropylbenzene) 16 (naphthalene) 8.9 (n-propyl benzene) 4.0 (1,1,1-trichloroethane) 13 (TCE) 57 (1,2,4-trimethylbenzene) 17 (1,3,5-trimethylbenzene) ND (Other-varies)

TABLE 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons and VOCs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	TPH-g (µg/L)	TPH-ms (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Other VOCs (µg/L)
AMW-3 qualifiers	7/14/2016	210	ND (<50) d1, c4,5	66 e4	NA	5.4	ND (<5.0)	12	24	ND (<5.0)	120 (1,1-Dichloroethene) 5.1 (Naphthalene) 6.3 (n-Propyl benzene) 18 (Trichloroethene) 10 (1,2,4-Trimethylbenzene)
AMW-3 qualifiers	12/21/2016	170	ND (<50) d1,c11,S	98 e4	ND (<250)	4.3	ND (<2.5)	7.9	ND (<2.5)	ND (<2.5)	4.4 (1,1-Dichloroethene) 120 (1,1-Dichloroethene) 2.6 (Isopropylbenzene) 6.3 (Naphthalene) 6.8 (n-Propyl benzene) 3.7 (1,1,1-Trichloroethane) 21 (Trichloroethene) 6.9 (1,2,4-Trimethylbenzene)
SB-26	2/4/2016	1,700	NA	NA	NA	310	300	85	370	170	7.9 (Naphthalene) 7.8 (n-Propyl benzene) 18 (TCE) 67 (1,2,4-Trimethylbenzene) 21 (1,3,5-Trimethylbenzene) ND (other, varies)
SFRWQCB Commercial/Industrial ESLs, drinking water*		100 ON	100 ON	100 ON	50,000 GC	1.0 DE	40 DE/ON	30 DE/ON	20 DE/ON	5.0 DE/ON	0.5 (1,2-DCA) DE 12 (TBA) DE 5.0 (PCE) DE 5.0 (TCE) DE 0.5 (1,3-dichloropropene) DE 0.17 (naphthalene) DE 5.0 (1,1-dichloroethane) DE 3.2 (1,1-dichloroethene) AHG 62 (1,1,1-trichloroethane) AHG NE or varies (others)
RWQCB Commercial/Industrial ESLs, non-drinking water*		440 AHG	640 AHG	640 AHG	50,000 GC	9.7 VI	130 AHG	43 AHG	100 AHG	1,800 ON	53 (1,2-DCA) VI 18,000 (TBA) AHG 8.9 (PCE) AHG 49 (TCE) VI 33 (1,3-dichloropropene) VI 24 (naphthalene) AHG 47 (1,1-dichloroethane) AHG 3.2 (1,1-dichloroethene) AHG 62 (1,1,1-trichloroethane) NE or vary (others)
RWQCB Commercial/Industrial ESLs, vapor intrusion		NE	NE	NE	NE	9.7 VI	30,000 VI	110 VI	11,000 VI	11,000 VI	53 (1,2-DCA) VI 26 (PCE) VI 49 (TCE) VI 33 (1,3-dichloropropene) VI 170 (Naphthalene) VI 180 (1,1-dichloroethane) VI 1,400 (1,1-dichloroethene) VI 42,000 (1,1,1-TCA) VI NE or vary (others)

Notes:

All results are reported in micrograms per liter (µg/L) except where noted.
1,2-DCA 1,2-dichloroethane, Analytical Method SW8260B
DIPE Diisopropyl ether, Analytical Method SW8260B
PCE Tetrachloroethene, Analytical Method SW8260B
TCE Trichloroethene, Analytical Method SW8260B

TABLE 3
Summary of Groundwater Analytical Data
Total Petroleum Hydrocarbons and VOCs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	TPH-g (µg/L)	TPH-ms (µg/L)	TPH-d (µg/L)	TPH-mo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Other VOCs (µg/L)
TPH-g	Total petroleum hydrocarbons as gasoline, Analytical Method SW8260B, except samples collected on 10/17/95, 8/22/05 and 12/20/05 Analytical Method SW8015Bm										
TPH-ms	Total petroleum hydrocarbons Mineral Spirits Range (C9-C12), Analytical Method SW8015Bm										
TPH-d	Total petroleum hydrocarbons as diesel, C10-C23, Analytical Method SW8015B with silica gel cleanup										
TPH-mo	Total petroleum hydrocarbons as motor oil, C18-C36, Analytical Method SW8015B with silica gel cleanup										
MTBE	Methyl tertiary butyl ether, Analytical Method SW8260B										
TBA	Tertiary butyl alcohol, Analytical Method SW8260B										
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes, Analytical Method SW8021B on 10/17/95 only; Analytical Method SW8260B on all other dates										
VOCs	Volatile organic compounds, Analytical Method SW8260B										
ND <100	Not detected at or above listed reporting limit										
NE	Not established										
NA	Not analyzed										

Laboratory Qualifiers:

- L - lighter hydrocarbons contributed to the quantitation
- Y - sample exhibits chromatographic pattern which does not resemble standard
- b1 - aqueous sample that contains greater than ~1 vol. % sediment
- b6 - lighter than water immiscible sheen/product is present
- c2 - low surrogate recovery caused by matrix interference.
- c4 - surrogate recovery outside of the control limits due to coelution with another peak(s)/cluttered chromatogram.
- c8 - sample pH is greater than 2
- d1 - weakly modified or unmodified gasoline is significant
- d2 - heavier gasoline range compounds are significant (aged gasoline?)
- e2 - diesel range compounds are significant; no recognizable pattern
- e4 - gasoline-range compounds are significant
- e7 - oil range compounds are significant
- S - spike recovery outside accepted recovery limits

ESL Qualifiers:

- DE - Direct Exposure
- ON - Odor/Nuisance
- GC - Gross Contamination
- VI - Vapor Intrusion
- AGH - Aquatic Habitat Goal

San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for groundwater where groundwater is a potential drinking water resource from Table GW-1 *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016).

San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for groundwater where groundwater is not a potential drinking water resource from Table GW-2, *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016). Concentrations exceeding this ESL are in bold.

San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion (Volatile Chemicals Only), commercial/industrial land use, fine-coarse mix from Table GW-3, *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016).

* The subject site lies within the City of Emeryville, where groundwater use as a drinking water resource is currently prohibited by City ordinance due to widespread regional contamination, and no plans exist for future beneficial groundwater use.

** Residential vapor intrusion ESL - commercial ESL for vapor intrusion not established, soil gas sampling recommended.

TABLE 4
Summary of Groundwater Analytical Data
PNAs/PAHs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Sample / Field Point Name	Date Sampled	Benzo (a) anthracene (µg/L)	Fluoranthene (µg/L)	1-Methylnaphthalene (µg/L)	2-Methylnaphthalene (µg/L)	Naphthalene (µg/L)	Phenanthrene (µg/L)	Pyrene (µg/L)	Other PNAs/PAHs (µg/L)
MW-3 qualifiers b6	8/7/2013	ND <50	ND <50	390	710	890	ND <50	ND <50	ND <50
MW-3 qualifiers c1	11/6/2013	ND <25	ND <25	330	620	1,100	ND <25	ND <25	ND <25
MW-3	3/19/2014	ND <10	ND <10	80	150	360	ND <10	ND <10	ND <10
MW-3	6/20/2014	ND <21	ND <21	110	210	410	ND <21	ND <21	ND <21
MW-3 qualifiers c1	2/28/2015	ND <25	ND <25	700	1,400	1,100	ND <25	ND <25	ND <25
MW-3	7/14/2016	ND (<5.0)	ND (<5.0)	66	110	250	ND (<5.0)	ND (<5.0)	ND (<5.0)
MW-3	12/21/2016	ND (<0.50)	ND (<0.50)	69	120	250	0.92	ND (<0.50)	ND (<0.50)
AMW-1 qualifiers b1	8/7/2013	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <0.5
AMW-1	11/6/2013	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50
AMW-1	3/19/2014	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50
AMW-1	6/20/2014	ND <2.1	ND <2.1	ND <11	ND <2.1	ND <2.1	ND <2.1	ND <2.1	ND <2.1
AMW-1	2/28/2015	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50
AMW-1	7/14/2016	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)
AMW-1	12/21/2016	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)
AMW-2 qualifiers b1	8/7/2013	ND <0.5	ND <0.5	1.5	1.6	7.7	ND <0.5	ND <0.5	ND <0.5
AMW-2	11/6/2013	ND <0.50	ND <0.50	5.4	9.2	26	ND <0.50	ND <0.50	ND <0.50
AMW-2	3/19/2014	ND <0.50	ND <0.50	2.3	2.6	13	ND <0.50	ND <0.50	ND <0.50
AMW-2	6/20/2014	ND <2.1	ND <2.1	ND <10	ND <2.1	2.1	ND <2.1	ND <2.1	ND <2.1
AMW-2	2/28/2015	ND <0.50	ND <0.50	ND <0.50	ND <0.50	0.96	ND <0.50	ND <0.50	ND <0.50
AMW-2	7/14/2016	ND (<0.50)	ND (<0.50)	0.56	0.77	3.1	ND (<0.50)	ND (<0.50)	ND (<0.50)
AMW-2	12/21/2016	ND (<0.50)	ND (<0.50)	ND (<0.50)	ND (<0.50)	0.50	ND (<0.50)	ND (<0.50)	ND (<0.50)
AMW-3 qualifiers b1	8/7/2013	ND <0.5	ND <0.5	3.2	ND <0.5	ND <0.5	ND <0.5	ND <0.5	ND <0.5
AMW-3	11/6/2013	ND <0.50	ND <0.50	1.5	2.6	7.5	ND <0.50	ND <0.50	ND <0.50
AMW-3	3/19/2014	ND <0.50	ND <0.50	2.7	2.8	6.3	ND <0.50	ND <0.50	ND <0.50
AMW-3	6/20/2014	ND <1.5	ND <1.5	ND <7.4	ND <1.5	2.3	ND <1.5	ND <1.5	ND <1.5
AMW-3	2/28/2015	ND <0.50	ND <0.50	4.4	6.7	9.4	ND <0.50	ND <0.50	ND <0.50
AMW-3	7/14/2016	ND (<0.50)	ND (<0.50)	0.96	0.95	4.5	ND (<0.50)	ND (<0.50)	ND (<0.50)
AMW-3	12/21/2016	ND (<0.50)	ND (<0.50)	0.69	ND (<0.50)	2.6	ND (<0.50)	ND (<0.50)	ND (<0.50)
RWQCB Commercial/Industrial ESLs, drinking water*		0.027 AHG	8.0 AHG	NE	2.1 AHG	0.17 DE	4.6 AHG	2.0 AHG	Vary
RWQCB Commercial/Industrial ESLs, non-drinking water*		0.027 AHG	8.0 AHG	NE	2.1 AHG	24 AHG	4.6 AHG	2.0 AHG	Vary
RWQCB Commercial/Industrial ESLs, vapor intrusion		NE	NE	NE	NE	170 VI	NE	NE	Vary

TABLE 4
Summary of Groundwater Analytical Data
PNA/PAHs
Former McGrath Steel
6655 Hollis Street
Emeryville, California
AllWest Project No. 16040.28

Notes: All results are reported in micrograms per liter ($\mu\text{g/L}$) except where noted.
All samples analyzed by McCampbell Analytical, Inc., Pittsburg, California
PNAs/PAHs = Polynuclear Aromatic Hydrocarbons/Polycyclic Aromatic Hydrocarbons by analytical method SW8270C-SIM
ND <0.50 - Not detected at or above listed reporting limit
NE - Not established

Laboratory Qualifiers:

b1 - Aqueous sample that contains greater than ~1 vol. % sediment
b6 - Lighter than water immiscible sheen/product is present.
c1 - surrogate recovery outside of the control limits due to the dilution of the sample.

ESL Qualifiers:

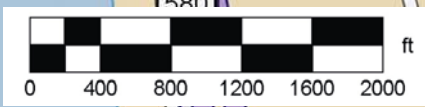
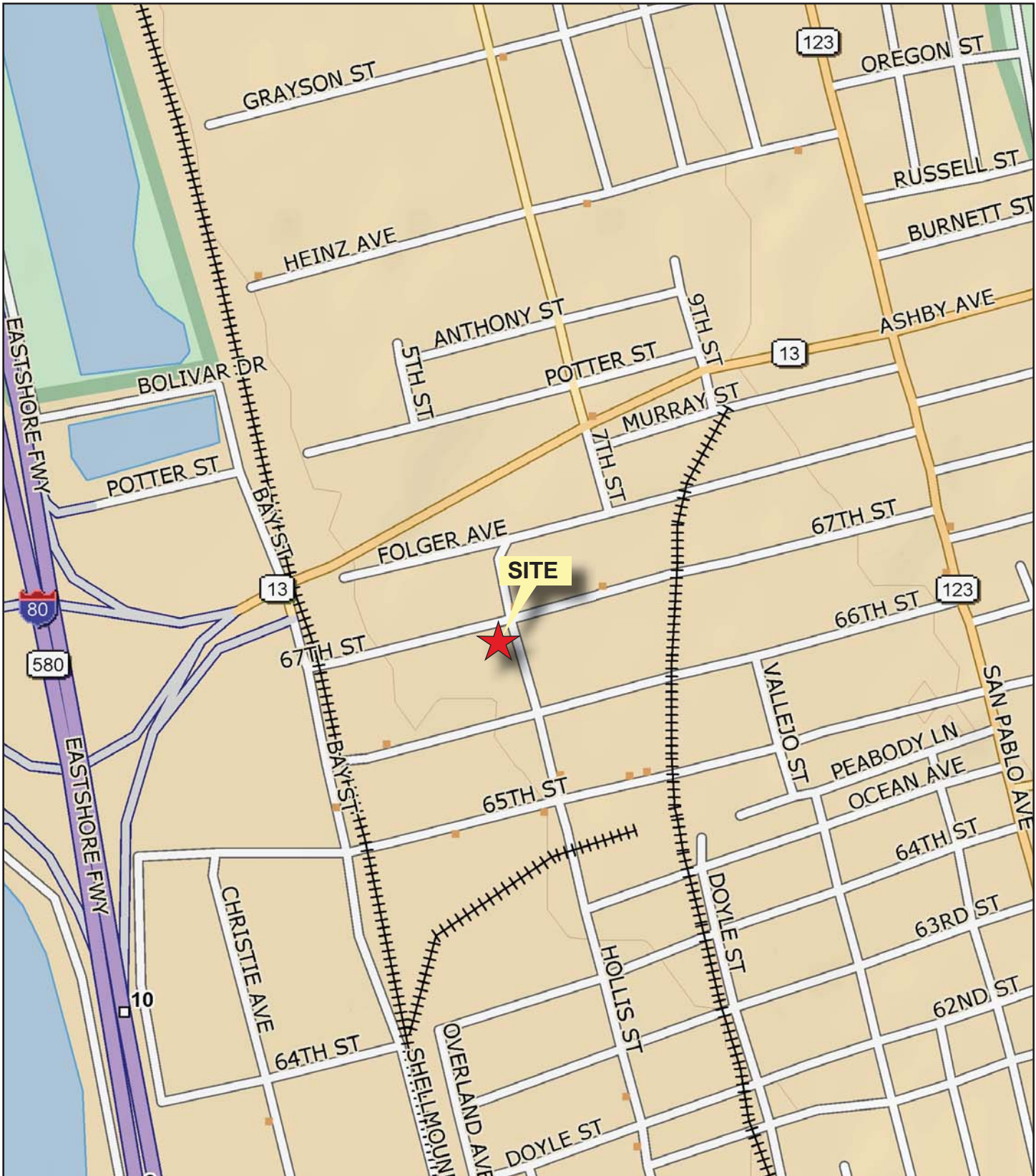
DE - Direct Exposure
ON - Odor/Nuisance
GC - Gross Contamination
VI - Vapor Intrusion
AGH - Aquatic Habitat Goal


San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for groundwater where groundwater is a potential drinking water resource from Table GW-1, *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016).

San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for groundwater where groundwater is not a potential drinking water resource from Table GW-2, *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016). Concentrations exceeding this ESL are in bold.


San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs) for evaluation of potential vapor intrusion, commercial/industrial land use, fine-coarse mix from Table GW-3, *User's Guide: Derivation and Application of Environmental Screening Levels*, RWQCB, Interim Final - February 2016, Revision 3 (May 23, 2016).

FIGURES





MN (14.0° E)

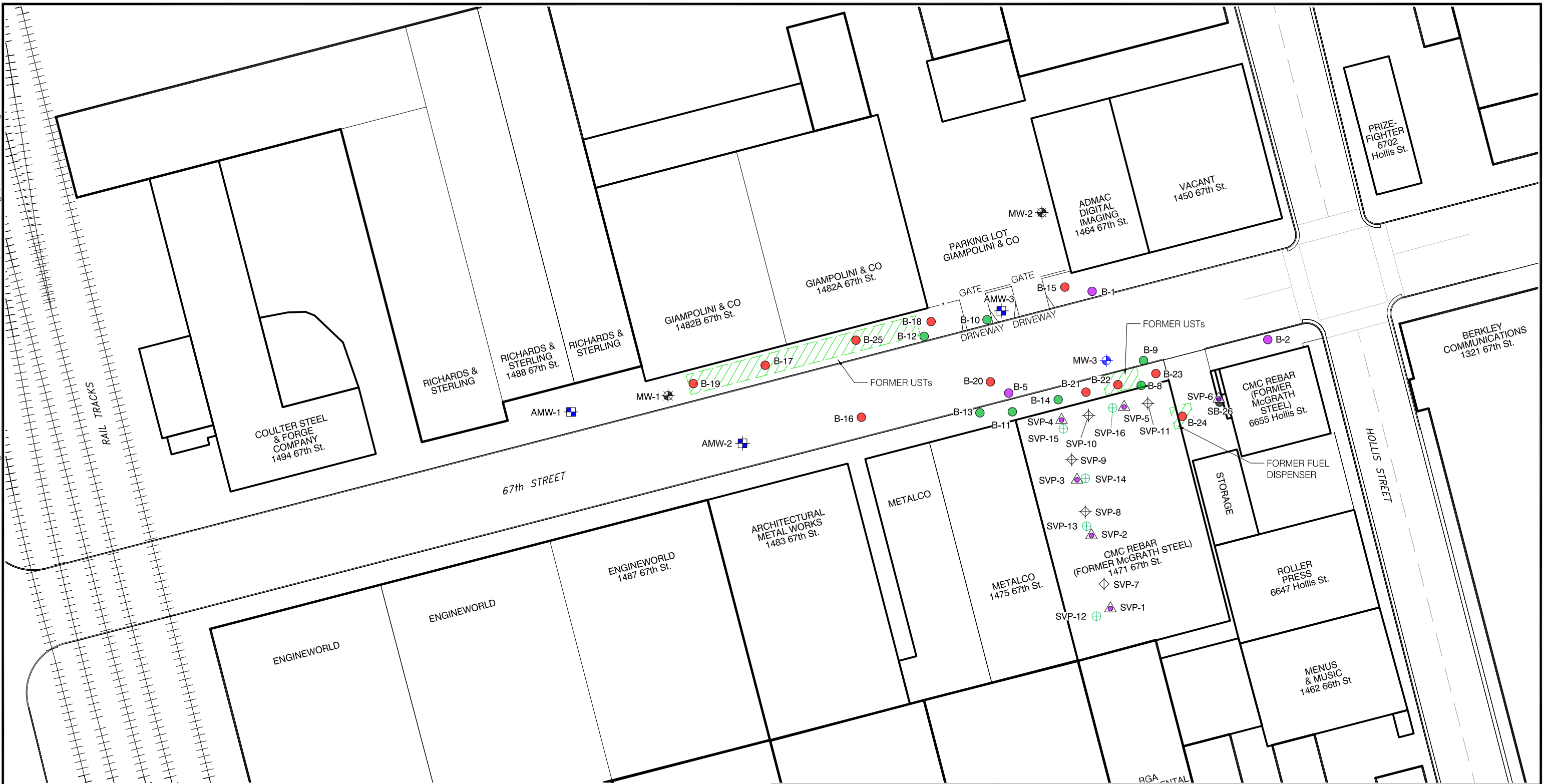


AllWest

VICINITY MAP
FIGURE 1
6655 HOLLIS STREET
EMERYVILLE, CALIFORNIA 94608
SOURCE: DELORME TOPO
PREPARED BY: D. CAMACHO
DATE: 8/25/16

