Allterra Environmental, Inc.
849 Almar Avenue, Suite C
No. 281
Santa Cruz, California 95060

Client: Manwel Shuwayhat
Project Location: 160 Holmes Street, Livermore, California
Subject: Well Destruction and Waste Materials Removal Report
Report Date: May 25, 2016

To Whom It May Concern:

I have reviewed the report referenced above and approve its distribution to the necessary regulatory agencies. Should any of the regulatory agencies require it, "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached proposal or report is true and correct to the best of my knowledge."

Sincerely,

Manwel Shuwayhat

Well Destruction and Waste Materials Removal Report
Fuel Leak Case No. RO0000324, Livermore Gas and Mini Mart
160 Holmes Street, Livermore, California

Date:
May 25, 2016

Project No.:
160

Prepared For:
Livermore Gas and Mini Mart
Attention: Manwel and Samira Shuwayhat
54 Wolfe Canyon Road
Kentfield, California 94904

Allterra Environmental, Inc.
849 Almar Avenue, Suite C, No. 281
Santa Cruz, California 95060

Phone: (831) 425-2608
Fax: (831) 425-2609
http://www.allterraenv.com

May 25, 2016

Manwel and Samira Shuwayhat
54 Wolfe Canyon Road
Kentfield, California 94904

Subject: **Well Destruction and Waste Materials Removal Report, Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California**

Dear Mr. and Mrs. Shuwayhat:

On your behalf, Allterra Environmental, Inc. (Allterra) has prepared this *Well Destruction and Waste Materials Removal Report* for the property located at 160 Holmes Street in Livermore, California (Site). The report documents the destruction of nineteen (19) monitoring/extraction wells located at and proximate to the Site, removal of all investigation/remediation derived wastes from the Site, and is intended to provide the Alameda County Environmental Health (ACEH) with the information required to finalize case closure.

Site Location and Description
The Site is located at the northeast intersection of Holmes Street and Second Street in Livermore, California (Figure 1). The Site is currently occupied by a gasoline service station and minimart. The surrounding area is primarily residential with scattered retail businesses along 1st and 2nd Streets. The approximate surface elevation at the Site is 465 feet above mean sea level and the surface slightly slopes to the northwest. Pertinent site features, including the locations of the former existing monitoring and extraction wells are presented on Figure 2.

Permitting
Prior to field activities, well destruction permits were obtained from Zone 7 Water Agency (Zone 7). Wells permitted for destruction included MW-1A through MW-9B and EW-1 through EW-3B. A Copy of the approved Zone 7 permit is included as Appendix A. Additionally, a revocable encroachment permit was obtained from the City of Livermore for work performed in the public right-of-way (Appendix B).

Field Activities
On May 2 and 3, 2016, a total of nineteen monitoring/extraction wells (MW-1 through MW-9B, and EW-1 through EW-3B) were destroyed by tremie and/or free fall grouting (free fall for dry wells) each well from total depth to 2 feet below surface grade. Following grouting activities, each well was pressurized to 25 psi and maintained for a minimum of 5 minutes to push the sealing material through the well screen perforations and into the surrounding earth materials. Following completion of pressurizing activities, each pressure fitting was removed and the

remaining empty casing was filled to surface grade with neat cement. Upon completion of grouting and pressurizing activities, well box materials were removed and each well box cavity was filled to surface grade with neat cement (or compacted fill material for wells located in park/landscaping areas). With oversight provided by Allterra, all wells were destroyed in accordance with California Department of Water Resources (DWR) and Zone 7 protocols by Environmental Control Associates, Inc. (C-57 Lic. No. 695970). A Zone 7 representative was on-site during all well destruction activities and all field procedures were performed pursuant to SCVWD recommendations. Upon completing the well destructions, DWR Well Completion Reports were prepared and submitted to Zone 7. The DWR Well Completion Reports are included as Appendix D. The Well Destruction Completion Notices provided by SCVWD are included as Appendix C.

Waste Material Removal

To complete case closure, Allterra has removed all waste piles, drums, debris and other investigation and remediation derived materials. To date, all investigation and remediation derived materials have been properly removed in accordance with local and state requirements. Following submittal of this report, case closure will be complete.