PROJECT NO.
16040.28

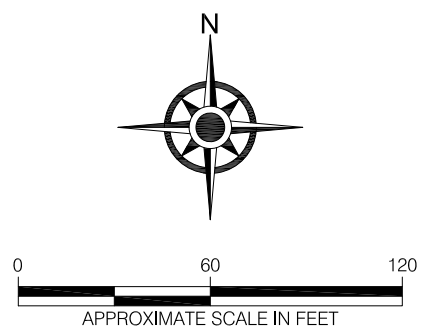
C:\Drawing Files\AllWest Environmental\16040.28\2016-Q4 GMM Report\16040.28 Fig 2. Site Plan With Boring & SVP Locations - 01/30/2017



LEGEND

- SVP-12 ⊕ Semi-Permanent Sub-Slab Vapor Probe (AllWest, May 2016)
- SVP-1 ⊕ Soil Boring-Vapor Probe (AllWest, February, 2016)
- SVP-7 ⊕ Temporary Sub-Slab Soil Vapor Probe (AllWest, February, 2016)
- MW-2 ⊕ Monitoring Well (Clearprint/ESC - Destroyed, 2005)
- MW-3 ⊕ Monitoring Well (Clearprint/ESC, 1995)
- AMW-3 ⊕ Monitoring Well (AllWest, 2013)
- B-5 ⊕ Soil Boring (Weiss Associates, 1998)

- B-14 ⊕ Soil Boring (Weiss Associates, 2005)
- B-25 ⊕ Soil Boring (Weiss Associates, January 16, 17, & 18, 2013)
- SB-26 ⊕ Soil Boring (AllWest, February 4, 2016)
- ▨ Former USTs, Fuel Dispensers (Removed 1994 & 1996)
- x - Fence



AllWest

PROJECT NO.
16040.28

FIGURE 2

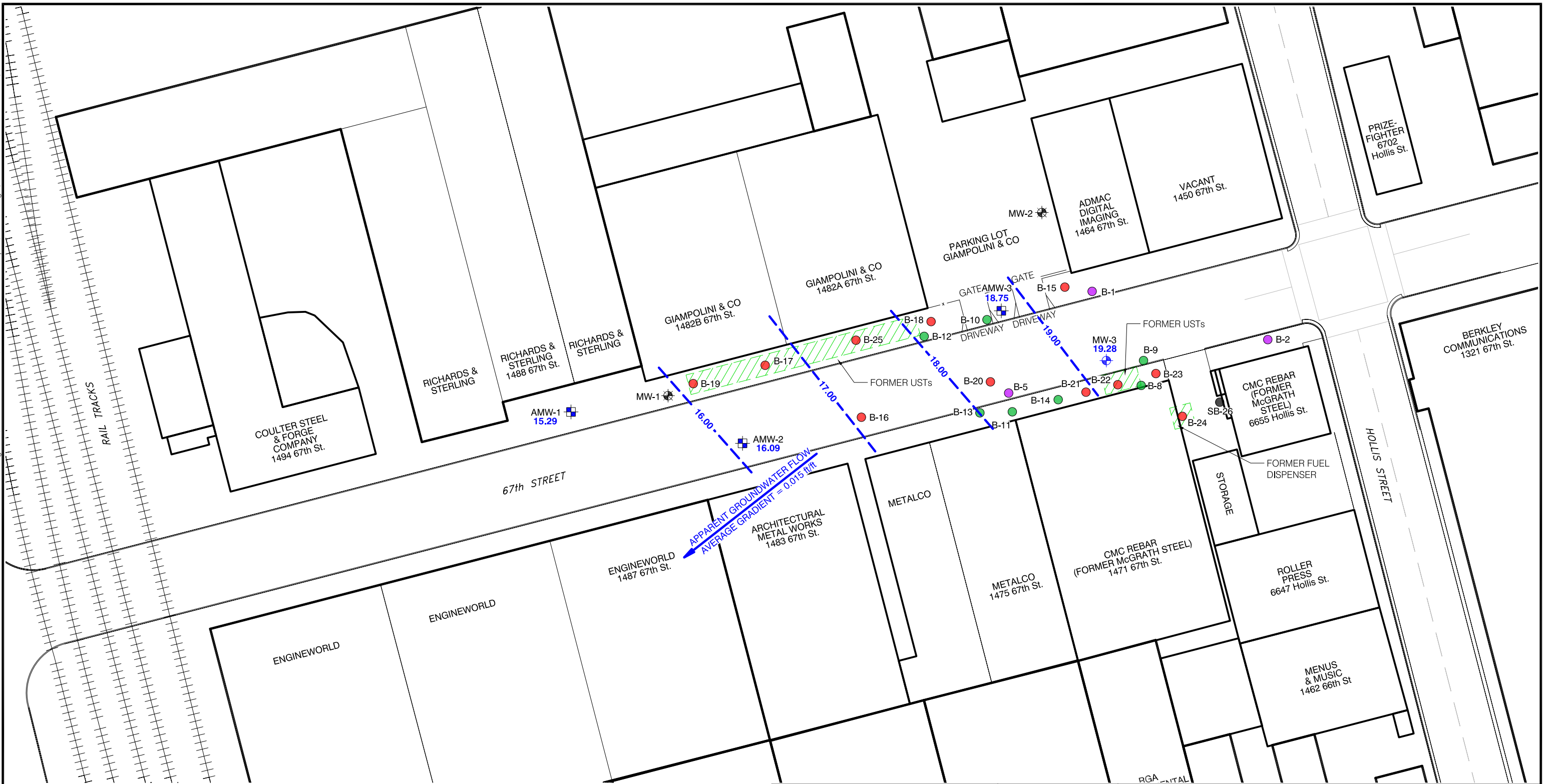
SITE PLAN WITH BORING, WELL AND SOIL VAPOR PROBE LOCATIONS

Former McGrath Steel
6655 Hollis Street, Emeryville, California

SOURCE: Morrow Surveying and Google Earth

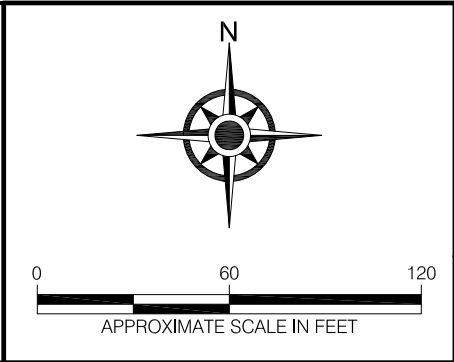
DRAWN BY: CM (1/30/2017)

C:\Drawing Files\AllWest Environmental\16040.28\2016-Q4 GWM Report\16040.28 Fig 3. GW Elevation Contours Dec 21, 2016 - 01/30/2017



LEGEND	
MW-2	Monitoring Well (Clearprint/ESC - Destroyed, 2005)
MW-3	Monitoring Well (Clearprint/ESC, 1995)
AMW-3	Monitoring Well (AllWest, 2013)
B-5	Soil Boring (Weiss Associates, 1998)
B-14	Soil Boring (Weiss Associates, 2005)
B-25	Soil Boring (Weiss Associates, January 16, 17, & 18, 2013)
SB-26	Soil Boring (AllWest, February 4, 2016)

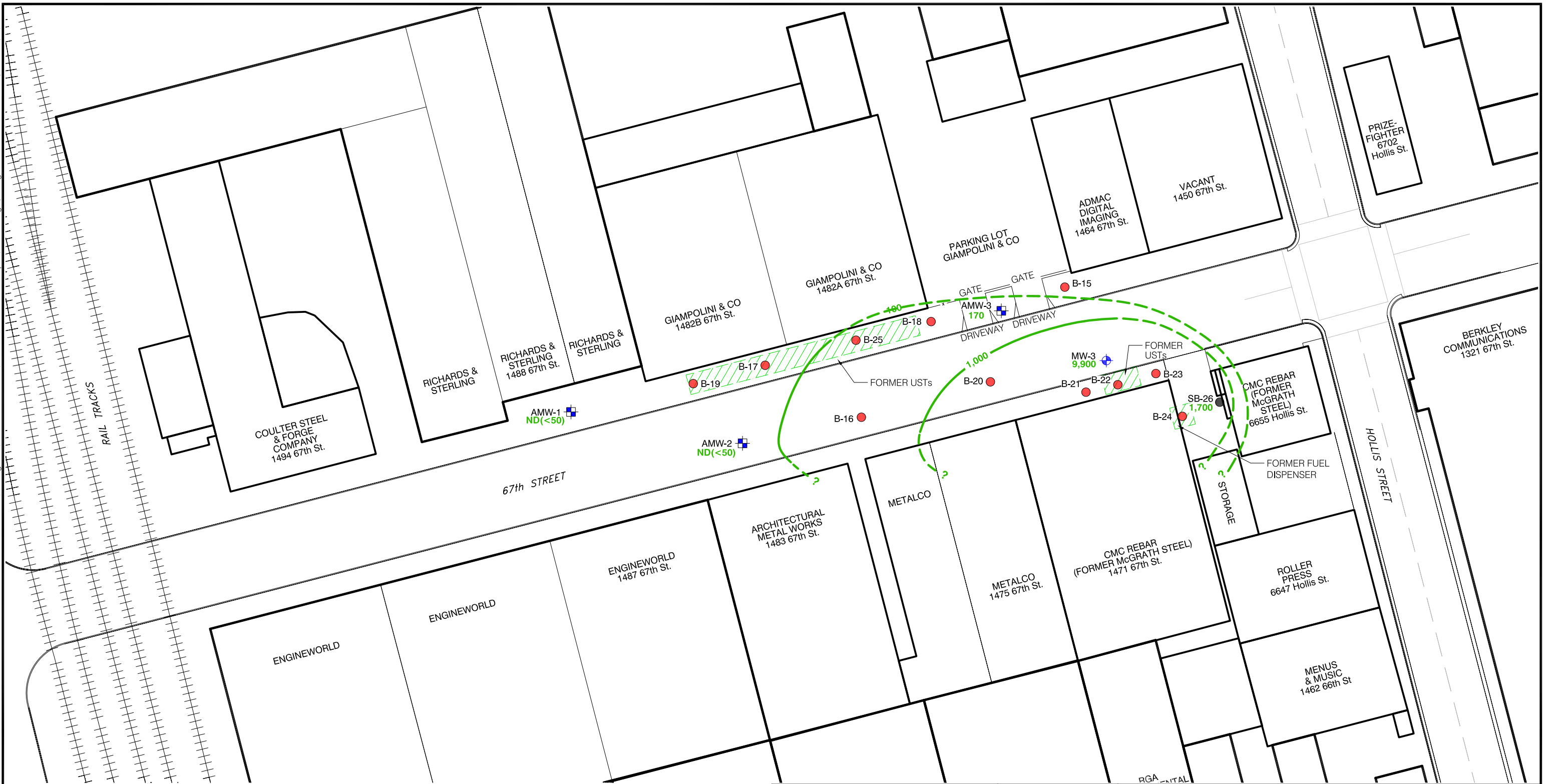
	Groundwater Flow Direction in Feet per Foot
	Former USTs, Fuel Dispensers (Removed 1994 & 1996)
	Fence



AllWest

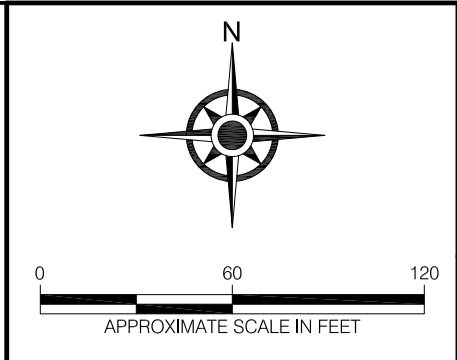
PROJECT NO.
16040.28

FIGURE 3 GROUNDWATER ELEVATION CONTOURS DECEMBER 21, 2016	
Former McGrath Steel	
6655 Hollis Street, Emeryville, California	
SOURCE: Morrow Surveying and Google Earth	
DRAWN BY: CM	(1/30/2017)



LEGEND	
MW-3 9,900	Monitoring Well (ESC, 1995) With TPH-g Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
AMW-3 170	Monitoring Well (AllWest, 2013) With TPH-g Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
B-25	Soil Boring (January 16, 17, & 18, 2013)
SB-26 1,700	Soil Boring; Grab Groundwater Sample, Collected 2/2016

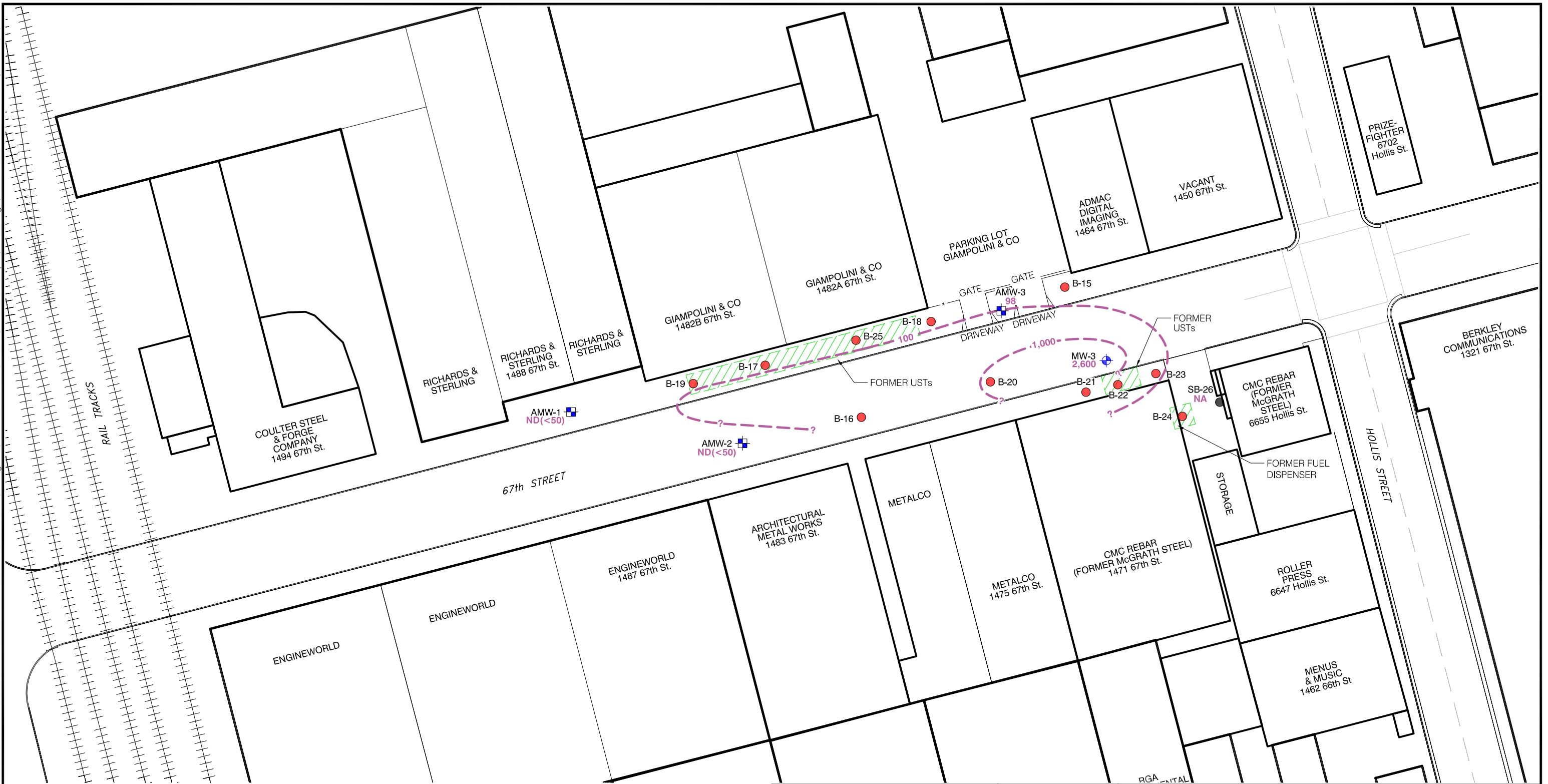
	Former USTs, Fuel Dispensers (Removed 1994 & 1996)
	Fence
Note: TPH-g - Total Petroleum Hydrocarbons as Gasoline	




AllWest

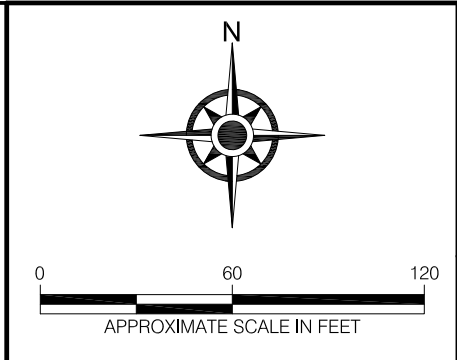
PROJECT NO.
16040.28

FIGURE 4 TPH-g ISOCONCENTRATION CONTOURS IN GROUNDWATER DECEMBER 21, 2016	
Former McGrath Steel 6655 Hollis Street, Emeryville, California	
SOURCE: Morrow Surveying and Google Earth	
DRAWN BY: CM	(1/30/2017)



LEGEND	
MW-3 2,600	Monitoring Well (ESC, 1995) With TPH-d Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
AMW-3 98	Monitoring Well (AllWest, 2013) With TPH-d Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
B-25	Soil Boring (January 16, 17, & 18, 2013)
SB-26 NA	Soil Boring; Grab Groundwater Sample, Collected 2/4/2016 Not Analyzed For TPH-d

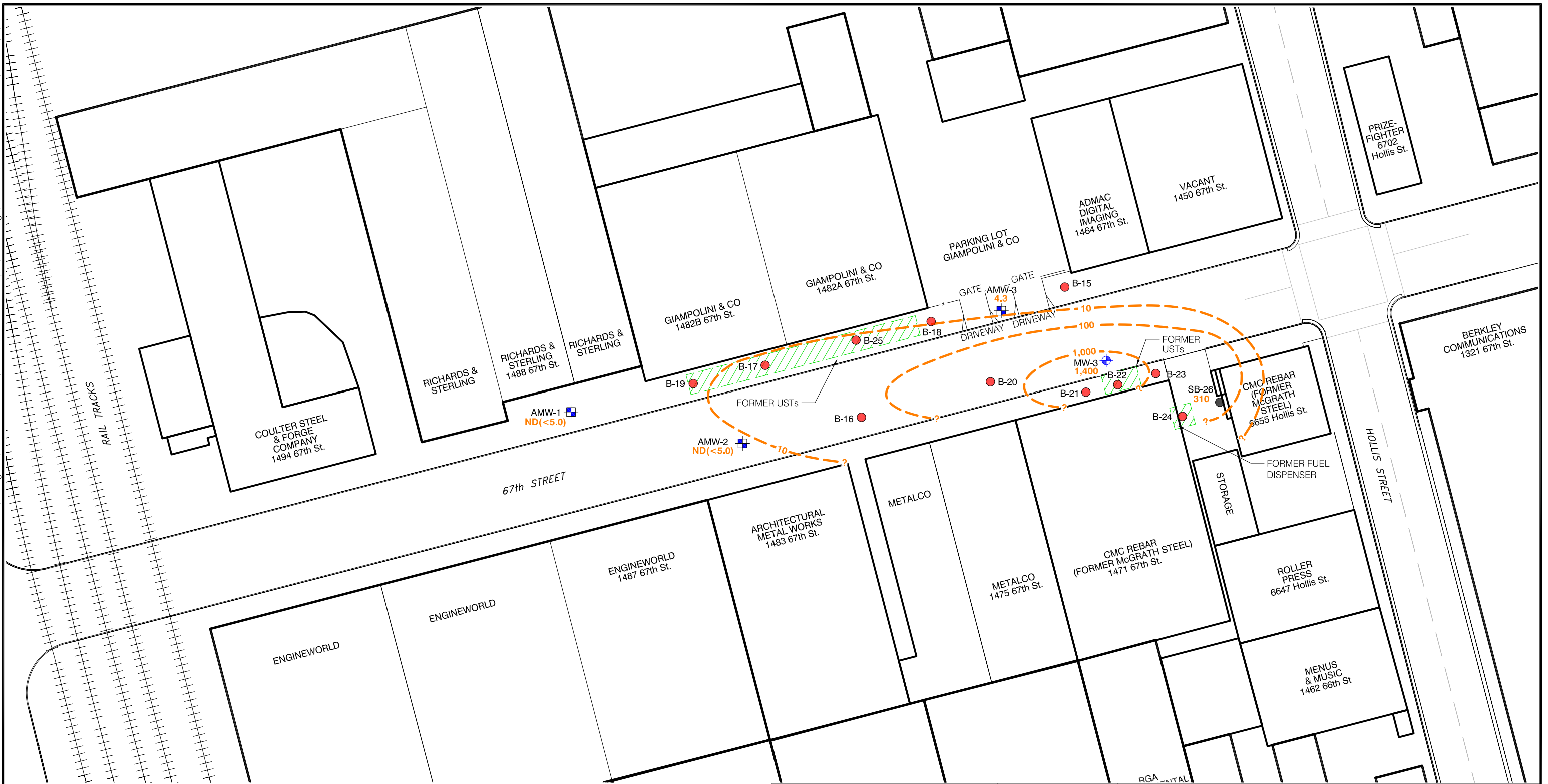
	Former USTs, Fuel Dispensers (Removed 1994 & 1996)
	Fence
Note: TPH-d - Total Petroleum Hydrocarbons as Diesel	




AllWest

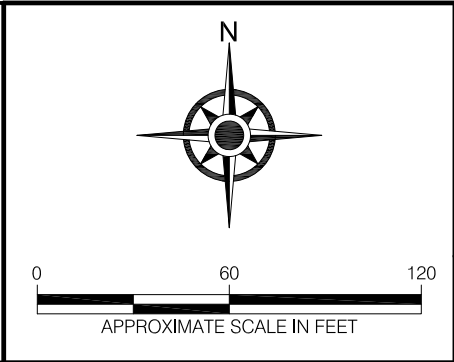
PROJECT NO.
16040.28

FIGURE 5 TPH-d ISOCONCENTRATION CONTOURS IN GROUNDWATER DECEMBER 21, 2016	
Former McGrath Steel 6655 Hollis Street, Emeryville, California	
SOURCE: Morrow Surveying and Google Earth	
DRAWN BY: CM	(1/30/2017)



LEGEND	
MW-3 1,400	Monitoring Well (ESC, 1995) With Benzene Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
AMW-3 4.3	Monitoring Well (AllWest, 2013) With Benzene Concentration in Micrograms per Liter ($\mu\text{g/L}$) - Dashed Where Inferred
B-25	Soil Boring (January 16, 17, & 18, 2013)
SB-26 310	Soil Boring; Grab Groundwater Sample, Collected 2/4/2016

	Former USTs, Fuel Dispensers (Removed 1994 & 1996)
	Fence
Note: TPH-d - Total Petroleum Hydrocarbons as Diesel	




AllWest

PROJECT NO.
16040.28

FIGURE 6 BENZENE ISOCONCENTRATION CONTOURS IN GROUNDWATER DECEMBER 21, 2016	
Former McGrath Steel	
6655 Hollis Street, Emeryville, California	
SOURCE: Morrow Surveying and Google Earth	
DRAWN BY: CM	(1/30/2017)

APPENDIX A



Groundwater Monitoring Well Development and Sampling

Groundwater monitoring wells will be developed with the combination of surging and pumping actions. The wells will be alternately surged with a surging block for five minutes and pumped with a submersible pump for two minutes. The physical characteristics of the groundwater, such as water color and clarity, pH, temperature, and conductivity, will be monitored during well development. Well development will be considered complete when the groundwater is relatively sediment-free and groundwater characteristic indicators are stabilized (consecutive readings within 10% of each other).

Groundwater will be sampled from the developed wells no sooner than 48 hours after well development to allow stabilization of groundwater conditions. Prior to groundwater sampling, a proper purging process will be performed at each well. The purpose of well purging is to remove fine grained materials from the well casing and to allow fresh and more representative water to recharge the well. Prior to well purging, an electric water depth sounder will be lowered into the well casing to measure the depth to the water to the nearest 0.01 feet. A clear poly bailer will then be lowered into the well casing and partially submerged. Upon retrieval of the clear bailer, the surface of the water column retained in the bailer will be carefully examined for any floating product or product sheen.

After all initial measurements are completed and recorded, the well will be purged by an electrical submersible pump or a bailer. A minimum of 3 well volumes of groundwater will be purged and groundwater characteristics (temperature, pH, and conductivity) monitored at each well volume interval. Purging is considered complete when indicators are stabilized (consecutive readings within 10% of each other) and the purged water is relatively free of sediments.

Groundwater sampling will be conducted after the water level has recovered to at least 80% of the initial level, recorded prior to purging. The groundwater sample will be collected by a disposable bailer. Upon retrieval of the bailer, the retained water will be carefully transferred to appropriate sample bottle furnished by the analytical laboratory. All sample bottles will have a Teflon lined septum/cap and be filled such that no headspace is present. Then the sample bottles will be labeled and immediately placed on ice to preserve the chemical characteristics of its content.

To prevent cross contamination, all groundwater sampling equipment that comes in contact with the groundwater will be thoroughly decontaminated prior to sampling. A disposable bailer will be used to collect the groundwater samples. Sample handling, storage, and transport procedures described in the following sections will be employed. All well development and purging water will be temporarily stored on-site in 55-gallon drums awaiting test results to determine the proper disposal method.

APPENDIX B



PURGE TABLE

WELL ID: MW-3
Page 1 of 1

SITE NAME: <u>Former McGrath Steel</u>	LOCATION: <u>6655 Rolles St., Emeryville</u>
PROJECT NO: <u>16184.28-16040.28</u>	DATE PURGED: <u>12/21/16</u>
PURGED/SAMPLED BY: <u>Leonard Niles</u>	DATE SAMPLED: <u>12/21/16</u>
TIME SAMPLED: <u>1525</u>	DEPTH TO BOTTOM (feet): <u>29.10</u>
DEPTH TO WATER (feet): <u>6.27 @ 1313, no free product</u>	WATER COLUMN HEIGHT (feet): <u>22.83</u>
CALCULATED PURGE (gallons): <u>10.96</u>	CASING VOLUME (gallons): <u>4.66 3.65</u>
ACTUAL PURGE (gallons): <u>11.0</u>	<u>x 3 volumes</u>

DEVELOPMENT _____ QUARTERLY _____ BIENNIAL X OTHER _____

SAMPLE TYPE: Groundwater X Surface Water _____ Other _____

CASING DIAMETER: 2" x 3 3" _____ 4" _____

Casing Volume (gallons per foot): (0.16) (0.38) (0.66)

(gallons per foot): 1.6" OD x 36" bailer ≈ 0.25 gal

FIELD MEASUREMENTS

VOLUME (gal)	TIME	TEMP (degrees C)	PH (units)	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTU)
0.25	1408	18.1 17.7	5.51	641	25.6	cloudy
3.75	1421	18.9	5.73	854	13.9	cloudy, sheen
7.5	1430	19.3	5.88	898	14.6	cloudy, sheen
11.0	1444	19.3 18.9	5.79	1230	17.0	cloudy, sheen

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER (feet): 10.33 Analyses: PH-g/ms/VOCs E8260, TPAH-d/mo E8015, PAHs E8270

80% RECHARGE: Y/N 10.84 SAMPLE TURBIDITY: cloudy, sheen

ODOR: yes SAMPLE BOTTLE/PRESERVATIVE: 3x VOCs w/HCl, 1x ILAW/HCl, 1x ILA NP
140 ml

PURGING EQUIPMENT

Centrifugal Pump
 Submersible Pump
 Peristaltic Pump
 Purge Pump
 Other: _____

Bailer (Teflon) PE
 Bailer (PVC or disposable)
 Bailer (Stainless Steel)

SAMPLING EQUIPMENT

Centrifugal Pump
 Submersible Pump
 Peristaltic Pump
 Purge Pump
 Other: _____

Bailer (Teflon) PE
 Bailer (PVC or disposable)
 Bailer (Stainless Steel)

Comments: No free product in skimmer when removed or any visible sheen. Slight HC odor. Fairly clean well bottom, little silt on probe. D/W = 17.60' after purging @ 14:46

SAMPLE TIME: 1525



PURGE TABLE

WELL ID: AMW-1
Page 1 of 1

SITE NAME: <u>Former McGrath Steel</u>	LOCATION: <u>6655 Hollis St, Emeryville</u>
PROJECT NO: <u>16184-28 16040-28</u>	DATE PURGED: <u>12/21/16</u>
PURGED/SAMPLED BY: <u>Leonard Niles</u>	DATE SAMPLED: <u>12/21/16</u>
TIME SAMPLED: <u>1645</u>	DEPTH TO BOTTOM (feet): <u>23.43</u>
DEPTH TO WATER (feet): <u>6.80 @ 12:55</u>	WATER COLUMN HEIGHT (feet): <u>16.63</u>
CALCULATED PURGE (gallons): <u>7.98</u>	CASING VOLUME (gallons): <u>2.66</u>
ACTUAL PURGE (gallons): <u>8.0</u>	<u>x 3 volumes</u>

DEVELOPMENT _____ QUARTERLY _____ BIANNUAL OTHER _____

SAMPLE TYPE: Groundwater Surface Water _____ Other _____

CASING DIAMETER: 2" x 3 3" _____ 4" _____
 Casing Volume (0.16) (0.38) (0.66)
 (gallons per foot): 1.6" OD x 36" bailer x 0.25 gal

FIELD MEASUREMENTS

VOLUME (gal)	TIME	TEMP (degrees C)	PH (units)	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTU)
<u>0.25</u>	<u>1622</u>	<u>20.8</u>	<u>6.28</u>	<u>1,116</u>	<u>40.0</u>	<u>slightly cloudy</u>
<u>2.75</u>	<u>1629</u>	<u>21.5</u>	<u>6.31</u>	<u>1,144</u>	<u>29.3</u>	<u>silty</u>
<u>5.5</u>	<u>1635</u>	<u>21.5</u>	<u>6.30</u>	<u>1,151</u>	<u>25.0</u>	<u>silty</u>
<u>8.0</u>	<u>1643</u>	<u>21.4</u>	<u>6.36</u>	<u>1,147</u>	<u>33.9</u>	<u>silty</u>

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER (feet): 6.82 Analyses: TPH-g/VOCs E8260, TPH-d/mg/ms E8015, PAHs E8270
 80% RECHARGE: Y/N 10.13 SAMPLE TURBIDITY: silty
 ODOR: none SAMPLE BOTTLE/PRESERVATIVE: 3x 40 ml VOA w/HCl, 1x ILA w/HCl, 1x ILA w/b P

PURGING EQUIPMENT

____ Centrifugal Pump
 ____ Submersible Pump
 ____ Peristaltic Pump
 ____ Purge Pump
 Other: _____

____ Bailer (Teflon) PE
 Bailer (PVC or disposable)
 ____ Bailer (Stainless Steel)

SAMPLING EQUIPMENT

____ Centrifugal Pump
 ____ Submersible Pump
 ____ Peristaltic Pump
 ____ Purge Pump
 Other: _____

____ Bailer (Teflon) PE
 Bailer (PVC or disposable)
 ____ Bailer (Stainless Steel)

Comments: Bottom silty



PURGE TABLE

WELL ID: AMW-2
Page 1 of 1

SITE NAME: Former McGrath Steel LOCATION: 6655 Hollis St., Emeryville
 PROJECT NO: 16184-28 16040-28 DATE PURGED: 12/21/16
 PURGED/SAMPLED BY: Leonard Nites / Sara Bloom DATE SAMPLED: 12/21/16
 TIME SAMPLED: 1558 DEPTH TO BOTTOM (feet): 23.85
 DEPTH TO WATER (feet): 7.34 @ 13:04 WATER COLUMN HEIGHT (feet): 16.51
 CALCULATED PURGE (gallons): 7.92 CASING VOLUME (gallons): 2.64
 ACTUAL PURGE (gallons): 8.0 x 3 volumes

DEVELOPMENT _____ QUARTERLY _____ BIANNUAL X OTHER _____
 SAMPLE TYPE: Groundwater X Surface Water _____ Other _____
 CASING DIAMETER: 2" X3 3" _____ 4" _____
 Casing Volume (gallons per foot): (0.16) (0.38) (0.66)
1.6" OD x 36" bailer ≈ 0.25 gal

FIELD MEASUREMENTS

VOLUME (gal)	TIME	TEMP (degrees C)	PH (units)	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTU)
0.25	1530	19.7	6.06	1,450	13.6	slightly cloudy
2.75	1536	20.2	6.07	1,575	15.7	cloudy
5.5	1541	20.1	6.08	1,629	13.6	cloudy
8.0	1549	20.0	6.09	1670	17.5	cloudy

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER (feet): 7.76 Analyses: TPH-g/VOCs E8260, TPH-d/mg/mo E8015, PAHs 8270
 80% RECHARGE: YN 10.64' SAMPLE TURBIDITY: slightly cloudy
 ODOR: none SAMPLE BOTTLE/PRESERVATIVE: 3x 40ml VOA w/HCl, 1x 1L Aw/HCl, 1x 1L ANP

PURGING EQUIPMENT

____ Centrifugal Pump
 ____ Submersible Pump
 ____ Peristaltic Pump
 ____ Purge Pump
 Other: _____
 ____ Bailer (Teflon) PE
X Bailer (PVC or disposable)
 ____ Bailer (Stainless Steel)

SAMPLING EQUIPMENT

____ Centrifugal Pump
 ____ Submersible Pump
 ____ Peristaltic Pump
 ____ Purge Pump
 Other: _____
 ____ Bailer (Teflon) PE
X Bailer (PVC or disposable)
 ____ Bailer (Stainless Steel)

Comments: silty bottom



PURGE TABLE

WELL ID: AMW-3
Page 1 of 1

SITE NAME: Former McGrath Steel LOCATION: 6655 Hollis St., Emeryville
 PROJECT NO: 16040.28 DATE PURGED: 12/21/16
 PURGED/SAMPLED BY: Leonard Niles DATE SAMPLED: 12/21/16
 TIME SAMPLED: 1757 DEPTH TO BOTTOM (feet): 21.38
 DEPTH TO WATER (feet): 6.41 @ 1309 WATER COLUMN HEIGHT (feet): 14.97
 CALCULATED PURGE (gallons): 7.19 CASING VOLUME (gallons): 2.40
 ACTUAL PURGE (gallons): 7.25 x 3 volumes

DEVELOPMENT Quarterly QUARTERLY BIENNIAL OTHER _____
 SAMPLE TYPE: Groundwater Surface Water _____ Other _____
 CASING DIAMETER: 2" x3 3" _____ 4" _____
 Casing Volume (0.16) (0.38) (0.66)
 (gallons per foot): 1.6" OD x 36" bailer ~ 0.25 gal

FIELD MEASUREMENTS

VOLUME (gal)	TIME	TEMP (degrees C)	PH (units)	CONDUCTIVITY (umhos/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTU)
0.25	1738	19.3	6.09	1151	18.0	slightly cloudy
2.5	1743	20.3	6.16	11057	13.6	cloudy
5.0	1747	20.3	6.21	11011	17.9	cloudy
7.25	1753	20.1	6.22	11044	17.5	cloudy

SAMPLE INFORMATION

SAMPLE DEPTH TO WATER (feet): 6.62 Analyses: TPH-g/ms, VOCs E8260, TPH-d/ms E8205, PAHs E8270
 80% RECHARGE: Y/N 9.40' SAMPLE TURBIDITY: cloudy
 ODOR: none SAMPLE BOTTLE/PRESERVATIVE: 3 x 40 ml VOA w/HCl, 1 x ILA w/HCl, 1 x ILA NP

PURGING EQUIPMENT

___ Centrifugal Pump
 ___ Submersible Pump
 ___ Peristaltic Pump
 ___ Purge Pump
 Other: _____
 Bailer (Teflon) PE
 Bailer (PVC or disposable)
 ___ Bailer (Stainless Steel)

SAMPLING EQUIPMENT

___ Centrifugal Pump
 ___ Submersible Pump
 ___ Peristaltic Pump
 ___ Purge Pump
 Other: _____
 Bailer (Teflon) PE
 Bailer (PVC or disposable)
 ___ Bailer (Stainless Steel)

Comments: clean bottom

APPENDIX C



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1612B78 **Amended:** 01/24/2017

Report Created for: All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110

Project Contact: Leonard Niles
Project P.O.:
Project Name: 16040.28; Hollis 4Q16GWM

Project Received: 12/22/2016

Analytical Report reviewed & approved for release on 01/03/2017 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: All West Environmental, Inc
Project: 16040.28; Hollis 4Q16GWM
WorkOrder: 1612B78

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: All West Environmental, Inc
Project: 16040.28; Hollis 4Q16GWM
WorkOrder: 1612B78

Analytical Qualifiers

S surrogate spike recovery outside accepted recovery limits
c4 surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
c11 The surrogate recovery is above the upper control limit. The target analyte(s) were Not Detected (ND); therefore, the data has been reported.
d1 weakly modified or unmodified gasoline is significant
e2 diesel range compounds are significant; no recognizable pattern
e4 gasoline range compounds are significant.