Conclusions

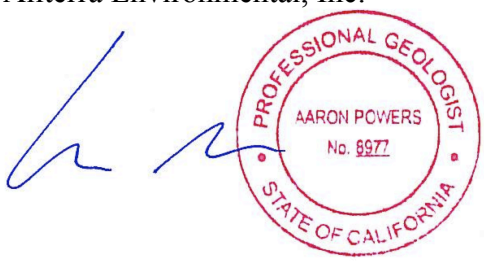
Well destruction activities are complete and all on-site and off-site monitoring/extraction wells were destroyed in accordance with state and local guidelines. All investigation and remediation derived materials have been properly removed in accordance with local and state requirements. The well destructions and waste removal were the final field activities and following submittal of this report, case closure will be complete.

Limitations

Allterra prepared this report for the use of Mr. and Mrs. Shuwayhat, ACEH, Zone 7, and RWQCB in evaluating subsurface conditions at select on-site locations at the time of this study. Statements, conclusions, and recommendations in this report are based solely on the field observations related to work performed by Allterra and there is no warranty, expressed or implied. Site conditions and data can change over time; therefore, data presented in this report is only applicable to the timeframe of this study. Allterra's services have been performed in accordance with environmental principles generally accepted at this time and location.

If you have any questions, please call Allterra at (831) 425-2608.

Sincerely,
Allterra Environmental, Inc.