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001A	Water	12/21/2016 15:25	GC28	131789
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		500	50	12/27/2016 22:04
tert-Amyl methyl ether (TAME)	ND		25	50	12/27/2016 22:04
Benzene	1400		25	50	12/27/2016 22:04
Bromobenzene	ND		25	50	12/27/2016 22:04
Bromochloromethane	ND		25	50	12/27/2016 22:04
Bromodichloromethane	ND		25	50	12/27/2016 22:04
Bromoform	ND		25	50	12/27/2016 22:04
Bromomethane	ND		25	50	12/27/2016 22:04
2-Butanone (MEK)	ND		100	50	12/27/2016 22:04
t-Butyl alcohol (TBA)	470		100	50	12/27/2016 22:04
n-Butyl benzene	ND		25	50	12/27/2016 22:04
sec-Butyl benzene	ND		25	50	12/27/2016 22:04
tert-Butyl benzene	ND		25	50	12/27/2016 22:04
Carbon Disulfide	ND		25	50	12/27/2016 22:04
Carbon Tetrachloride	ND		25	50	12/27/2016 22:04
Chlorobenzene	ND		25	50	12/27/2016 22:04
Chloroethane	ND		25	50	12/27/2016 22:04
Chloroform	ND		25	50	12/27/2016 22:04
Chloromethane	ND		25	50	12/27/2016 22:04
2-Chlorotoluene	ND		25	50	12/27/2016 22:04
4-Chlorotoluene	ND		25	50	12/27/2016 22:04
Dibromochloromethane	ND		25	50	12/27/2016 22:04
1,2-Dibromo-3-chloropropane	ND		10	50	12/27/2016 22:04
1,2-Dibromoethane (EDB)	ND		25	50	12/27/2016 22:04
Dibromomethane	ND		25	50	12/27/2016 22:04
1,2-Dichlorobenzene	ND		25	50	12/27/2016 22:04
1,3-Dichlorobenzene	ND		25	50	12/27/2016 22:04
1,4-Dichlorobenzene	ND		25	50	12/27/2016 22:04
Dichlorodifluoromethane	ND		25	50	12/27/2016 22:04
1,1-Dichloroethane	ND		25	50	12/27/2016 22:04
1,2-Dichloroethane (1,2-DCA)	ND		25	50	12/27/2016 22:04
1,1-Dichloroethene	ND		25	50	12/27/2016 22:04
cis-1,2-Dichloroethene	ND		25	50	12/27/2016 22:04
trans-1,2-Dichloroethene	ND		25	50	12/27/2016 22:04
1,2-Dichloropropane	ND		25	50	12/27/2016 22:04
1,3-Dichloropropane	ND		25	50	12/27/2016 22:04
2,2-Dichloropropane	ND		25	50	12/27/2016 22:04

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001A	Water	12/21/2016 15:25	GC28	131789
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
1,1-Dichloropropene	ND		25	50	12/27/2016 22:04
cis-1,3-Dichloropropene	ND		25	50	12/27/2016 22:04
trans-1,3-Dichloropropene	ND		25	50	12/27/2016 22:04
Diisopropyl ether (DIPE)	ND		25	50	12/27/2016 22:04
Ethylbenzene	400		25	50	12/27/2016 22:04
Ethyl tert-butyl ether (ETBE)	ND		25	50	12/27/2016 22:04
Freon 113	ND		25	50	12/27/2016 22:04
Hexachlorobutadiene	ND		25	50	12/27/2016 22:04
Hexachloroethane	ND		25	50	12/27/2016 22:04
2-Hexanone	ND		25	50	12/27/2016 22:04
Isopropylbenzene	ND		25	50	12/27/2016 22:04
4-Isopropyl toluene	ND		25	50	12/27/2016 22:04
Methyl-t-butyl ether (MTBE)	1100		25	50	12/27/2016 22:04
Methylene chloride	ND		25	50	12/27/2016 22:04
4-Methyl-2-pentanone (MIBK)	ND		25	50	12/27/2016 22:04
Naphthalene	200		25	50	12/27/2016 22:04
n-Propyl benzene	69		25	50	12/27/2016 22:04
Styrene	ND		25	50	12/27/2016 22:04
1,1,1,2-Tetrachloroethane	ND		25	50	12/27/2016 22:04
1,1,2,2-Tetrachloroethane	ND		25	50	12/27/2016 22:04
Tetrachloroethene	ND		25	50	12/27/2016 22:04
Toluene	920		25	50	12/27/2016 22:04
1,2,3-Trichlorobenzene	ND		25	50	12/27/2016 22:04
1,2,4-Trichlorobenzene	ND		25	50	12/27/2016 22:04
1,1,1-Trichloroethane	ND		25	50	12/27/2016 22:04
1,1,2-Trichloroethane	ND		25	50	12/27/2016 22:04
Trichloroethene	ND		25	50	12/27/2016 22:04
Trichlorofluoromethane	ND		25	50	12/27/2016 22:04
1,2,3-Trichloropropane	ND		25	50	12/27/2016 22:04
1,2,4-Trimethylbenzene	550		25	50	12/27/2016 22:04
1,3,5-Trimethylbenzene	170		25	50	12/27/2016 22:04
Vinyl Chloride	ND		25	50	12/27/2016 22:04
Xylenes, Total	1600		25	50	12/27/2016 22:04

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001A	Water	12/21/2016 15:25	GC28	131789

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	104	70-130		12/27/2016 22:04
Toluene-d8	114	70-130		12/27/2016 22:04
4-BFB	122	70-130		12/27/2016 22:04

Analyst(s): KF



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002A	Water	12/21/2016 15:58	GC16	131789
Analytes	Result	RL	DF	Date Analyzed	
Acetone	ND	100	10	12/23/2016 20:57	
tert-Amyl methyl ether (TAME)	ND	5.0	10	12/23/2016 20:57	
Benzene	ND	5.0	10	12/23/2016 20:57	
Bromobenzene	ND	5.0	10	12/23/2016 20:57	
Bromochloromethane	ND	5.0	10	12/23/2016 20:57	
Bromodichloromethane	ND	5.0	10	12/23/2016 20:57	
Bromoform	ND	5.0	10	12/23/2016 20:57	
Bromomethane	ND	5.0	10	12/23/2016 20:57	
2-Butanone (MEK)	ND	20	10	12/23/2016 20:57	
t-Butyl alcohol (TBA)	ND	20	10	12/23/2016 20:57	
n-Butyl benzene	ND	5.0	10	12/23/2016 20:57	
sec-Butyl benzene	ND	5.0	10	12/23/2016 20:57	
tert-Butyl benzene	ND	5.0	10	12/23/2016 20:57	
Carbon Disulfide	ND	5.0	10	12/23/2016 20:57	
Carbon Tetrachloride	ND	5.0	10	12/23/2016 20:57	
Chlorobenzene	ND	5.0	10	12/23/2016 20:57	
Chloroethane	ND	5.0	10	12/23/2016 20:57	
Chloroform	ND	5.0	10	12/23/2016 20:57	
Chloromethane	ND	5.0	10	12/23/2016 20:57	
2-Chlorotoluene	ND	5.0	10	12/23/2016 20:57	
4-Chlorotoluene	ND	5.0	10	12/23/2016 20:57	
Dibromochloromethane	ND	5.0	10	12/23/2016 20:57	
1,2-Dibromo-3-chloropropane	ND	2.0	10	12/23/2016 20:57	
1,2-Dibromoethane (EDB)	ND	5.0	10	12/23/2016 20:57	
Dibromomethane	ND	5.0	10	12/23/2016 20:57	
1,2-Dichlorobenzene	ND	5.0	10	12/23/2016 20:57	
1,3-Dichlorobenzene	ND	5.0	10	12/23/2016 20:57	
1,4-Dichlorobenzene	ND	5.0	10	12/23/2016 20:57	
Dichlorodifluoromethane	ND	5.0	10	12/23/2016 20:57	
1,1-Dichloroethane	ND	5.0	10	12/23/2016 20:57	
1,2-Dichloroethane (1,2-DCA)	ND	5.0	10	12/23/2016 20:57	
1,1-Dichloroethene	ND	5.0	10	12/23/2016 20:57	
cis-1,2-Dichloroethene	ND	5.0	10	12/23/2016 20:57	
trans-1,2-Dichloroethene	ND	5.0	10	12/23/2016 20:57	
1,2-Dichloropropane	ND	5.0	10	12/23/2016 20:57	
1,3-Dichloropropane	ND	5.0	10	12/23/2016 20:57	
2,2-Dichloropropane	ND	5.0	10	12/23/2016 20:57	

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002A	Water	12/21/2016 15:58	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	5.0	10	12/23/2016 20:57
cis-1,3-Dichloropropene	ND	5.0	10	12/23/2016 20:57
trans-1,3-Dichloropropene	ND	5.0	10	12/23/2016 20:57
Diisopropyl ether (DIPE)	ND	5.0	10	12/23/2016 20:57
Ethylbenzene	ND	5.0	10	12/23/2016 20:57
Ethyl tert-butyl ether (ETBE)	ND	5.0	10	12/23/2016 20:57
Freon 113	ND	5.0	10	12/23/2016 20:57
Hexachlorobutadiene	ND	5.0	10	12/23/2016 20:57
Hexachloroethane	ND	5.0	10	12/23/2016 20:57
2-Hexanone	ND	5.0	10	12/23/2016 20:57
Isopropylbenzene	ND	5.0	10	12/23/2016 20:57
4-Isopropyl toluene	ND	5.0	10	12/23/2016 20:57
Methyl-t-butyl ether (MTBE)	270	5.0	10	12/23/2016 20:57
Methylene chloride	ND	5.0	10	12/23/2016 20:57
4-Methyl-2-pentanone (MIBK)	ND	5.0	10	12/23/2016 20:57
Naphthalene	ND	5.0	10	12/23/2016 20:57
n-Propyl benzene	ND	5.0	10	12/23/2016 20:57
Styrene	ND	5.0	10	12/23/2016 20:57
1,1,1,2-Tetrachloroethane	ND	5.0	10	12/23/2016 20:57
1,1,2,2-Tetrachloroethane	ND	5.0	10	12/23/2016 20:57
Tetrachloroethene	ND	5.0	10	12/23/2016 20:57
Toluene	ND	5.0	10	12/23/2016 20:57
1,2,3-Trichlorobenzene	ND	5.0	10	12/23/2016 20:57
1,2,4-Trichlorobenzene	ND	5.0	10	12/23/2016 20:57
1,1,1-Trichloroethane	ND	5.0	10	12/23/2016 20:57
1,1,2-Trichloroethane	ND	5.0	10	12/23/2016 20:57
Trichloroethene	ND	5.0	10	12/23/2016 20:57
Trichlorofluoromethane	ND	5.0	10	12/23/2016 20:57
1,2,3-Trichloropropane	ND	5.0	10	12/23/2016 20:57
1,2,4-Trimethylbenzene	ND	5.0	10	12/23/2016 20:57
1,3,5-Trimethylbenzene	ND	5.0	10	12/23/2016 20:57
Vinyl Chloride	ND	5.0	10	12/23/2016 20:57
Xylenes, Total	ND	5.0	10	12/23/2016 20:57

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002A	Water	12/21/2016 15:58	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	103	70-130		12/23/2016 20:57
Toluene-d8	107	70-130		12/23/2016 20:57
4-BFB	100	70-130		12/23/2016 20:57

Analyst(s): KF



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003A	Water	12/21/2016 16:45	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	100	10	12/23/2016 21:37
tert-Amyl methyl ether (TAME)	ND	5.0	10	12/23/2016 21:37
Benzene	ND	5.0	10	12/23/2016 21:37
Bromobenzene	ND	5.0	10	12/23/2016 21:37
Bromochloromethane	ND	5.0	10	12/23/2016 21:37
Bromodichloromethane	ND	5.0	10	12/23/2016 21:37
Bromoform	ND	5.0	10	12/23/2016 21:37
Bromomethane	ND	5.0	10	12/23/2016 21:37
2-Butanone (MEK)	ND	20	10	12/23/2016 21:37
t-Butyl alcohol (TBA)	47	20	10	12/23/2016 21:37
n-Butyl benzene	ND	5.0	10	12/23/2016 21:37
sec-Butyl benzene	ND	5.0	10	12/23/2016 21:37
tert-Butyl benzene	ND	5.0	10	12/23/2016 21:37
Carbon Disulfide	ND	5.0	10	12/23/2016 21:37
Carbon Tetrachloride	ND	5.0	10	12/23/2016 21:37
Chlorobenzene	ND	5.0	10	12/23/2016 21:37
Chloroethane	ND	5.0	10	12/23/2016 21:37
Chloroform	ND	5.0	10	12/23/2016 21:37
Chloromethane	ND	5.0	10	12/23/2016 21:37
2-Chlorotoluene	ND	5.0	10	12/23/2016 21:37
4-Chlorotoluene	ND	5.0	10	12/23/2016 21:37
Dibromochloromethane	ND	5.0	10	12/23/2016 21:37
1,2-Dibromo-3-chloropropane	ND	2.0	10	12/23/2016 21:37
1,2-Dibromoethane (EDB)	ND	5.0	10	12/23/2016 21:37
Dibromomethane	ND	5.0	10	12/23/2016 21:37
1,2-Dichlorobenzene	ND	5.0	10	12/23/2016 21:37
1,3-Dichlorobenzene	ND	5.0	10	12/23/2016 21:37
1,4-Dichlorobenzene	ND	5.0	10	12/23/2016 21:37
Dichlorodifluoromethane	ND	5.0	10	12/23/2016 21:37
1,1-Dichloroethane	ND	5.0	10	12/23/2016 21:37
1,2-Dichloroethane (1,2-DCA)	ND	5.0	10	12/23/2016 21:37
1,1-Dichloroethene	45	5.0	10	12/23/2016 21:37
cis-1,2-Dichloroethene	ND	5.0	10	12/23/2016 21:37
trans-1,2-Dichloroethene	ND	5.0	10	12/23/2016 21:37
1,2-Dichloropropane	ND	5.0	10	12/23/2016 21:37
1,3-Dichloropropane	ND	5.0	10	12/23/2016 21:37
2,2-Dichloropropane	ND	5.0	10	12/23/2016 21:37

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003A	Water	12/21/2016 16:45	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	5.0	10	12/23/2016 21:37
cis-1,3-Dichloropropene	ND	5.0	10	12/23/2016 21:37
trans-1,3-Dichloropropene	ND	5.0	10	12/23/2016 21:37
Diisopropyl ether (DIPE)	ND	5.0	10	12/23/2016 21:37
Ethylbenzene	ND	5.0	10	12/23/2016 21:37
Ethyl tert-butyl ether (ETBE)	ND	5.0	10	12/23/2016 21:37
Freon 113	ND	5.0	10	12/23/2016 21:37
Hexachlorobutadiene	ND	5.0	10	12/23/2016 21:37
Hexachloroethane	ND	5.0	10	12/23/2016 21:37
2-Hexanone	ND	5.0	10	12/23/2016 21:37
Isopropylbenzene	ND	5.0	10	12/23/2016 21:37
4-Isopropyl toluene	ND	5.0	10	12/23/2016 21:37
Methyl-t-butyl ether (MTBE)	ND	5.0	10	12/23/2016 21:37
Methylene chloride	ND	5.0	10	12/23/2016 21:37
4-Methyl-2-pentanone (MIBK)	ND	5.0	10	12/23/2016 21:37
Naphthalene	ND	5.0	10	12/23/2016 21:37
n-Propyl benzene	ND	5.0	10	12/23/2016 21:37
Styrene	ND	5.0	10	12/23/2016 21:37
1,1,1,2-Tetrachloroethane	ND	5.0	10	12/23/2016 21:37
1,1,2,2-Tetrachloroethane	ND	5.0	10	12/23/2016 21:37
Tetrachloroethene	ND	5.0	10	12/23/2016 21:37
Toluene	ND	5.0	10	12/23/2016 21:37
1,2,3-Trichlorobenzene	ND	5.0	10	12/23/2016 21:37
1,2,4-Trichlorobenzene	ND	5.0	10	12/23/2016 21:37
1,1,1-Trichloroethane	ND	5.0	10	12/23/2016 21:37
1,1,2-Trichloroethane	ND	5.0	10	12/23/2016 21:37
Trichloroethene	6.9	5.0	10	12/23/2016 21:37
Trichlorofluoromethane	ND	5.0	10	12/23/2016 21:37
1,2,3-Trichloropropane	ND	5.0	10	12/23/2016 21:37
1,2,4-Trimethylbenzene	ND	5.0	10	12/23/2016 21:37
1,3,5-Trimethylbenzene	ND	5.0	10	12/23/2016 21:37
Vinyl Chloride	ND	5.0	10	12/23/2016 21:37
Xylenes, Total	ND	5.0	10	12/23/2016 21:37

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003A	Water	12/21/2016 16:45	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	104	70-130		12/23/2016 21:37
Toluene-d8	106	70-130		12/23/2016 21:37
4-BFB	97	70-130		12/23/2016 21:37

Analyst(s): KF



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004A	Water	12/21/2016 17:57	GC10	131789
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		50	5	12/27/2016 17:20
tert-Amyl methyl ether (TAME)	ND		2.5	5	12/27/2016 17:20
Benzene	4.3		2.5	5	12/27/2016 17:20
Bromobenzene	ND		2.5	5	12/27/2016 17:20
Bromochloromethane	ND		2.5	5	12/27/2016 17:20
Bromodichloromethane	ND		2.5	5	12/27/2016 17:20
Bromoform	ND		2.5	5	12/27/2016 17:20
Bromomethane	ND		2.5	5	12/27/2016 17:20
2-Butanone (MEK)	ND		10	5	12/27/2016 17:20
t-Butyl alcohol (TBA)	ND		10	5	12/27/2016 17:20
n-Butyl benzene	ND		2.5	5	12/27/2016 17:20
sec-Butyl benzene	ND		2.5	5	12/27/2016 17:20
tert-Butyl benzene	ND		2.5	5	12/27/2016 17:20
Carbon Disulfide	ND		2.5	5	12/27/2016 17:20
Carbon Tetrachloride	ND		2.5	5	12/27/2016 17:20
Chlorobenzene	ND		2.5	5	12/27/2016 17:20
Chloroethane	ND		2.5	5	12/27/2016 17:20
Chloroform	ND		2.5	5	12/27/2016 17:20
Chloromethane	ND		2.5	5	12/27/2016 17:20
2-Chlorotoluene	ND		2.5	5	12/27/2016 17:20
4-Chlorotoluene	ND		2.5	5	12/27/2016 17:20
Dibromochloromethane	ND		2.5	5	12/27/2016 17:20
1,2-Dibromo-3-chloropropane	ND		1.0	5	12/27/2016 17:20
1,2-Dibromoethane (EDB)	ND		2.5	5	12/27/2016 17:20
Dibromomethane	ND		2.5	5	12/27/2016 17:20
1,2-Dichlorobenzene	ND		2.5	5	12/27/2016 17:20
1,3-Dichlorobenzene	ND		2.5	5	12/27/2016 17:20
1,4-Dichlorobenzene	ND		2.5	5	12/27/2016 17:20
Dichlorodifluoromethane	ND		2.5	5	12/27/2016 17:20
1,1-Dichloroethane	4.4		2.5	5	12/27/2016 17:20
1,2-Dichloroethane (1,2-DCA)	ND		2.5	5	12/27/2016 17:20
1,1-Dichloroethene	120		2.5	5	12/27/2016 17:20
cis-1,2-Dichloroethene	ND		2.5	5	12/27/2016 17:20
trans-1,2-Dichloroethene	ND		2.5	5	12/27/2016 17:20
1,2-Dichloropropane	ND		2.5	5	12/27/2016 17:20
1,3-Dichloropropane	ND		2.5	5	12/27/2016 17:20
2,2-Dichloropropane	ND		2.5	5	12/27/2016 17:20

(Cont.)



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004A	Water	12/21/2016 17:57	GC10	131789

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	2.5	5	12/27/2016 17:20
cis-1,3-Dichloropropene	ND	2.5	5	12/27/2016 17:20
trans-1,3-Dichloropropene	ND	2.5	5	12/27/2016 17:20
Diisopropyl ether (DIPE)	ND	2.5	5	12/27/2016 17:20
Ethylbenzene	7.9	2.5	5	12/27/2016 17:20
Ethyl tert-butyl ether (ETBE)	ND	2.5	5	12/27/2016 17:20
Freon 113	ND	2.5	5	12/27/2016 17:20
Hexachlorobutadiene	ND	2.5	5	12/27/2016 17:20
Hexachloroethane	ND	2.5	5	12/27/2016 17:20
2-Hexanone	ND	2.5	5	12/27/2016 17:20
Isopropylbenzene	2.6	2.5	5	12/27/2016 17:20
4-Isopropyl toluene	ND	2.5	5	12/27/2016 17:20
Methyl-t-butyl ether (MTBE)	ND	2.5	5	12/27/2016 17:20
Methylene chloride	ND	2.5	5	12/27/2016 17:20
4-Methyl-2-pentanone (MIBK)	ND	2.5	5	12/27/2016 17:20
Naphthalene	6.3	2.5	5	12/27/2016 17:20
n-Propyl benzene	6.8	2.5	5	12/27/2016 17:20
Styrene	ND	2.5	5	12/27/2016 17:20
1,1,1,2-Tetrachloroethane	ND	2.5	5	12/27/2016 17:20
1,1,2,2-Tetrachloroethane	ND	2.5	5	12/27/2016 17:20
Tetrachloroethene	ND	2.5	5	12/27/2016 17:20
Toluene	ND	2.5	5	12/27/2016 17:20
1,2,3-Trichlorobenzene	ND	2.5	5	12/27/2016 17:20
1,2,4-Trichlorobenzene	ND	2.5	5	12/27/2016 17:20
1,1,1-Trichloroethane	3.7	2.5	5	12/27/2016 17:20
1,1,2-Trichloroethane	ND	2.5	5	12/27/2016 17:20
Trichloroethene	21	2.5	5	12/27/2016 17:20
Trichlorofluoromethane	ND	2.5	5	12/27/2016 17:20
1,2,3-Trichloropropane	ND	2.5	5	12/27/2016 17:20
1,2,4-Trimethylbenzene	6.9	2.5	5	12/27/2016 17:20
1,3,5-Trimethylbenzene	ND	2.5	5	12/27/2016 17:20
Vinyl Chloride	ND	2.5	5	12/27/2016 17:20
Xylenes, Total	ND	2.5	5	12/27/2016 17:20

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004A	Water	12/21/2016 17:57	GC10	131789

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	100	70-130		12/27/2016 17:20
Toluene-d8	104	70-130		12/27/2016 17:20
4-BFB	102	70-130		12/27/2016 17:20

Analyst(s): KF



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/23/16-12/29/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

TPH(g)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001A	Water	12/21/2016 15:25	GC18	131789

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	9900	1000	20	12/23/2016 19:00

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	90	70-130	12/23/2016 19:00

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002A	Water	12/21/2016 15:58	GC18	131789

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	12/23/2016 12:30

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	91	70-130	12/23/2016 12:30

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003A	Water	12/21/2016 16:45	GC18	131789

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	12/23/2016 13:09

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	91	70-130	12/23/2016 13:09

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004A	Water	12/21/2016 17:57	GC16	131789

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	170	100	2	12/29/2016 00:14

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	105	70-130	12/29/2016 00:14

Analyst(s): KF



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8270C-SIM
Unit: µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001C	Water	12/21/2016 15:25	GC35	131838

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	1	12/28/2016 11:32
Acenaphthylene	ND	0.50	1	12/28/2016 11:32
Anthracene	ND	0.50	1	12/28/2016 11:32
Benzo (a) anthracene	ND	0.50	1	12/28/2016 11:32
Benzo (a) pyrene	ND	0.50	1	12/28/2016 11:32
Benzo (b) fluoranthene	ND	0.50	1	12/28/2016 11:32
Benzo (g,h,i) perylene	ND	0.50	1	12/28/2016 11:32
Benzo (k) fluoranthene	ND	0.50	1	12/28/2016 11:32
Chrysene	ND	0.50	1	12/28/2016 11:32
Dibenzo (a,h) anthracene	ND	0.50	1	12/28/2016 11:32
Fluoranthene	ND	0.50	1	12/28/2016 11:32
Fluorene	ND	0.50	1	12/28/2016 11:32
Indeno (1,2,3-cd) pyrene	ND	0.50	1	12/28/2016 11:32
1-Methylnaphthalene	69	50	100	12/28/2016 14:02
2-Methylnaphthalene	120	50	100	12/28/2016 14:02
Naphthalene	250	50	100	12/28/2016 14:02
Phenanthrene	0.92	0.50	1	12/28/2016 11:32
Pyrene	ND	0.50	1	12/28/2016 11:32
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
1-Fluoronaphthalene	84	30-130		12/28/2016 11:32
2-Fluorobiphenyl	78	30-130		12/28/2016 11:32

Analyst(s): REB



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8270C-SIM
Unit: µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002C	Water	12/21/2016 15:58	GC35	131838

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	1	12/28/2016 11:57
Acenaphthylene	ND	0.50	1	12/28/2016 11:57
Anthracene	ND	0.50	1	12/28/2016 11:57
Benzo (a) anthracene	ND	0.50	1	12/28/2016 11:57
Benzo (a) pyrene	ND	0.50	1	12/28/2016 11:57
Benzo (b) fluoranthene	ND	0.50	1	12/28/2016 11:57
Benzo (g,h,i) perylene	ND	0.50	1	12/28/2016 11:57
Benzo (k) fluoranthene	ND	0.50	1	12/28/2016 11:57
Chrysene	ND	0.50	1	12/28/2016 11:57
Dibenzo (a,h) anthracene	ND	0.50	1	12/28/2016 11:57
Fluoranthene	ND	0.50	1	12/28/2016 11:57
Fluorene	ND	0.50	1	12/28/2016 11:57
Indeno (1,2,3-cd) pyrene	ND	0.50	1	12/28/2016 11:57
1-Methylnaphthalene	ND	0.50	1	12/28/2016 11:57
2-Methylnaphthalene	ND	0.50	1	12/28/2016 11:57
Naphthalene	0.50	0.50	1	12/28/2016 11:57
Phenanthrene	ND	0.50	1	12/28/2016 11:57
Pyrene	ND	0.50	1	12/28/2016 11:57
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	78	30-130		12/28/2016 11:57
2-Fluorobiphenyl	78	30-130		12/28/2016 11:57

Analyst(s): REB



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8270C-SIM
Unit: µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003C	Water	12/21/2016 16:45	GC35	131838

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	1	12/27/2016 18:40
Acenaphthylene	ND	0.50	1	12/27/2016 18:40
Anthracene	ND	0.50	1	12/27/2016 18:40
Benzo (a) anthracene	ND	0.50	1	12/27/2016 18:40
Benzo (a) pyrene	ND	0.50	1	12/27/2016 18:40
Benzo (b) fluoranthene	ND	0.50	1	12/27/2016 18:40
Benzo (g,h,i) perylene	ND	0.50	1	12/27/2016 18:40
Benzo (k) fluoranthene	ND	0.50	1	12/27/2016 18:40
Chrysene	ND	0.50	1	12/27/2016 18:40
Dibenzo (a,h) anthracene	ND	0.50	1	12/27/2016 18:40
Fluoranthene	ND	0.50	1	12/27/2016 18:40
Fluorene	ND	0.50	1	12/27/2016 18:40
Indeno (1,2,3-cd) pyrene	ND	0.50	1	12/27/2016 18:40
1-Methylnaphthalene	ND	0.50	1	12/27/2016 18:40
2-Methylnaphthalene	ND	0.50	1	12/27/2016 18:40
Naphthalene	ND	0.50	1	12/27/2016 18:40
Phenanthrene	ND	0.50	1	12/27/2016 18:40
Pyrene	ND	0.50	1	12/27/2016 18:40
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	76	30-130		12/27/2016 18:40
2-Fluorobiphenyl	76	30-130		12/27/2016 18:40

Analyst(s): REB



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/27/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8270C-SIM
Unit: µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004C	Water	12/21/2016 17:57	GC35	131838

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	1	12/27/2016 19:05
Acenaphthylene	ND	0.50	1	12/27/2016 19:05
Anthracene	ND	0.50	1	12/27/2016 19:05
Benzo (a) anthracene	ND	0.50	1	12/27/2016 19:05
Benzo (a) pyrene	ND	0.50	1	12/27/2016 19:05
Benzo (b) fluoranthene	ND	0.50	1	12/27/2016 19:05
Benzo (g,h,i) perylene	ND	0.50	1	12/27/2016 19:05
Benzo (k) fluoranthene	ND	0.50	1	12/27/2016 19:05
Chrysene	ND	0.50	1	12/27/2016 19:05
Dibenzo (a,h) anthracene	ND	0.50	1	12/27/2016 19:05
Fluoranthene	ND	0.50	1	12/27/2016 19:05
Fluorene	ND	0.50	1	12/27/2016 19:05
Indeno (1,2,3-cd) pyrene	ND	0.50	1	12/27/2016 19:05
1-Methylnaphthalene	0.69	0.50	1	12/27/2016 19:05
2-Methylnaphthalene	ND	0.50	1	12/27/2016 19:05
Naphthalene	2.6	0.50	1	12/27/2016 19:05
Phenanthrene	ND	0.50	1	12/27/2016 19:05
Pyrene	ND	0.50	1	12/27/2016 19:05
Surrogates	REC (%)	Limits		
1-Fluoronaphthalene	74	30-130		12/27/2016 19:05
2-Fluorobiphenyl	74	30-130		12/27/2016 19:05

Analyst(s): REB



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/30/16-1/1/17
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001B	Water	12/21/2016 15:25	GC3	132055

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	---	2500	50	12/30/2016 19:09
MTBE	---	250	50	12/30/2016 19:09
Benzene	---	25	50	12/30/2016 19:09
Toluene	---	25	50	12/30/2016 19:09
Ethylbenzene	---	25	50	12/30/2016 19:09
TPH(mineral spirits)	ND	2500	50	12/30/2016 19:09
Xylenes	---	75	50	12/30/2016 19:09

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	116	S	89-115	12/30/2016 19:09

Analyst(s): LT

Analytical Comments: d1,c4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002B	Water	12/21/2016 15:58	GC3	132054

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	---	50	1	12/30/2016 19:39
MTBE	---	25	5	01/01/2017 20:56
Benzene	---	0.50	1	12/30/2016 19:39
Toluene	---	0.50	1	12/30/2016 19:39
Ethylbenzene	---	0.50	1	12/30/2016 19:39
TPH(mineral spirits)	ND	50	1	12/30/2016 19:39
Xylenes	---	1.5	1	12/30/2016 19:39

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	108	89-115	12/30/2016 19:39

Analyst(s): IA, LT



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/30/16-1/1/17
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003B	Water	12/21/2016 16:45	GC3	132054

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	---	50	1	12/30/2016 20:40
MTBE	---	5.0	1	12/30/2016 20:40
Benzene	---	0.50	1	12/30/2016 20:40
Toluene	---	0.50	1	12/30/2016 20:40
Ethylbenzene	---	0.50	1	12/30/2016 20:40
TPH(mineral spirits)	ND	50	1	12/30/2016 20:40
Xylenes	---	1.5	1	12/30/2016 20:40

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	185	S	89-115	12/30/2016 20:40

Analyst(s): LT

Analytical Comments: c11

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004B	Water	12/21/2016 17:57	GC3	132054

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	---	50	1	12/30/2016 21:10
MTBE	---	5.0	1	12/30/2016 21:10
Benzene	---	0.50	1	12/30/2016 21:10
Toluene	---	0.50	1	12/30/2016 21:10
Ethylbenzene	---	0.50	1	12/30/2016 21:10
TPH(mineral spirits)	ND	50	1	12/30/2016 21:10
Xylenes	---	1.5	1	12/30/2016 21:10

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	286	S	89-115	12/30/2016 21:10

Analyst(s): LT

Analytical Comments: d1,c11



Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/22/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8015B
Unit: µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1612B78-001B	Water	12/21/2016 15:25	GC11B	131721

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	2600	50	1	12/23/2016 23:45
TPH-Motor Oil (C18-C36)	ND	250	1	12/23/2016 23:45

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C26	104	72-119	12/23/2016 23:45

Analyst(s): TK Analytical Comments: e4,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-2	1612B78-002B	Water	12/21/2016 15:58	GC11B	131721

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	50	1	12/24/2016 00:24
TPH-Motor Oil (C18-C36)	ND	250	1	12/24/2016 00:24

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	98	72-117	12/24/2016 00:24

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-1	1612B78-003B	Water	12/21/2016 16:45	GC11B	131721

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	50	1	12/24/2016 01:02
TPH-Motor Oil (C18-C36)	ND	250	1	12/24/2016 01:02

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	98	72-117	12/24/2016 01:02

Analyst(s): TK



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
<http://www.mccampbell.com> / E-mail: main@mccampbell.com

Analytical Report

Client: All West Environmental, Inc
Date Received: 12/22/16 16:30
Date Prepared: 12/22/16
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
Extraction Method: SW3510C
Analytical Method: SW8015B
Unit: µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
AMW-3	1612B78-004B	Water	12/21/2016 17:57	GC11B	131721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	98	50	1	12/24/2016 02:59
TPH-Motor Oil (C18-C36)	ND	250	1	12/24/2016 02:59

Surrogates	REC (%)	Limits	Date Analyzed
C9	99	72-117	12/24/2016 02:59

Analyst(s): TK **Analytical Comments:** e4



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/23/16
Date Analyzed: 12/23/16
Instrument: GC18
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131789
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS/LCSD-131789

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	10	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
Bromobenzene	ND	0.50	-	-	-
Bromochloromethane	ND	0.50	-	-	-
Bromodichloromethane	ND	0.50	-	-	-
Bromoform	ND	0.50	-	-	-
Bromomethane	ND	0.50	-	-	-
2-Butanone (MEK)	ND	2.0	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
n-Butyl benzene	ND	0.50	-	-	-
sec-Butyl benzene	ND	0.50	-	-	-
tert-Butyl benzene	ND	0.50	-	-	-
Carbon Disulfide	ND	0.50	-	-	-
Carbon Tetrachloride	ND	0.50	-	-	-
Chlorobenzene	ND	0.50	-	-	-
Chloroethane	ND	0.50	-	-	-
Chloroform	ND	0.50	-	-	-
Chloromethane	ND	0.50	-	-	-
2-Chlorotoluene	ND	0.50	-	-	-
4-Chlorotoluene	ND	0.50	-	-	-
Dibromochloromethane	ND	0.50	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.20	-	-	-
1,2-Dibromoethane (EDB)	ND	0.50	-	-	-
Dibromomethane	ND	0.50	-	-	-
1,2-Dichlorobenzene	ND	0.50	-	-	-
1,3-Dichlorobenzene	ND	0.50	-	-	-
1,4-Dichlorobenzene	ND	0.50	-	-	-
Dichlorodifluoromethane	ND	0.50	-	-	-
1,1-Dichloroethane	ND	0.50	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.50	-	-	-
1,1-Dichloroethene	ND	0.50	-	-	-
cis-1,2-Dichloroethene	ND	0.50	-	-	-
trans-1,2-Dichloroethene	ND	0.50	-	-	-
1,2-Dichloropropane	ND	0.50	-	-	-
1,3-Dichloropropane	ND	0.50	-	-	-
2,2-Dichloropropane	ND	0.50	-	-	-
1,1-Dichloropropene	ND	0.50	-	-	-
cis-1,3-Dichloropropene	ND	0.50	-	-	-

(Cont.)

NELAP 4033ORELAP

QA/QC Officer



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/23/16
Date Analyzed: 12/23/16
Instrument: GC18
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131789
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS/LCSD-131789

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
trans-1,3-Dichloropropene	ND	0.50	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Freon 113	ND	0.50	-	-	-
Hexachlorobutadiene	ND	0.50	-	-	-
Hexachloroethane	ND	0.50	-	-	-
2-Hexanone	ND	0.50	-	-	-
Isopropylbenzene	ND	0.50	-	-	-
4-Isopropyl toluene	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Methylene chloride	ND	0.50	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
n-Propyl benzene	ND	0.50	-	-	-
Styrene	ND	0.50	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.50	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.50	-	-	-
Tetrachloroethene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
1,2,3-Trichlorobenzene	ND	0.50	-	-	-
1,2,4-Trichlorobenzene	ND	0.50	-	-	-
1,1,1-Trichloroethane	ND	0.50	-	-	-
1,1,2-Trichloroethane	ND	0.50	-	-	-
Trichloroethene	ND	0.50	-	-	-
Trichlorofluoromethane	ND	0.50	-	-	-
1,2,3-Trichloropropane	ND	0.50	-	-	-
1,2,4-Trimethylbenzene	ND	0.50	-	-	-
1,3,5-Trimethylbenzene	ND	0.50	-	-	-
Vinyl Chloride	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-

Surrogate Recovery

Dibromofluoromethane	25.8		25	103	70-130
Toluene-d8	24.6		25	98	70-130
4-BFB	2.50		2.5	100	70-130



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/23/16
Date Analyzed: 12/23/16
Instrument: GC18
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131789
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS/LCSD-131789

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	8.53	8.71	10	85	87	54-140	2.12	20
Benzene	9.35	9.64	10	93	96	47-158	3.04	20
t-Butyl alcohol (TBA)	34.2	35.5	40	85	89	42-140	3.69	20
Chlorobenzene	8.89	9.13	10	89	91	43-157	2.72	20
1,2-Dibromoethane (EDB)	8.88	9.03	10	89	90	44-155	1.72	20
1,2-Dichloroethane (1,2-DCA)	8.93	9.09	10	89	91	66-125	1.75	20
1,1-Dichloroethene	9.14	9.37	10	91	94	47-149	2.43	20
Diisopropyl ether (DIPE)	9.00	9.28	10	90	93	57-136	2.98	20
Ethyl tert-butyl ether (ETBE)	8.94	9.17	10	89	92	55-137	2.46	20
Methyl-t-butyl ether (MTBE)	9.18	9.39	10	92	94	53-139	2.24	20
Toluene	9.06	9.34	10	91	93	52-137	3.02	20
Trichloroethene	8.57	8.83	10	86	88	43-157	3.07	20
Surrogate Recovery								
Dibromofluoromethane	25.6	25.6	25	103	102	70-130	0.131	20
Toluene-d8	25.0	25.3	25	100	101	70-130	1.11	20
4-BFB	2.57	2.53	2.5	103	101	70-130	1.55	20



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/23/16
Date Analyzed: 12/23/16
Instrument: GC18
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131789
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS/LCSD-131789

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH(g) (C6-C12)			-	-	-
Surrogate Recovery					
Dibromofluoromethane			25		70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
VOC (C6-C12)	508	521	644	79	81	70-130	2.64	20
Surrogate Recovery								
Dibromofluoromethane	22.8	22.8	25	91	91	70-130	0	20



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/27/16
Date Analyzed: 12/27/16 - 12/28/16
Instrument: GC35
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131838
Extraction Method: SW3510C
Analytical Method: SW8270C-SIM
Unit: µg/L
Sample ID: MB/LCS/LCSD-131838

QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.50	-	-	-
Acenaphthylene	ND	0.50	-	-	-
Anthracene	ND	0.50	-	-	-
Benzo (a) anthracene	ND	0.50	-	-	-
Benzo (a) pyrene	ND	0.50	-	-	-
Benzo (b) fluoranthene	ND	0.50	-	-	-
Benzo (g,h,i) perylene	ND	0.50	-	-	-
Benzo (k) fluoranthene	ND	0.50	-	-	-
Chrysene	ND	0.50	-	-	-
Dibenzo (a,h) anthracene	ND	0.50	-	-	-
Fluoranthene	ND	0.50	-	-	-
Fluorene	ND	0.50	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.50	-	-	-
1-Methylnaphthalene	ND	0.50	-	-	-
2-Methylnaphthalene	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
Phenanthrene	ND	0.50	-	-	-
Pyrene	ND	0.50	-	-	-

Surrogate Recovery

1-Fluoronaphthalene	18.1		25	72	30-130
2-Fluorobiphenyl	18.4		25	74	30-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzo (a) pyrene	7.23	7.48	10	72	75	12-152	3.50	25
Chrysene	7.16	7.65	10	72	76	28-116	6.62	25
1-Methylnaphthalene	9.40	9.32	10	94	93	48-125	0.842	25
2-Methylnaphthalene	8.49	8.42	10	85	84	41-124	0.842	25
Phenanthrene	8.34	8.87	10	83	89	36-123	6.10	25
Pyrene	8.31	8.46	10	83	85	29-118	1.82	25

Surrogate Recovery

1-Fluoronaphthalene	19.6	19.8	25	78	79	45-129	1.40	25
2-Fluorobiphenyl	18.8	19.5	25	75	78	47-125	3.41	25



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/31/16 - 1/1/17
Date Analyzed: 12/31/16 - 1/1/17
Instrument: GC7
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 132054
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L
Sample ID: MB/LCS-132054
 1612D09-004AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	57.3	40	60	-	95	85-112
MTBE	ND	10.6	5.0	10	-	106	74-127
Benzene	ND	11.0	0.50	10	-	110	81-124
Toluene	ND	11.5	0.50	10	-	115	79-131
Ethylbenzene	ND	11.6	0.50	10	-	115	86-127
Xylenes	ND	34.4	1.5	30	-	115	87-133
Surrogate Recovery							
aaa-TFT	9.76	10.8		10	98	107	87-117

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	64.0	55.3	60	ND	107	92	85-113	14.6	20
MTBE	11.0	9.54	10	ND	110	95	73-120	14.2	20
Benzene	12.1	11.3	10	ND	121	113	84-121	6.74	20
Toluene	11.7	11.0	10	ND	117	110	86-125	6.08	20
Ethylbenzene	11.6	10.9	10	ND	116	109	93-124	6.24	20
Xylenes	34.4	34.4	30	ND	115	115	93-130	0	20
Surrogate Recovery									
aaa-TFT	10.8	11.4	10		108	114	89-115	4.97	20



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/30/16
Date Analyzed: 12/30/16
Instrument: GC3
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 132055
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L
Sample ID: MB/LCS-132055
 1612B78-001BMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	57.2	40	60	-	95	85-112
MTBE	ND	8.99	5.0	10	-	90	74-127
Benzene	ND	9.68	0.50	10	-	97	81-124
Toluene	ND	10.0	0.50	10	-	100	79-131
Ethylbenzene	ND	10.3	0.50	10	-	103	86-127
Xylenes	ND	32.5	1.5	30	-	108	87-133
Surrogate Recovery							
aaa-TFT	10.2	9.69		10	102	97	87-117