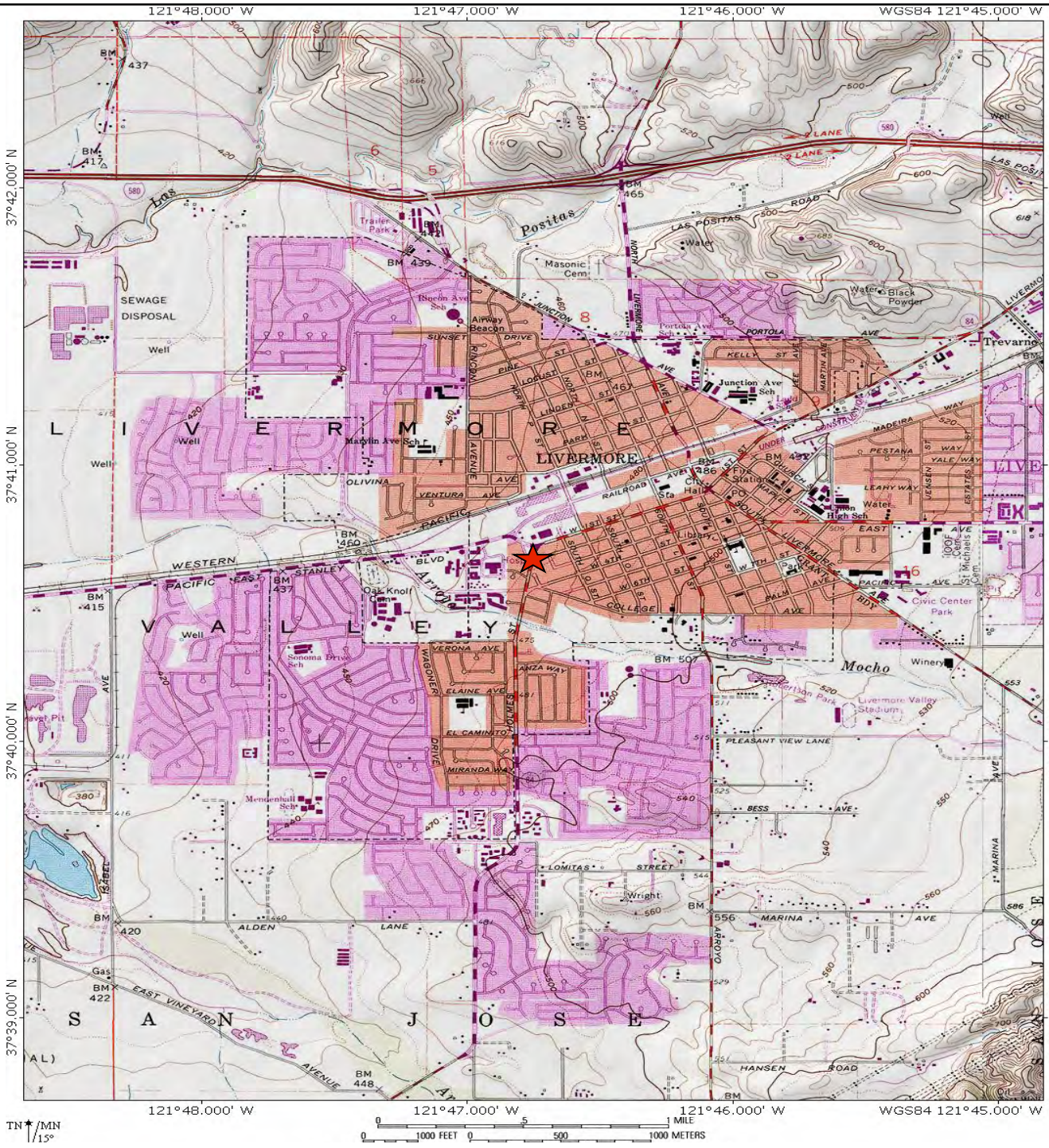
Aaron Powers, P.G 8977
Senior Geologist

List of Figures:
Figure 1: Vicinity Map
Figure 2: Site Plan

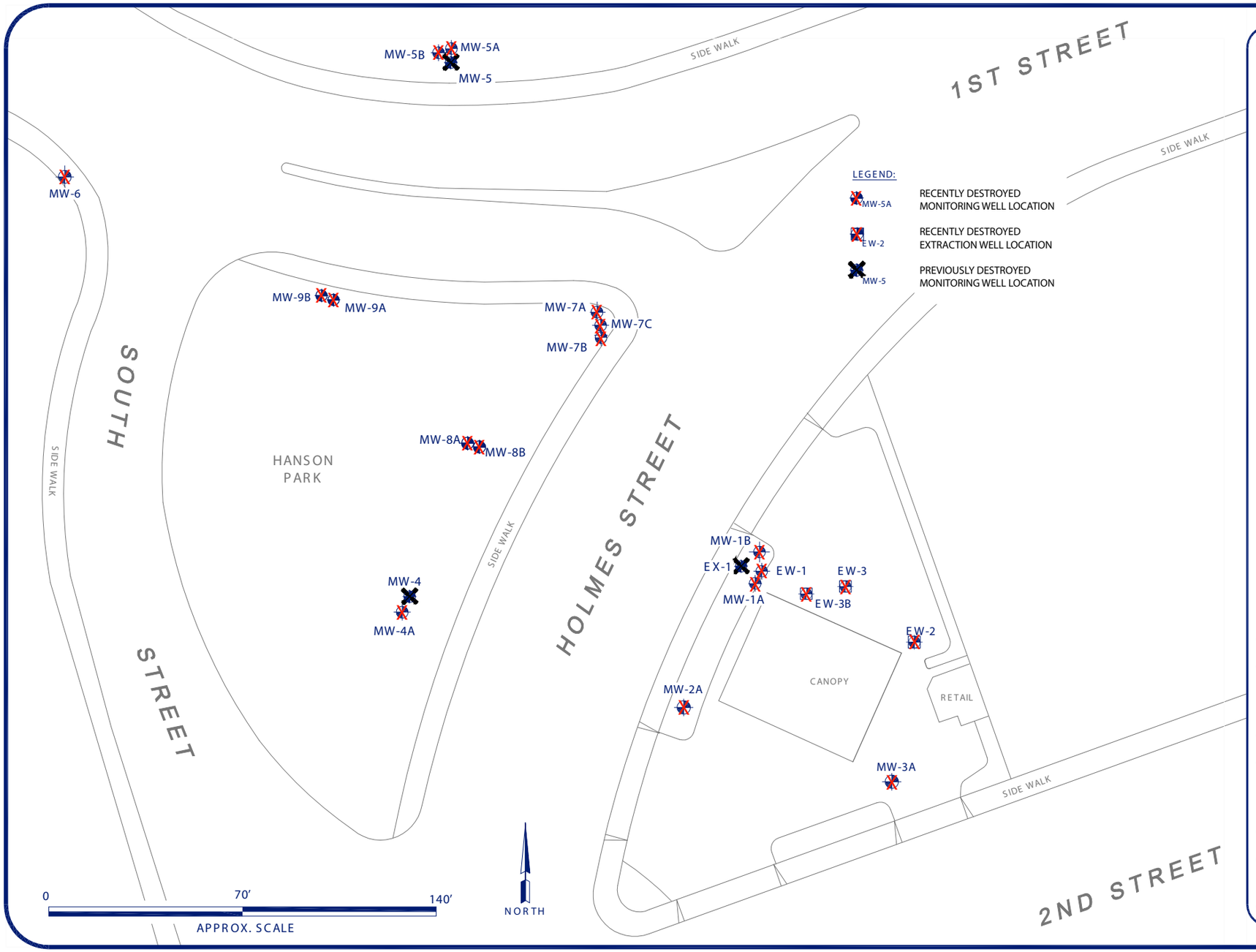
Appendix A: Zone 7 Well Destruction Permit
Appendix B: City of Livermore Encroachment Permit
Appendix C: DWR Well Completion Reports