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR		5500	NR	NR	-	NR	
MTBE	NR	NR		1000	NR	NR	-	NR	
Benzene	NR	NR		1900	NR	NR	-	NR	
Toluene	NR	NR		1200	NR	NR	-	NR	
Ethylbenzene	NR	NR		570	NR	NR	-	NR	
Xylenes	NR	NR		2300	NR	NR	-	NR	
Surrogate Recovery									
aaa-TFT	NR	NR			NR	NR	-	NR	



Quality Control Report

Client: All West Environmental, Inc
Date Prepared: 12/22/16
Date Analyzed: 12/23/16
Instrument: GC9a, GC9b
Matrix: Water
Project: 16040.28; Hollis 4Q16GWM

WorkOrder: 1612B78
BatchID: 131721
Extraction Method: SW3510C
Analytical Method: SW8015B
Unit: µg/L
Sample ID: MB/LCS/LCSD-131721

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	618		625	99	74-107

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1120	1010	1000	112	101	95-136	10.7	30
Surrogate Recovery								
C9	659	615	625	105	98	74-107	6.90	30



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1612B78

ClientCode: AWE

WaterTrax
 WriteOn
 EDF
 Excel
 EQUIS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Leonard Niles
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
(360) 618-2789 FAX: (415) 391-2008

Email: Leonard@allwest1.com
cc/3rd Party:
PO:
ProjectNo: 16040.28; Hollis 4Q16GWM

Bill to:

Darlene Torio
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
darlene@allwest1.com

Requested TAT: 5 days;

Date Received: 12/22/2016

Date Logged: 12/22/2016

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1612B78-001	MW-3	Water	12/21/2016 15:25	<input type="checkbox"/>	A	A	C	B	A	B						
1612B78-002	AMW-2	Water	12/21/2016 15:58	<input type="checkbox"/>	A	A	C	B		B						
1612B78-003	AMW-1	Water	12/21/2016 16:45	<input type="checkbox"/>	A	A	C	B		B						
1612B78-004	AMW-3	Water	12/21/2016 17:57	<input type="checkbox"/>	A	A	C	B		B						

Test Legend:

1	8260B_W	2	8260GAS_W	3	8270_PNA_W	4	G-MBTEX_W
5	PREDF REPORT	6	TPH(DMO)_W	7		8	
9		10		11		12	

Prepared by: Briana Cutino

The following SampIDs: 001A, 002A, 003A, 004A contain testgroup Gas8260_W.; The following SampIDs: 001B, 002B, 003B, 004B contain testgroup Multi Range_W.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: ALL WEST ENVIRONMENTAL, INC

Project: 16040.28; Hollis 4Q16GWM

Work Order: 1612B78

Client Contact: Leonard Niles

QC Level: LEVEL 2

Contact's Email: Leonard@allwest1.com

Comments:

Date Logged: 12/22/2016

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1612B78-001A	MW-3	Water	TPH(g) & 8260 (Basic List) by P&T GCMS	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 15:25	5 days	Trace	<input type="checkbox"/>	
1612B78-001B	MW-3	Water	Multi-Range TPH by EPA 8015Bm	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 15:25	5 days	Trace	<input type="checkbox"/>	
1612B78-001C	MW-3	Water	SW8270C (PAHs/PNAs)	1	ILA	<input type="checkbox"/>	12/21/2016 15:25	5 days	Trace	<input type="checkbox"/>	
1612B78-002A	AMW-2	Water	TPH(g) & 8260 (Basic List) by P&T GCMS	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 15:58	5 days	Trace	<input type="checkbox"/>	
1612B78-002B	AMW-2	Water	Multi-Range TPH by EPA 8015Bm	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 15:58	5 days	Trace	<input type="checkbox"/>	
1612B78-002C	AMW-2	Water	SW8270C (PAHs/PNAs)	1	ILA	<input type="checkbox"/>	12/21/2016 15:58	5 days	Trace	<input type="checkbox"/>	
1612B78-003A	AMW-1	Water	TPH(g) & 8260 (Basic List) by P&T GCMS	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 16:45	5 days	Trace	<input type="checkbox"/>	
1612B78-003B	AMW-1	Water	Multi-Range TPH by EPA 8015Bm	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 16:45	5 days	Trace	<input type="checkbox"/>	
1612B78-003C	AMW-1	Water	SW8270C (PAHs/PNAs)	1	ILA	<input type="checkbox"/>	12/21/2016 16:45	5 days	Trace	<input type="checkbox"/>	
1612B78-004A	AMW-3	Water	TPH(g) & 8260 (Basic List) by P&T GCMS	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 17:57	5 days	Trace	<input type="checkbox"/>	
1612B78-004B	AMW-3	Water	Multi-Range TPH by EPA 8015Bm	2	VOA w/ HCl	<input type="checkbox"/>	12/21/2016 17:57	5 days	Trace	<input type="checkbox"/>	
1612B78-004C	AMW-3	Water	SW8270C (PAHs/PNAs)	1	ILA w/ HCl	<input type="checkbox"/>	12/21/2016 17:57	5 days	Trace	<input type="checkbox"/>	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



McCAMPBELL ANALYTICAL, INC.

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Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

CHAIN OF CUSTODY RECORD

TURN AROUND TIME RUSH 24 HR 48 HR 72 HR 5 DAY
 T0600102099
 GeoTracker EDF PDF Excel Write On (DW)
 Check if sample is effluent and "J" flag is required

Report To: Leonard Niles Bill To: Darlene Torio
 Company: AllWest Environmental, Inc.
 2141 Mission Street, Suite 100 Leonard@allwest1.com
 San Francisco, CA 94110 E-Mail: Darlene@allwest1.com
 Tele: (415) 391-2510 Fax: (415) 391-2008
 Project #: 16040.28 Project Name: Hollis 4 Q16 GWM
 Project Location: 6655 Hollis Street, Emeryville, CA
 Sampler Signature: Leonard Niles

Analysis Request Other Comments

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015) / TPH-mo	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCS)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (CI Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic CI Herbicides)	EPA 524.2 / 624 / 8260 (VOCs) / TPH-g/ms	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNA's)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Filter sample for DISSOLVED metals analysis	Comments				
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO ₃	Other																						
MW-3	MW-3	12/21/16	1525	4	VOA	X																												**Indicate here if these samples are potentially dangerous to handle:		
↓	↓	↓	↓	2	1-A	X											X							X												
AMW-2	AMW-2		1558	4	VOA	X																														
↓	↓	↓	↓	2	1-A	X												X							X											
AMW-1	AMW-1		1645	4	VOA	X																														
↓	↓	↓	↓	2	1-A	X																														
AMW-3	AMW-3		1757	4	VOA	X																														
↓	↓	↓	↓	2	1-A	X												X							X											

****MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.**

Relinquished By: <u>Leonard Niles</u>	Date: <u>12/22/16</u>	Time: <u>1115</u>	Received By: <u>[Signature]</u>	ICE/° _____ GOOD CONDITION _____ HEAD SPACE ABSENT _____ DECHLORINATED IN LAB _____ APPROPRIATE CONTAINERS _____ PRESERVED IN LAB _____ VOAS O&G METALS OTHER PRESERVATION pH<2	COMMENTS:
Relinquished By: <u>[Signature]</u>	Date: <u>12-22-16</u>	Time: <u>1630</u>	Received By: <u>[Signature]</u>		
Relinquished By:	Date:	Time:	Received By:		



Sample Receipt Checklist

Client Name: **All West Environmental, Inc**
 Project Name: **16040.28; Hollis 4Q16GWM**

Date and Time Received: **12/22/2016 16:30**
 Date Logged: **12/22/2016**
 Received by: **Briana Cutino**
 Logged by: **Briana Cutino**

WorkOrder No: **1612B78** Matrix: Water
 Carrier: Bernie Cummins (MAI Courier)

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No NA
 Sample/Temp Blank temperature Temp: 2.2°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes No NA
 Samples Received on Ice? Yes No
 (Ice Type: WET ICE)

UCMR3 Samples:

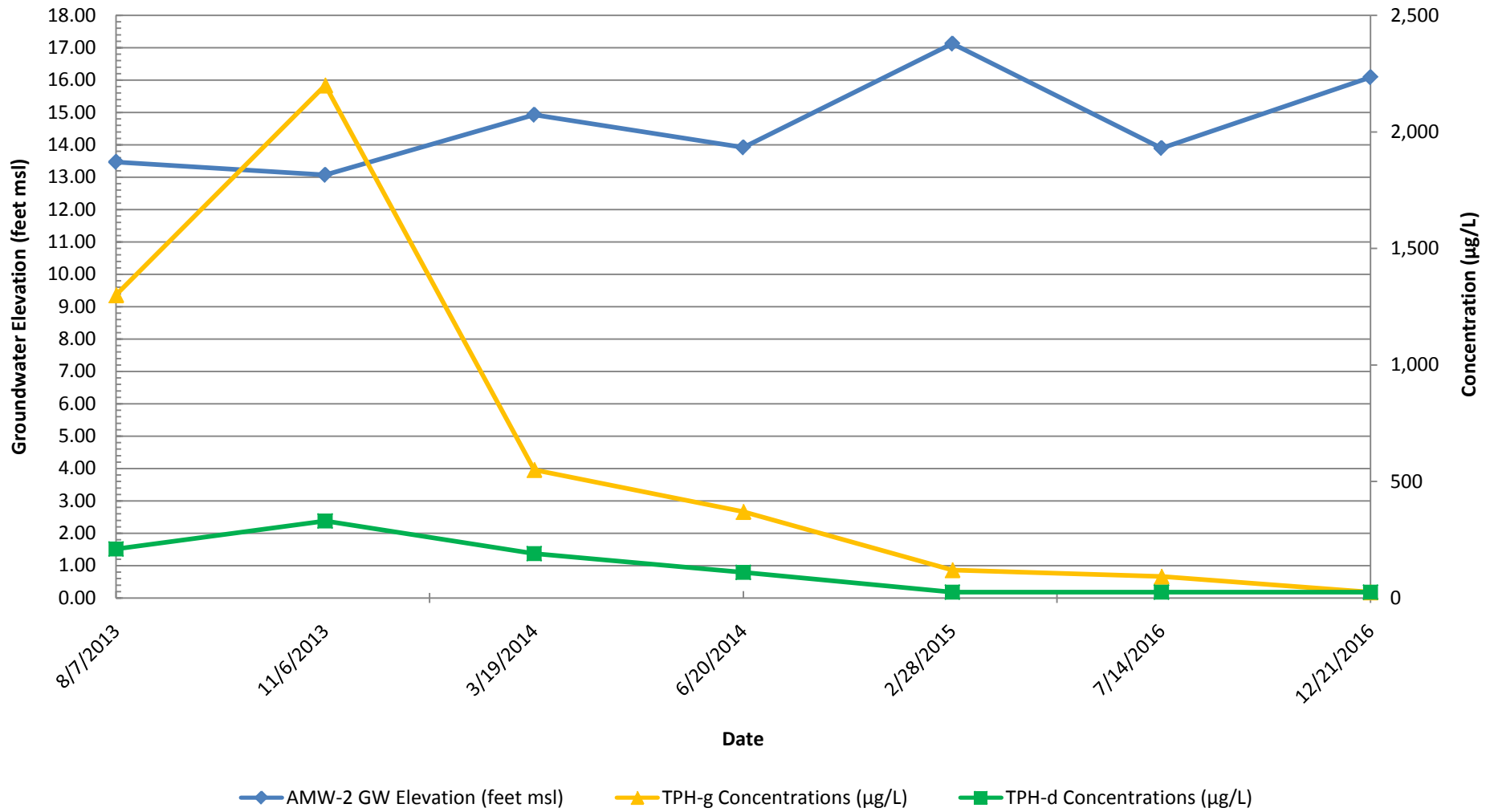
Total Chlorine tested and acceptable upon receipt for EPA 522? Yes No NA
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes No NA

Comments:

APPENDIX D

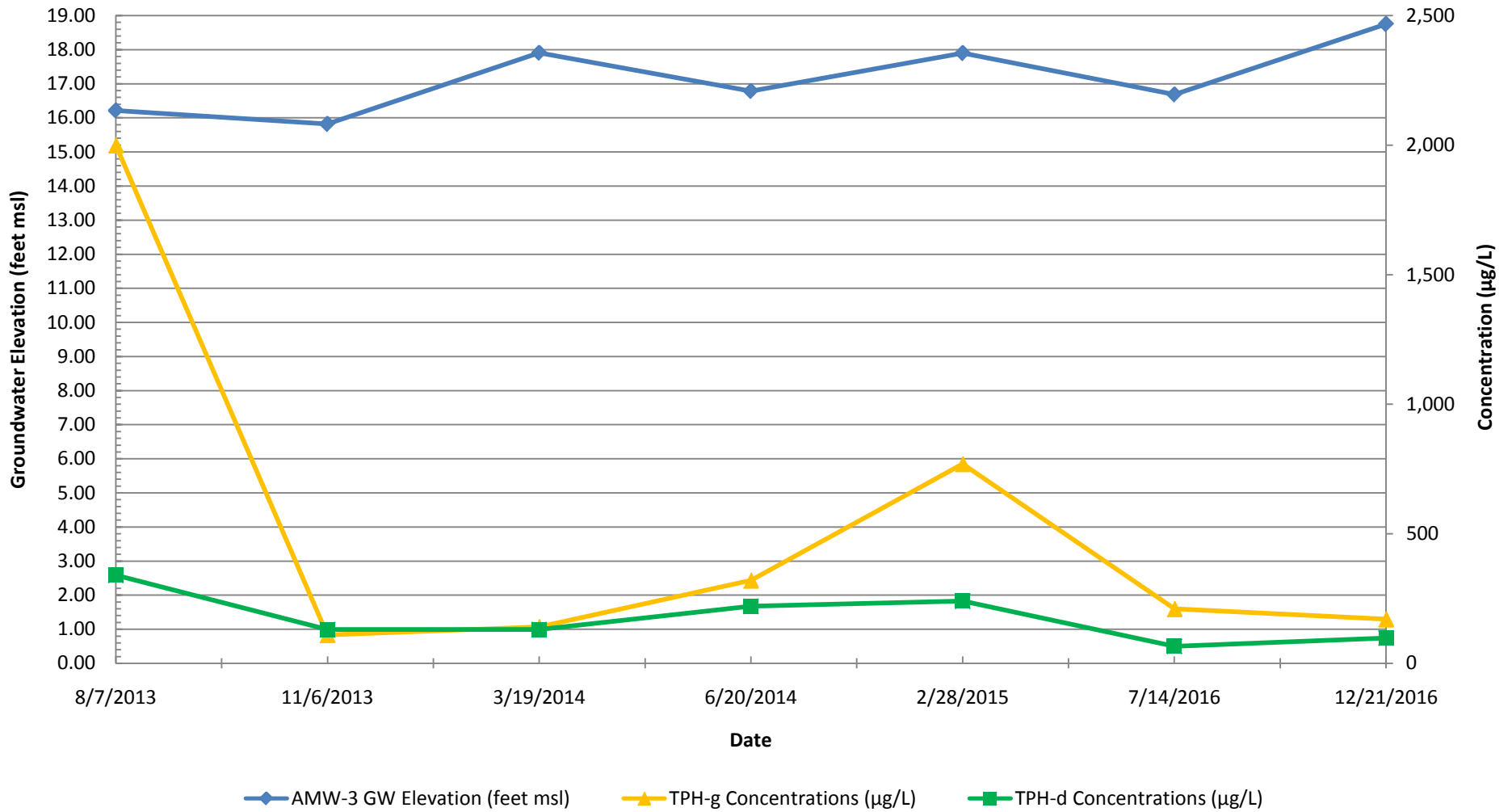
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-2 Groundwater Elevations, and TPH-g and TPH-d Concentrations

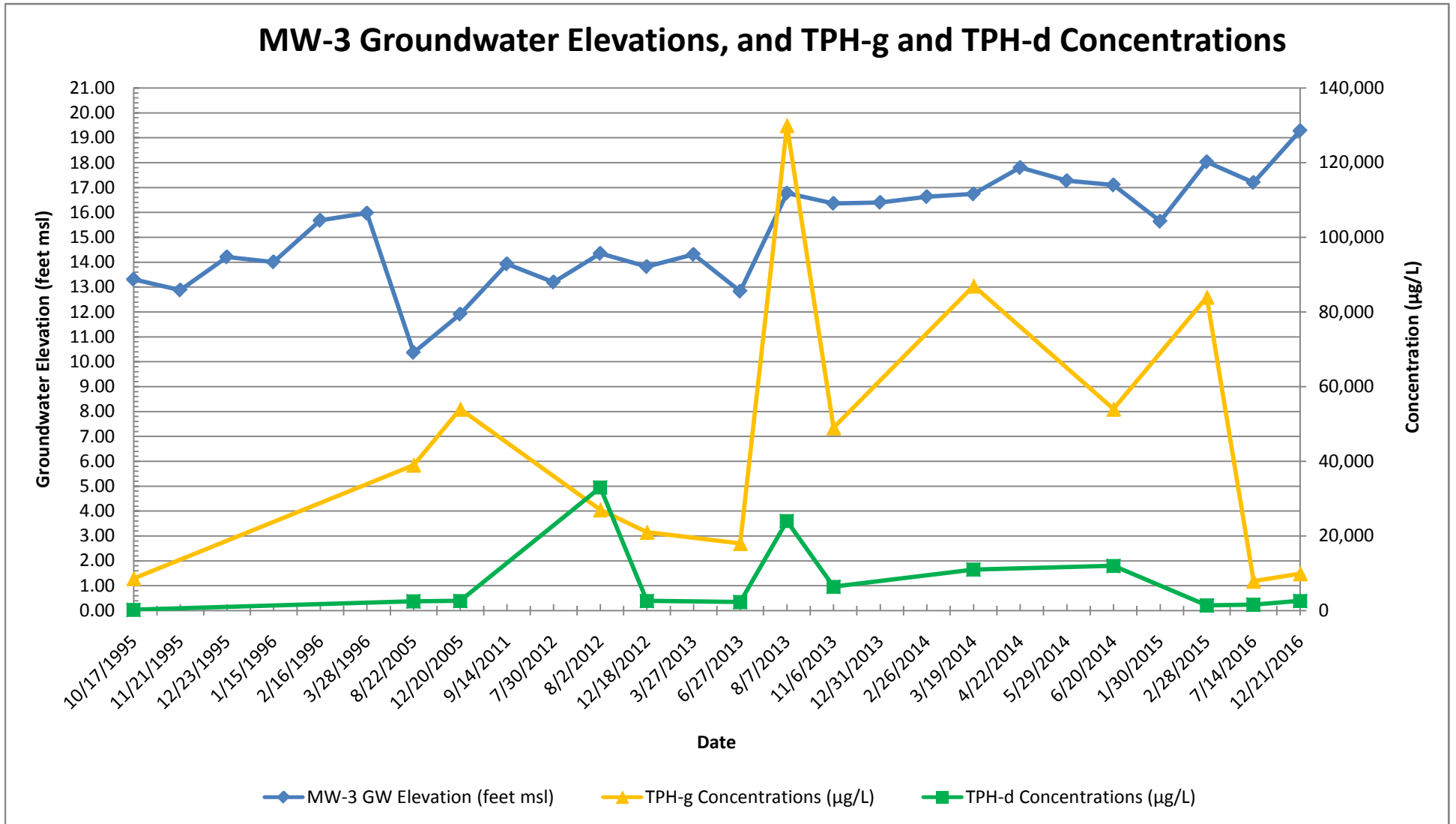


FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-3 Groundwater Elevations, and TPH-g and TPH-d Concentrations

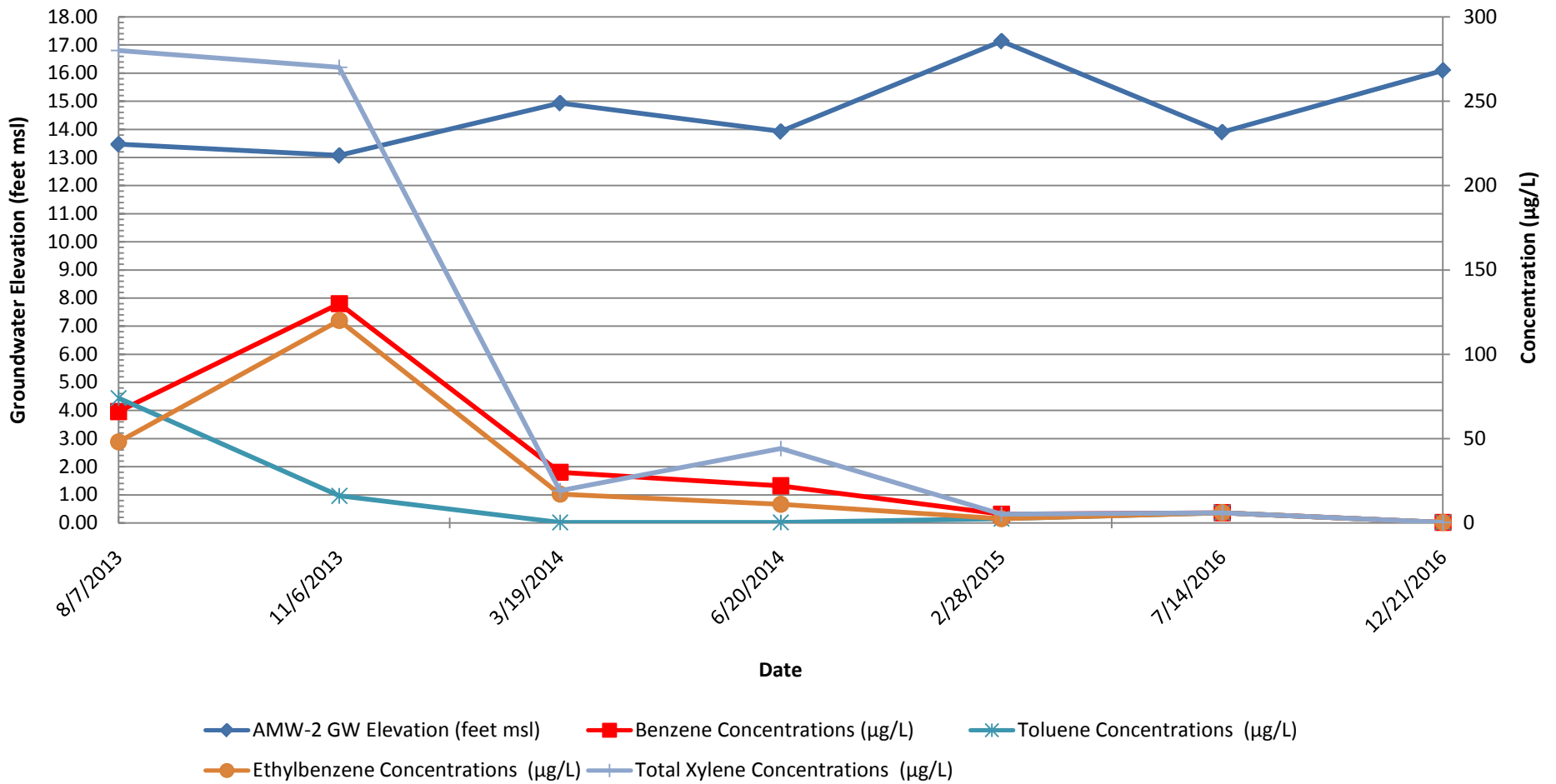


FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28



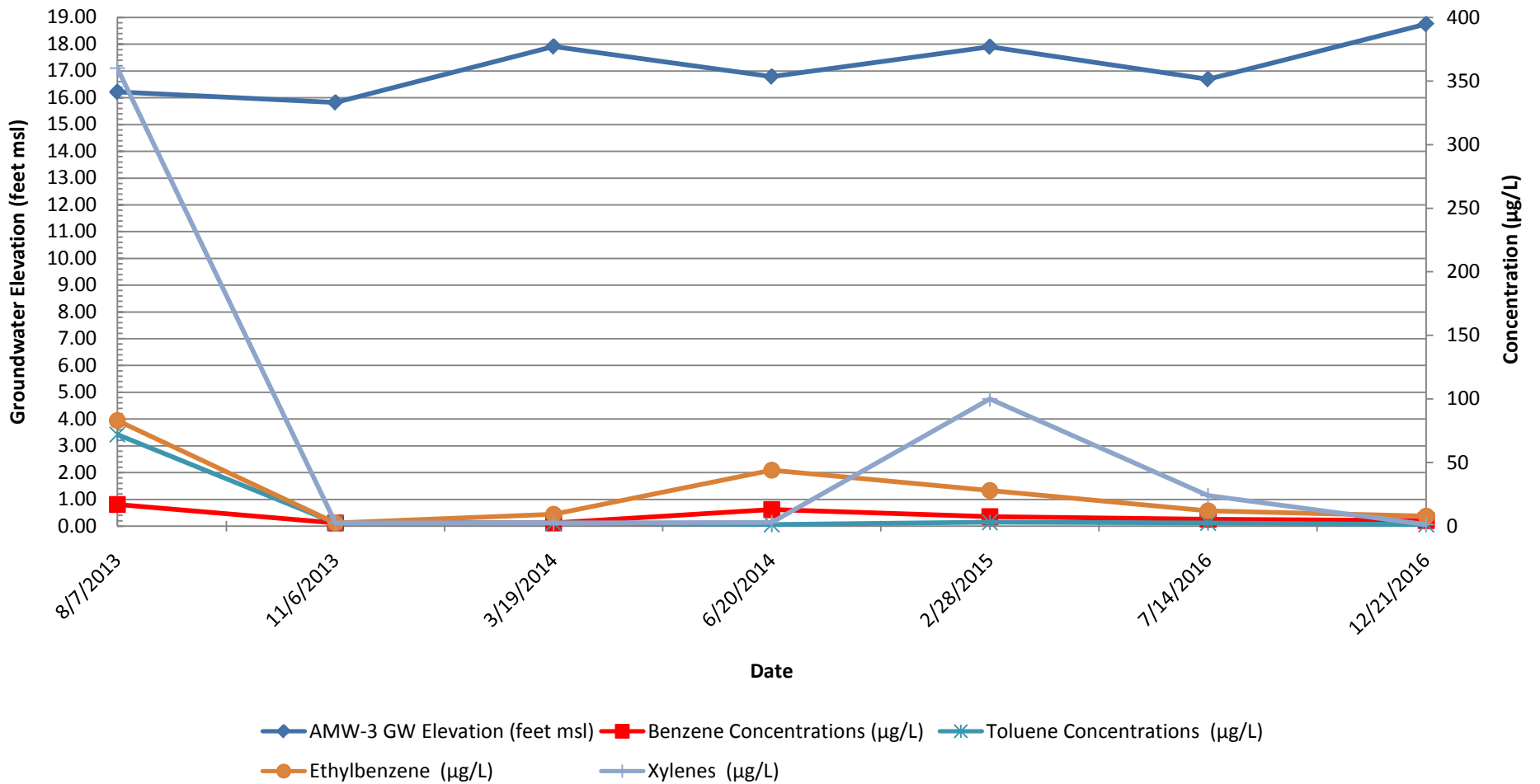
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-2 Groundwater Elevations, and Benzene, Toluene, Ethylbenzene, and Total Xylenes Concentrations



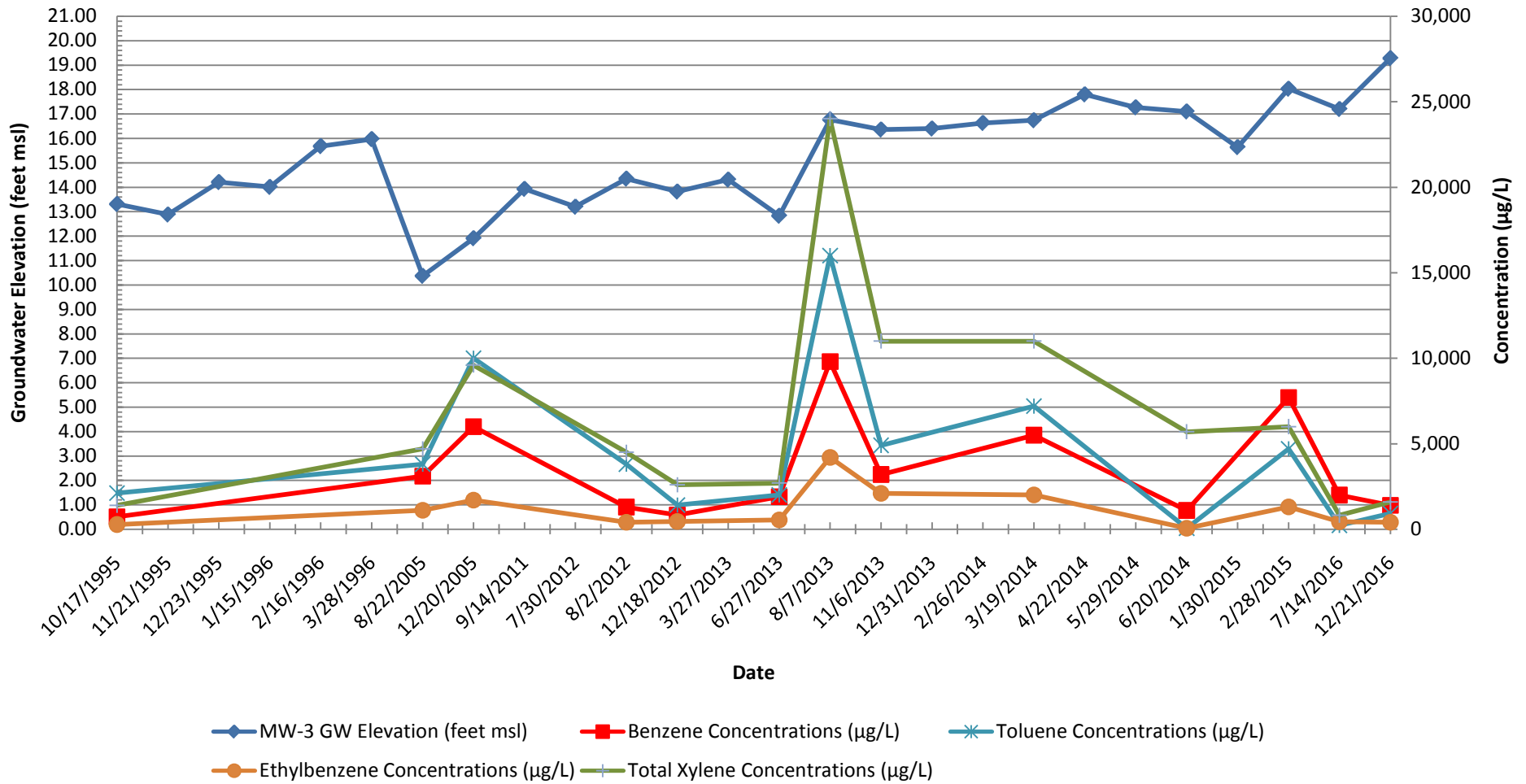
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-3 Groundwater Elevations, and TPH-g, TPH-d Benzene, Toluene, Ethylbenzene, Total Xylene Concentrations



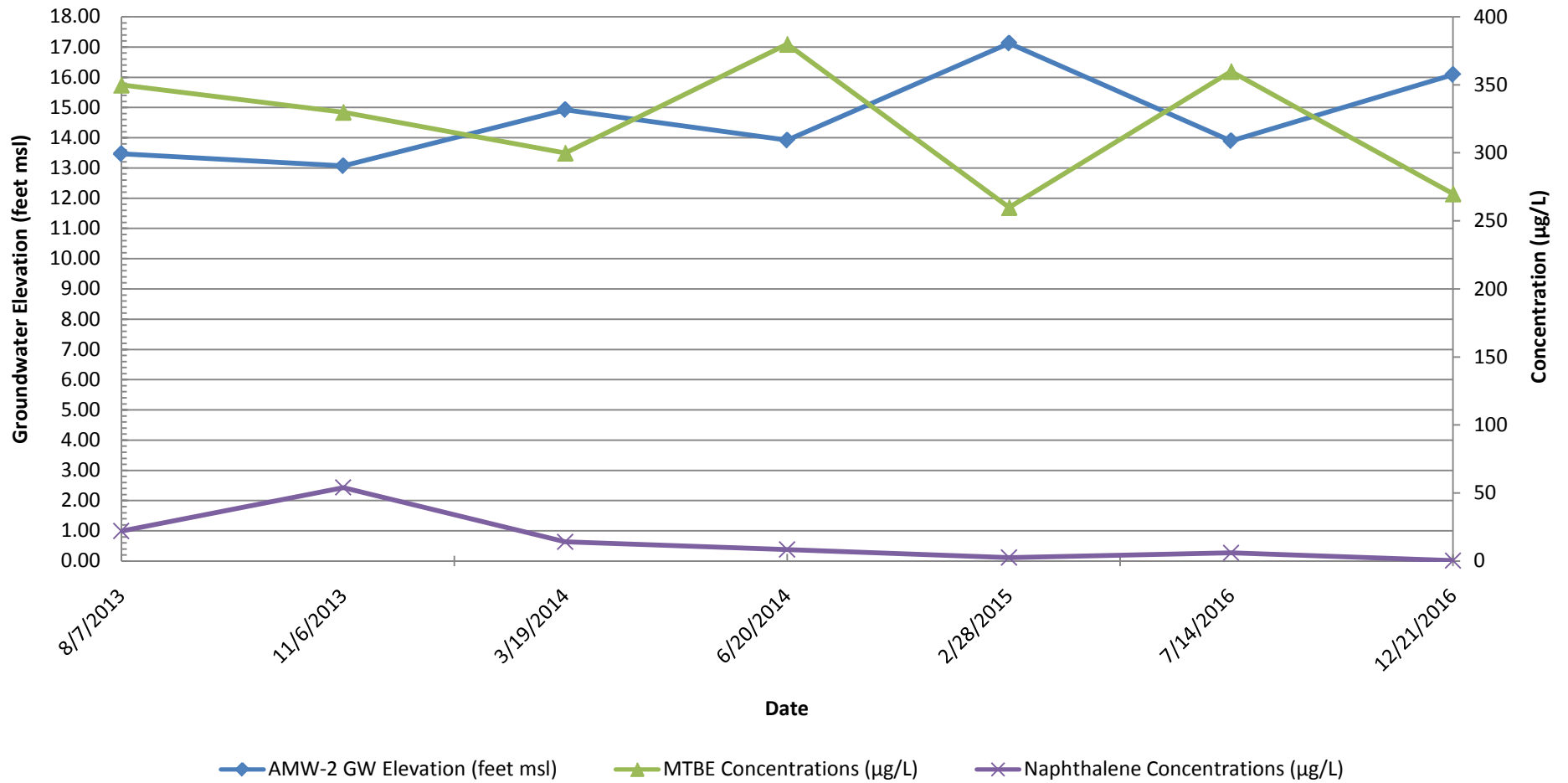
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

MW-3 Groundwater Elevations, and Benzene, Toluene, Ethylbenzene and Total Xylenes Concentrations



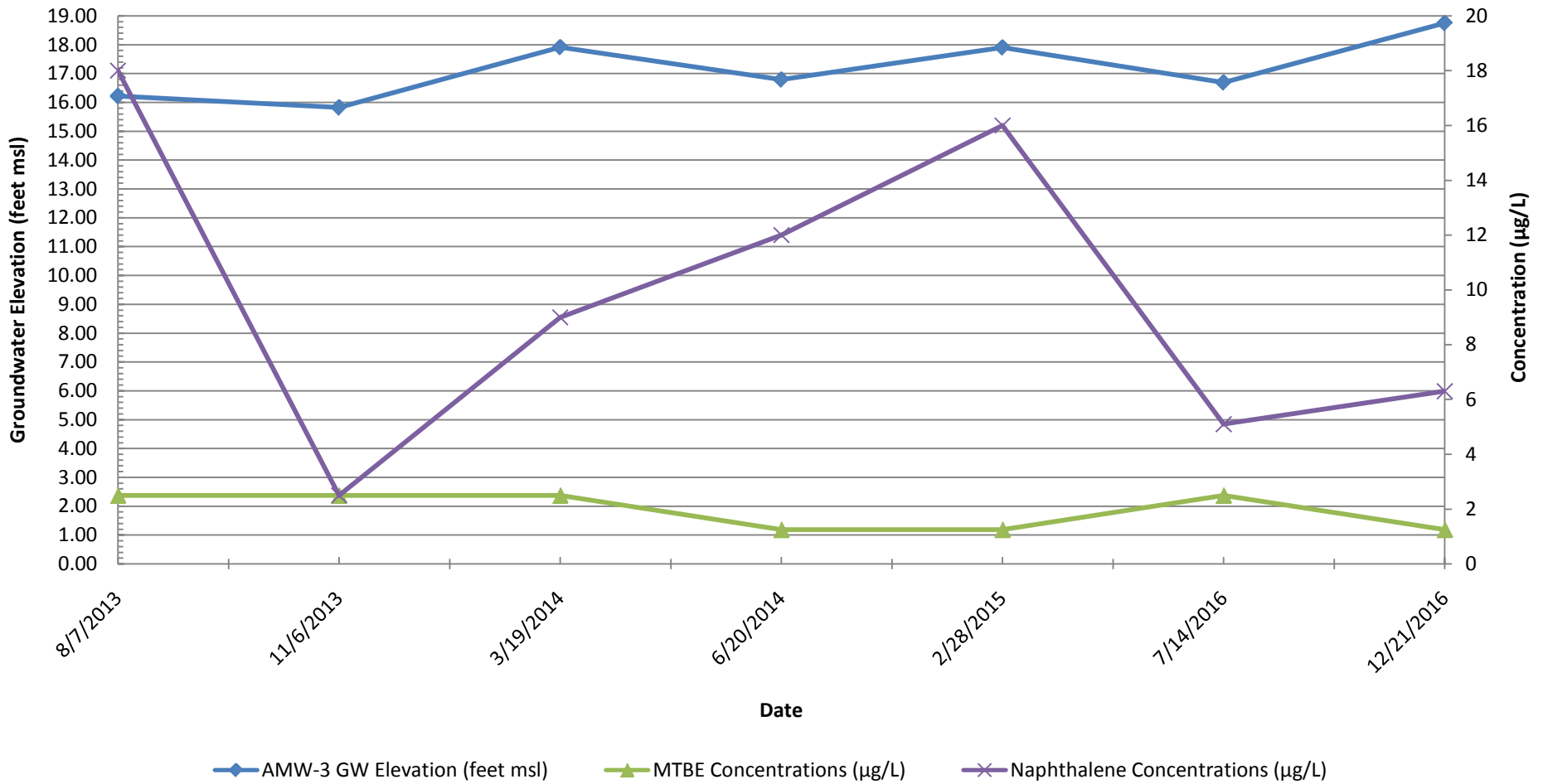
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-2 Groundwater Elevations, and MTBE and Naphthalene Concentrations