cc: Anne Jurek, ACEH
Mitch Buttress, Zone 7 Water Agency

FIGURES 1 - 2



Vicinity Map Livermore Gas and Minimart 160 Holmes Street Livermore, California	Figure 1	5/19/16
	ALLTERRA ENVIRONMENTAL 849 Almar Avenue, Suite C, No. 281 Santa Cruz, California http://www.allterraenv.com	



General Notes

stamp

160 HOLMES STREET, LIVERMORE, CALIFORNIA
WELL DESTRUCTION REPORT

PREPARED BY :

ALLTERRA ENVIRONMENTAL

No.	Revision/Issue	Date
0	DRAFT/REVIEW	5/25

Firm Name and Address

ALLTERRA ENVIRONMENTAL, INC.
849 ALMAR AVE., SUITE C, No. 281
SANTA CRUZ, CALIFORNIA
831-425-2608 FAX 831-425-2609
www.allterraenv.com

Sheet Name and Address

SITE PLAN

WELL DESTRUCTION REPORT

Project	Sheet
160	FIGURE 2
Date: 5/25/16	
Scale: see drawing	

APPENDIX A
Zone 7 Well Destruction Permit

APPLICATION FOR DRILLING PERMIT

Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
(925) 454-5000
wellpermits@zone7water.com

For Office Use

Permit No.: 2016035	Permit Date: 3/10/16	Receipt No.: 719137	Well No.: see attached

For Applicant to Complete

Applicant: Allterra Environmental, Inc.	Client: Manuel Shuwayhat
Address: 849 Almar Ave., Suite C No. 281	Address: 54 Wolfe Canyon Road
City, State, Zip: Santa Cruz, CA 95060	City, State, Zip: Kentfield, CA 94550
Phone: 831 425 2008 Email: aaron@allterraenv.com	Phone: 415 461 9557 Email: mshuwayhat@gmail.com

Site

Project Location: 160 Holmes Street Livermore, CA 94550

Is Client the Property Owner? (Y) N (If not, attach Prop. Owner Info)

Assessor's Parcel Number: 97-82-7-7

GeoTracker or EnviroStor ID: 14294

Latitude: Longitude:

Project Type

- ☐ Well Construction ($397/well)
- ☒ Well Destruction ($397/well)

Proposed or Previous Well Use:

- ☐ Domestic
- ☐ Irrigation
- ☐ Cathodic Protection
- ☐ Geothermal
- ☐ Inclinometer
- ☐ Municipal
- ☐ Dewatering
- ☐ Industrial
- ☒ Monitoring
- ☐ Other: _____

☐ Exploratory Borings ($265/site)

Type of Investigation:

- ☐ Geotechnical
- ☐ Environmental
- ☐ Soil Vapor
- ☐ Other: _____

☐ Remediation System ($265/site)

Type of System:

- ☐ Groundwater Extraction
- ☐ Vapor Extraction
- ☐ In-Situ Treatment
- ☐ Other: _____

Drilling

Drilling Method

- ☐ Mud Rotary
- ☐ Air Rotary
- ☐ Cable Tool
- ☐ Hollow Stem Auger
- ☐ Direct Push
- ☐ Other: _____

Drilling Company: Environmental Control Associates

Driller's C57 License No.: 695970

Well Specs

Owner Well ID	Borehole Diameter	Casing Material	Casing Diameter	Surface Seal Depth	Total Well Depth
MW-1A	8.25"	Sch 40 pvc	2"	13 feet bgs	30 feet bgs
see attached list: Total of 19 monitoring wells					

For Well Destruction Projects

Destruction Method: ☐ Perforate (Mills Knife) ☒ Pressure Grout ☐ Drill Out ☐ Other: _____

For Exploratory Boring Projects

Number of Borings:	Borehole Diameter:	Maximum Depth:	Estimated Depth-to-Water:

For All Projects

Estimated Starting Date: April 1st 2016 Estimated Completion Date: April 10th 2016

*** Please attach a Site Plan including all proposed drilling locations, existing wells, significant site features, and adjacent streets ***

I hereby agree to comply with all requirements of this permit (see Page 2) and Alameda County Ordinance No. O-2015-20.

Applicants Signature: _____ Date: 2.29.16

For Office Use

Approved: Wyman Hong Date: 3/10/16

Rev 01/20/2016

March 29, 2016

Zone 7
Water Resources Engineering
Groundwater Protection Ordinance

Livermore Gas and Mini-Mart
160 Holmes Street
Livermore
Wells MW-1A, MW-1B, MW-2A, MW-3A, MW-4A, MW-5A, MW-5B, MW-6, MW-7A, MW-7B, MW-7C, MW-8A, MW-8B, MW-9A, MW-9B, EW-1 to EW-3 & EW-3B
Permit 2016035

Destruction Requirements:

1. Remove from the well any pump, appurtenances, debris, or other materials.

2. Sound the well as deeply as practicable and record for your report.

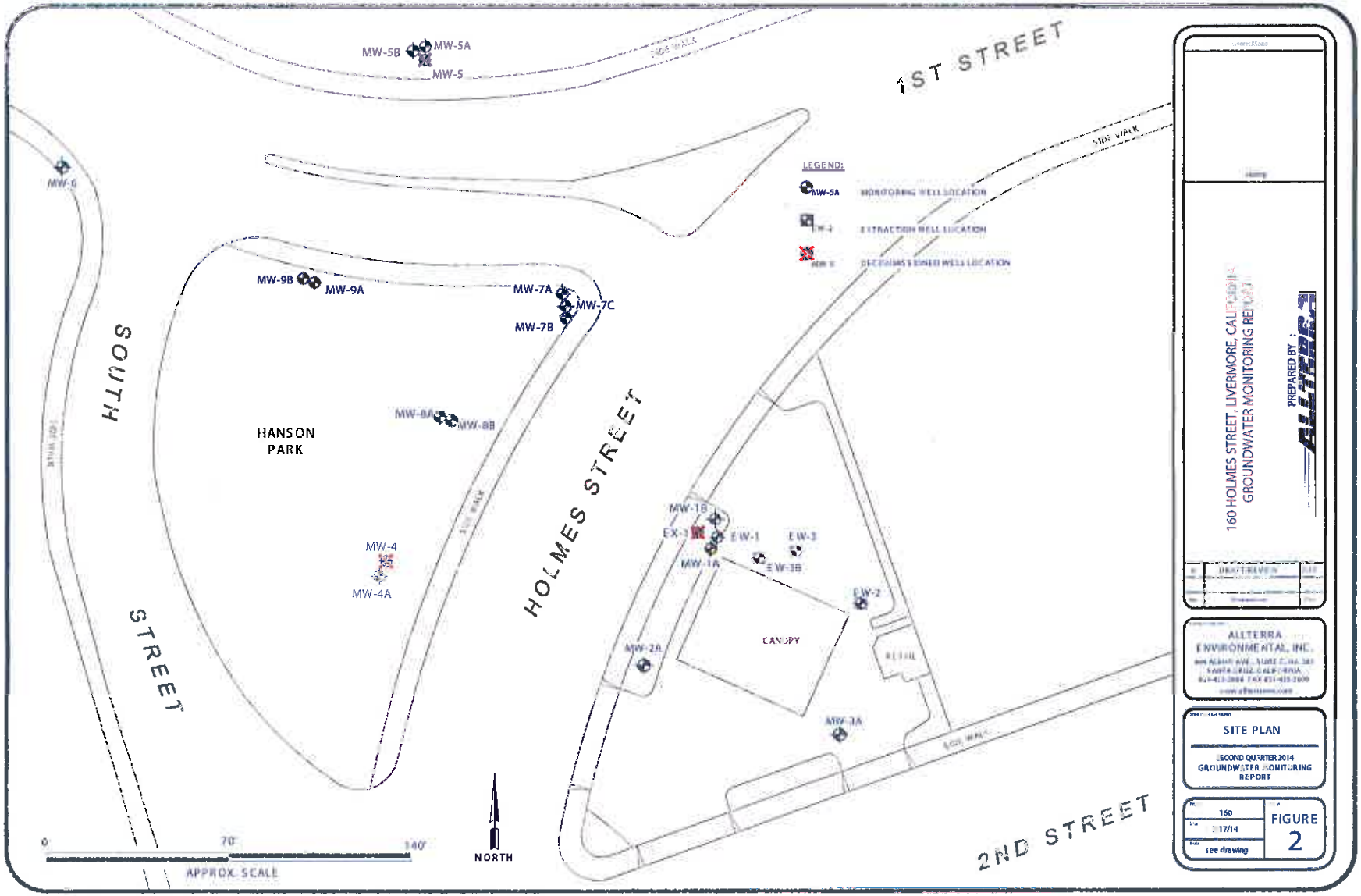
3. Fill casing with neat cement or cement grout sealing material to two feet below the finished grade and pressurize to 25 psi and maintain for 5 minutes, forcing the sealing material through the existing perforations and into the surrounding formation.

4. Release the pressure and refill the empty portion of the casing with grouting material allowing it to spill over the top of the casing to form a cap.

5. Cut and remove any casing(s) to two feet below the finished grade or original ground, whichever is the lower elevation (optional).

6. After seal has set, backfill the remaining hole with compacted material.

STATE WELL#	OWNER WELL#	DEPTH (FT)	DIA (IN)	UP PERF (FT)	LOW PERF (FT)	STATUS
	MW-1A	30	2			
	MW-1B	55	2			
	MW-2A	30	2			
	MW-3A	30	2			
	MW-4A	30	2			
	MW-5A	30	2			
	MW-5B	56	2			
3S/2E-17C28	MW-6	50	2	20	50	
	MW-7A	30	2			
	MW-7B	50	2			
	MW-7C	70	2			
3S/2E-17C34	MW-8A	36	2			
3S/2E-17C35	MW-8B	51	2			
3S/2E-17C37	MW-9A	36	2			
3S/2E-17C38	MW-9B	52	2			
	EW-1	30	4			
	EW-2	30	4			
3S/1E-17C33	EW-3	35	4	25	30	
3S/2E-17C41	EW-3B	39	4			


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
STREET
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
HOLMES STREET
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
CANOPY
MW-2B
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
ALLTERRA
ALLTERRA
ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
160
8/17/14
see drawing
FIGURE
2

March 1, 2016
Project No.: 160

Wyman Hong
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, California 94551

SUBJECT: Well Destruction Permit Applications, Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California

Dear Mr. Hong:

On behalf of Manwel and Samira Shuwayhat, Allterra Environmental, Inc. (Allterra) is submitting these well destruction permit applications for the above referenced site. Alameda County Environmental Health Services (ACEHS) has issued a directive to destroy the existing monitoring/extraction wells associated with the above referenced case and this is the final step to case closure.