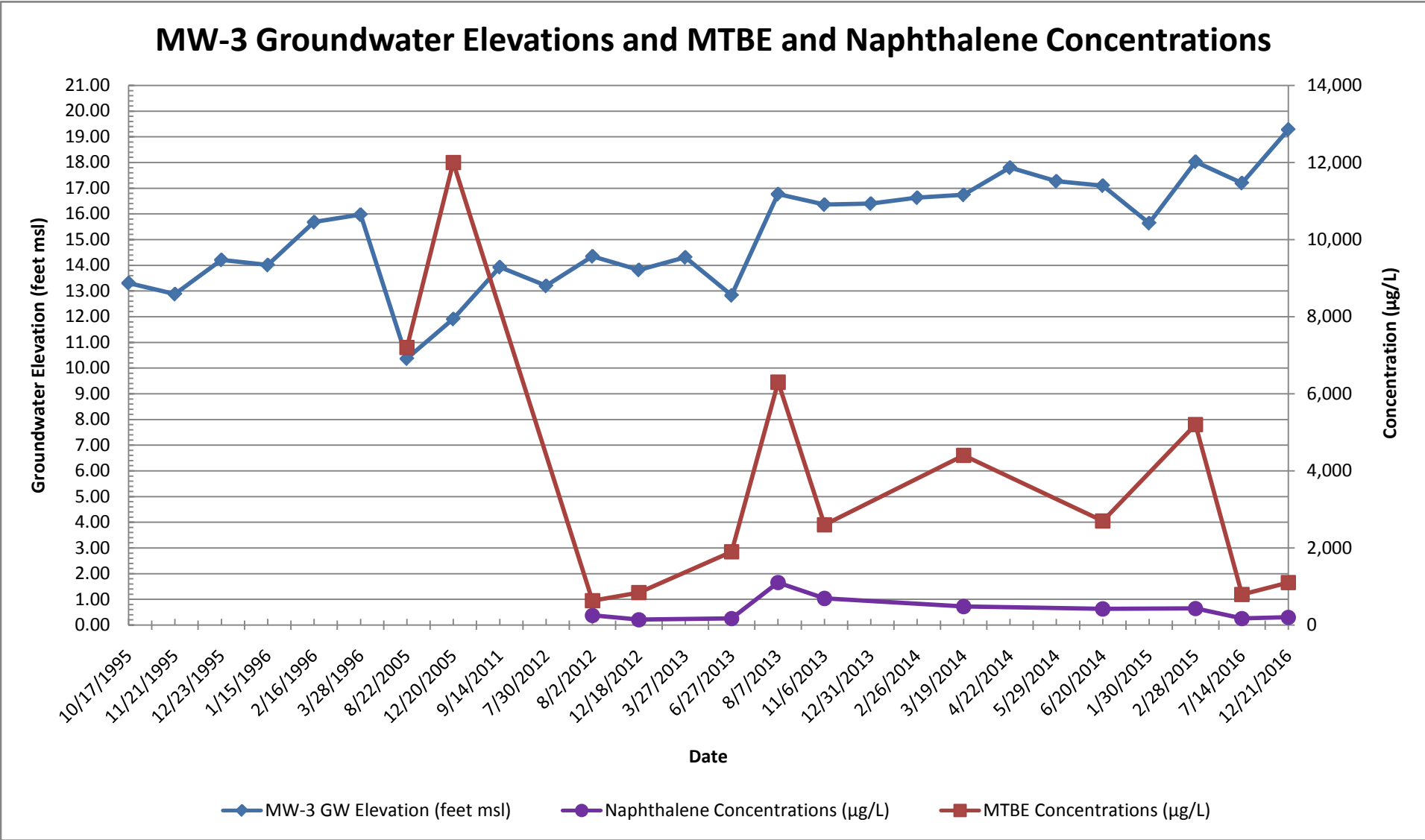
FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

AMW-3 Groundwater Elevations, and MTBE and Naphthalene Concentrations



FORMER McGRATH STEEL
6655 HOLLIS STREET
EMERYVILLE, CA
AllWest Project No. 16040.28

MW-3 Groundwater Elevations and MTBE and Naphthalene Concentrations



APPENDIX E



APPLICATION FOR AUTHORIZATION TO USE

REPORT TITLE: SECOND SEMIANNUAL 2016 GROUNDWATER MONITORING REPORT

6655 Hollis St. & 1471 67th St.
Emeryville, CA

PROJECT NUMBER: 16040.28

To: AllWest Environmental, Inc.
2141 Mission Street, Suite 100
San Francisco, CA 94110

From (Applicant): _____

(Please clearly identify name and address of person/entity applying for permission to use or copy this document)

Ladies and Gentlemen:

Applicant states they have thoroughly reviewed the report and had the opportunity to discuss with AllWest the report's methodology, findings and conclusion(s).

Applicant hereby applies for permission to rely upon AllWest's work product, as described above, for the purpose of (state here the purpose for which you wish to rely upon the work product):

Applicant only can accept and rely upon AllWest work product under the strict understanding that Applicant is bound by all provisions in the General Conditions to the Work Authorization Agreement provided below. Every report, recommendation, finding, or conclusion issued by AllWest shall be subject to the limitations stated in the Agreement and subject report(s). If this is agreeable, please sign below and return one copy of this letter to us along with the applicable fees. Upon receipt and if acceptable, our signed letter will be returned. AllWest may withhold permission at its sole discretion or require additional re-use fees or terms.

FEES: A \$1,650 coordination and reliance fee, payable in advance, will apply. If desired, for an additional \$150 report reproduction fee, we will reissue the report in the name of the Applicant; the report date, however, will remain the same. All checks will be returned if your request for reliance is not approved.

REQUESTED BY

APPROVED BY

Applicant Company

AllWest Environmental, Inc.

Print Name and Title

Print Name and Title

Signature and Date

Signature and Date

GENERAL CONDITIONS TO THE WORK AUTHORIZATION AGREEMENT

It is hereby agreed that the Client retains AllWest to provide services as set forth in the Work Authorization attached hereto (the "Work"). This contract shall be controlled by the following terms and conditions, and these terms and conditions shall also control any further assignments performed pursuant to this Work Authorization. Client's signature on this Work Authorization constitutes Client's agreement to the all terms to this contract, including these General Conditions.

FEES AND COSTS

1. AllWest shall charge for work performed by its personnel at the rates identified in the Work Authorization. These rates are subject to reasonable increases by AllWest upon giving Client 30 days advance notice. Reimbursable Costs will be charged to the Client in addition to the fees for the basic services under this Agreement and all Additional Services (defined below) under the Agreement. Reimbursable Costs include, but are not limited to, expenses for travel, including transportation, meals, lodging, long distance telephone and other related expenses, as well as the costs of reproduction of all drawings for the Client's use, costs for specifications and type-written reports, permit and approval fees, automobile travel reimbursement, costs and fees of subcontractors, and soil and other materials testing. No overtime is accrued for time spent in travel. All costs incurred which relate to the services or materials provided by a contractor or subcontractor to AllWest shall be invoiced by AllWest on the basis of cost plus twenty percent (20%). Automobile travel reimbursement shall be at the rate of fifty- eight cents (\$0.58) per mile. All other reimbursable costs shall be invoiced and billed by AllWest at the rate of 1.1 times the direct cost to AllWest. Reimbursable costs will be charged to the client only as outlined in the Work Authorization if the scope of work is for Phase I Environmental Site Assessment, Property Condition Assessment, Seismic Assessment or ALTA survey. Invoices for work performed shall be submitted monthly. Payment will be due upon receipt of invoice. Client shall pay interest on the balance of unpaid invoices which are overdue by more than 30 days, at a rate of 18% per annum as well as all attorney fees and costs incurred by AllWest to secure payment of unpaid invoices. AllWest may waive such fees at its sole discretion.

STANDARD OF CARE

2. AllWest will perform its work in accordance with the standard of care of its industry, as it is at the time of the work being performed, and applicable in the locale of the work being performed. AllWest makes no other warranties, express or implied regarding its work.

LIMITATION OF REMEDIES

3. Client expressly agrees that to the fullest extent permitted by law, Client's remedies for any liability incurred by AllWest, and/or its employees or agents, for any and all claims arising from AllWest's services, shall be \$50,000 or its fees, whichever is greater.

Client may request a higher limitation of remedies, but must do so in writing. Upon such written request, AllWest may agree to increase this limit in exchange for a mutually negotiated higher fee commensurate with the increased risk to AllWest. Any such agreed increase in fee and limitation of remedies amount must be memorialized by written agreement which expressly amends the terms of this clause.

As used in this section, the term "limitation of remedies" shall apply to claims of any kind, including, but not limited to, claims brought in contract, tort, strict liability, or otherwise, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to AllWest's services or the services of AllWest's subcontractors, consultants, agents, officers, directors, and employees from any cause(s). AllWest shall not be liable for any claims of loss of profits or any other indirect, incidental, or consequential damages of any nature whatsoever. Client & AllWest have specifically negotiated this limitation.

INDEMNIFICATION

4. Notwithstanding any other provision of this Agreement, Client agrees, to the fullest extent permitted by law, to waive any claim against, release from any liability or responsibility for, and , indemnify and hold harmless AllWest, its employees, agents and sub-consultants (collectively, Consultant) from and against any and all damages, liabilities, claims, actions or costs of any kind, including reasonable attorney's fees and defense costs, arising or alleged to arise out of or to be in any way connected with the Project or the performance or non-performance of Consultant of any services under this Agreement, excepting only any such liabilities determined by a court or other forum of competent jurisdiction to have been caused by the negligence or willful misconduct of Consultant. This provision shall be in addition to any rights of indemnity that Consultant may have under the law and shall survive and remain in effect following the termination of this Agreement for any reason. Should any part of this provision be determined to be unenforceable, AllWest and Client agree that the rest of the provision shall apply to the maximum extent permitted by law. The Client's duty to defend AllWest shall arise immediately upon tender of any matter potentially covered by the above obligations to indemnify and hold harmless.

MEDIATION & JUDICIAL REFERENCE

5. In an effort to resolve any conflicts or disputes that arise regarding the performance of this agreement, the Client & AllWest agree that all such disputes shall be submitted to non-binding mediation, using a mutually agreed upon mediation service experienced in the resolution of construction disputes. Unless the parties mutually agree otherwise, such mediation shall be a condition precedent to the initiation of any other adjudicative proceedings. It is further agreed that any dispute that is not settled pursuant to such mediation shall be adjudicated by a court appointed referee in accordance with the Judicial Reference procedures as set forth in California Code of Civil Procedure Section 638 et seq. The parties hereby mutually agree to waive any right to a trial by jury regarding any dispute arising out of this agreement.

The parties further agree to include a similar mediation, Judicial Reference & waiver of jury trial provision in their agreements with other independent contractors & consultants retained for the project and require them to similarly agree to these dispute resolution procedures. The cost of said Mediation shall be split equally between the parties. This agreement to mediate shall be specifically enforceable under the prevailing law of the jurisdiction in which this agreement was signed.

HAZARDOUS WASTE

6. Client acknowledges that AllWest and its sub-contractors have played no part in the creation of any hazardous waste, pollution sources, nuisance, or chemical or industrial disposal problem, which may exist, and that AllWest has been retained for the sole purpose of performing the services set out in the scope of work within this Agreement, which may include, but is not necessarily limited to such services as assisting the Client in assessing any problem which may exist and in assisting the

Client in formulating a remedial program. Client acknowledges that while necessary for investigations, commonly used exploration methods employed by AllWest may penetrate through contaminated materials and serve as a connecting passageway between the contaminated material and an uncontaminated aquifer or groundwater, possibly inducing cross contamination. While back-filling with grout or other means, according to a state of practice design is intended to provide a seal against such passageway, it is recognized that such a seal may be imperfect and that there is an inherent risk in drilling borings of performing other exploration methods in a hazardous waste site.

AllWest will not sign or execute hazardous waste manifests or other waste tracking documents on behalf of Client unless Client specifically establishes AllWest as an express agent of Client under a written agency agreement approved by AllWest. In addition, Client agrees that AllWest shall not be required to sign any documents, no matter requested by whom, that would have the effect of AllWest providing any form of certification, guarantee, or warranty as to any matter or to opine on conditions for which the existence AllWest cannot ascertain. Client also agrees that it shall never seek or otherwise attempt to have AllWest provide any form of such certification, guarantee or warranty in exchange for resolution of any disputes between Client and AllWest, or as a condition precedent to making payment to AllWest for fees and costs owing under this Agreement.

Client understands and agrees that AllWest is not, and has no responsibility as, a generator, operator, treater, storer, transporter, arranger or disposer of hazardous or toxic substances found or identified at the site, including investigation-derived waste. The Client shall undertake and arrange for the removal, treatment, storage, disposal and/or treatment of hazardous material and investigation derived waste (such as drill cuttings) and further, assumes full responsibility for such wastes to the complete exclusion of any responsibility, duty or obligation upon AllWest. AllWest's responsibilities shall be limited to recommendations regarding such matters and assistance with appropriate arrangements if authorized by Client.

FORCE MAJUERE

7. Neither party shall be responsible for damages or delays in performance under this Agreement caused by acts of God, strikes, lockouts, accidents or other events or condition (other than financial inability) beyond the other Party's reasonable control.

TERMINATION

8. This Agreement may be terminated by either party upon ten (10) days' written notice should the other party substantially fail to perform in accordance with its duties and responsibilities as set forth in this Agreement and such failure to perform is through no fault of the party initiating the termination. Client agrees that if it chooses to terminate AllWest for convenience, and AllWest has otherwise satisfactorily performed its obligations under this Agreement to that point, AllWest shall be paid no less than eighty percent (80%) of the contract price, provided, however, that if AllWest shall have completed more than eighty percent of the Work at the time of said termination, AllWest shall be compensated as provided in the Work Authorization for all services performed prior to the termination date which fall within the scope of work described in the Work Authorization and may as well, at its sole discretion and in accordance with said Schedule of Fees, charge Client, and Client agrees to pay AllWest's reasonable costs and labor in winding up its files and removing equipment and other materials from the Project.

Upon notice of termination by Client to AllWest, AllWest may issue notice of such termination to other consultants, contractors, subcontractors and to governing agencies having jurisdiction over the Project, and take such other actions as are reasonably necessary in order to give notice that AllWest is no longer associated with the Project and to protect AllWest from claims of liability from the work of others.

DOCUMENTS

9. Any documents prepared by AllWest, including, but not limited to proposals, project specifications, drawings, calculations, plans and maps, and any ideas and designs incorporated therein, as well as any reproduction of the above are instruments of service and shall remain the property of AllWest and AllWest retains copyrights to these instruments of service. AllWest grants to Client a non-exclusive license to use these instruments of service for the purpose of completing and maintaining the Project. The Client shall be permitted to retain a copy of any instruments of service, but Client expressly agrees and acknowledges that the instruments of service may not be used by the Client on other projects, or for any other purpose, except the project for which they were prepared, unless Client first obtains a written agreement expanding the license to such use from AllWest, and with appropriate compensation to AllWest. Client further agrees that such instruments of service shall not be provided to any third parties without the express written permission of AllWest.

Client shall furnish, or cause to be furnished to AllWest all documents and information known to Client that relate to the identity, location, quantity, nature, or characteristics of any asbestos, PCBs, or any other hazardous materials or waste at, on or under the site. In addition, Client will furnish or cause to be furnished such reports, data, studies, plans, specifications, documents and other information on surface or subsurface site conditions, e.g., underground tanks, pipelines and buried utilities, required by AllWest for proper performance of its services. IF Client fails to provide AllWest with all hazardous material subject matter reports including geotechnical assessments in its possession during the period that AllWest is actively providing its services (including up to 30 days after its final invoice), Client shall release AllWest from any and all liability for risks and damages the Client incurs resulting from its reliance on AllWest's professional opinion. AllWest shall be entitled to rely upon Client - provided documents and information in performing the services required in this Agreement; however, AllWest assumes no responsibility or liability for the accuracy or completeness of Client-provided documents. Client-provided documents will remain the property of the Client.

ACCESS TO PROJECT

10. Client grants to AllWest the right of access and entry to the Project at all times necessary for AllWest to perform the Work. If Client is not the owner of the Project, then Client represents that Client has full authority to grant access and right of entry to AllWest for the purpose of AllWest's performance of the Work. This right of access and entry extends fully to any agents, employees, contractors or subcontractors of AllWest upon reasonable proof of association with AllWest. Client's failure to provide such timely access and permission shall constitute a material breach of this Agreement excusing AllWest from performance of its duties under this Agreement.

CONFIDENTIAL INFORMATION

11. Both Client and AllWest understand that in conjunction with AllWest's performance of the Work on the project, both Client and AllWest may receive or be exposed to Proprietary Information of the other. As used herein, the term "Proprietary Information" refers to any and all information of a confidential, proprietary or secret nature which may be either applicable to, or relate in any way to: (a) the personal, financial or other affairs of the business of each of the Parties, or (b) the

research and development or investigations of each of the Parties. Proprietary Information includes, for example and without limitation, trade secrets, processes, formulas, data, know-how, improvements, inventions, techniques, software technical data, developments, research projects, plans for future development, marketing plans and strategies. Each of the Parties agrees that all Proprietary Information of the other party is and shall remain exclusively the property of that other party. The parties further acknowledge that the Proprietary Information of the other party is a special, valuable and unique asset of that party, and each of the Parties agrees that at all times during the terms of this Agreement and thereafter to keep in confidence and trust all Proprietary Information of the other party, whether such Proprietary Information was obtained or developed by the other party before, during or after the term of this Agreement. Each of the Parties agrees not to sell, distribute, disclose or use in any other unauthorized manner the Proprietary Information of the other party. AllWest further agrees that it will not sell, distribute or disclose information or the results of any testing obtained by AllWest during the performance of the Work without the prior written approval of Client unless required to do so by federal, state or local statute, ordinance or regulation.

INDEPENDENT CONTRACTOR

12. Both Client and AllWest agree that AllWest is an independent contractor in the performance of the Work under this Agreement. All persons or parties employed by AllWest in connection with the Work are the agents, employees or subcontractors of AllWest and not of Client. Accordingly, AllWest shall be responsible for payment of all taxes arising out of AllWest's activities in performing the Work under this Agreement.

ENTIRE AGREEMENT

13. This Agreement contains the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes and replaces in its entirety all prior and contemporaneous proposals, agreements, representations and understandings of the Parties. The Parties have carefully read and understand the contents of this Agreement and sign their names to the same as their own free act.

INTEGRATION

14. This is a fully integrated Agreement. The terms of this Agreement may be modified only by a writing signed by both Parties. The terms of this Agreement were fully negotiated by the Parties and shall not be construed for or against the Client or AllWest but shall be interpreted in accordance with the general meaning of the language in an effort to reach the intended result.

MODIFICATION / WAIVER / PARTIAL INVALIDITY

15. Failure on the part of either party to complain of any act or omission of the other, or to declare the other party in default, shall not constitute a waiver by such party of its rights hereunder. If any provision of this Agreement or its application be unenforceable to any extent, the Parties agree that the remainder of this Agreement shall not be affected and shall be enforced to the greatest extent permitted by law.

INUREMENT / TITLES

16. Subject to any restrictions on transfers, assignments and encumbrances set forth herein, this Agreement shall inure to the benefit of and be binding upon the undersigned Parties and their respective heirs, executors, legal representatives, successors and assigns. Paragraph titles or captions contained in this Agreement are inserted only as a matter of convenience, and for reference only, and in no way limit, define or extend the provisions of any paragraph. , et al., incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled.

AUTHORITY

17. Each of the persons executing this Agreement on behalf of a corporation does hereby covenant and warrant that the corporation is duly authorized and existing under the laws of its respective state of incorporation, that the corporation has and is qualified to do business in its respective state of incorporation, that the corporation has the full right and authority to enter into this Agreement, and that each person signing on behalf of the corporation is authorized to do so. If the Client is a joint venture, limited liability company or a partnership, the signatories below warrant that said entity is properly and duly organized and existing under the laws of the state of its formation and pursuant to the organizational and operating document of the entity, and the laws of the state of its formation, said signatory has authority act on behalf of and commit the entity to this Agreement.

COUNTERPARTS

18. This Agreement may be signed in counterparts by each of the Parties hereto and, taken together, the signed counterparts shall constitute a single document.

THIRD PARTY BENEFICIARIES / CONTROLLING LAW

19. There are no intended third party beneficiaries of this Agreement. The services, data & opinions expressed by AllWest are for the sole use of the client, are for a particular project and may not be relied upon by anyone other than the client. This Agreement shall be controlled by the laws of the State of California and any action by either party to enforce this Agreement shall be brought in San Francisco County, California.

TIME BAR TO LEGAL ACTION

20. Any legal actions by either party against the other related to this Agreement, shall be barred after one year has passed from the time the claimant knew or should have known of its claim, and under no circumstances shall be initiated after two years have passed from the date by which AllWest completes its services.