Eight (8) of the wells are located at the 160 Holmes Street property (APN 97-82-7-7). The remaining eleven (11) wells are located in the public right of way owned by the City of Livermore (see attached Site Plan). An encroachment permit will be obtained from the City of Livermore Public Works Department prior to any well destruction field activities associated with these off-site wells.

Should you have any questions or need any additional information please contact me at (831) 454-6494.

Sincerely,
Allterra Environmental, Inc.

Aaron Powers, P.G.
Project Geologist

RECEIPT

DATE 3/9/16 No. 719137

RECEIVED FROM AllTERRA Environmental $ 7543 00/100

Seven Thousand Five Hundred Forty-Three and 00/100 DOLLARS

○ FOR RENT
⊘ OR Permit # 2016035 Check # 11819

ACCOUNT		
PAYMENT	7543.00	
BAL. DUE	∅	

○ CASH
⊘ CHECK
○ MONEY ORDER
○ CREDIT CARD

FROM Zone 7 Water TO

BY Amanda Ross

A-2701
4080046802

APPENDIX B
City of Livermore Encroachment Permit

APPLICANT

City of Livermore

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

Encroachment
Permit No. EN160156
Type: Other

PERMIT TO DO WORK IN ACCORDANCE WITH CHAPTER 12.08 OF THE LIVERMORE MUNICIPAL CODE AND SPECIFICATIONS AS ADOPTED BY THE CITY OF LIVERMORE AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Inspection Fee - EN - 2016	$330.00
Permit Fee - BU - 2028	$90.00
Total:	***$420.00***

Applicant/Permittee:
Name: Allterra Environmental - Aaron Powers
Address: 207 McPherson St., Ste. B
Santa Cruz CA, 95060
Phone: 831-425-2608

Contractor:
Name:
Address:
Phone:

PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR AN INSPECTION, PHONE (925) 960-4500 AT LEAST 24 HOURS BEFORE YOU START WORK.

JOB LOCATION: 160 HOLMES ST , LIVERMORE 94550

DESCRIPTION OF WORK: Monitoring well destruction field activities. Pressure grout existing monitoring wells, remove all other well materials for 11 wells in ROW (site plan attached). PM# .

Attention is directed to the General Provisions printed on the reverse side of this permit and to the attached special requirements (to be determined as needed by the Engineering Division).

Prosecution of Work: All work authorized by the permit shall be performed in a workmanlike, diligent, and expeditious manner, and must be completed to the satisfaction of the City Engineer.

Liability and Damages: The permittee shall be responsible for all liability imposed by law for personal injury or property damage which may arise out of the work permitted and done by permittee under this permit, or which may arise out of the failure on the part of the permittee to perform his obligations under said permit in respect to maintenance and encroachment. The permittee shall protect and indemnify the City of Livermore, its officers and employees, and save them harmless in every way from all action at law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Hold Harmless and Indemnification Agreement: Allterra Environmental - Aaron Powers agrees to defend, indemnify and hold the City of Livermore, elected
officials, officers, directors, employees, agents and volunteers harmless from and against any and all loss, liability, damage, including reasonable attorney and expert fees and/or court costs, arising out of or in connection with this agreement, except for the gross negligence and willful misconduct of the City of Livermore, its elected officials, officers, directors, employees, agents and volunteers.

Allterra Environmental - Aaron Powers
Signature of Permittee:

By: _____

Title: Project Manager

Date: 4.28.16

Date Work Completed: 5.4.16

City Engineer

By: _____

Date of Issue: 4/19/16

Inspector: _____

City of Livermore
Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

Encroachment Permit No. EN160156

SPECIAL REQUIREMENTS APPLICABLE TO WORK ASSOCIATED WITH

JOB LOCATION: *160 HOLMES ST , LIVERMORE 94550*

DESCRIPTION OF WORK: *Monitoring well destruction field activities. Pressure grout existing monitoring wells, remove all other well materials for 11 wells in ROW (site plan attached).*

See Attached Drawing/Plans

Pedestrian access must be maintained at all times, including if necessary, escorting pedestrians through the work area.

LIVERMORE
CALIFORNIA

ENCROACHMENT PERMIT APPLICATION

For Office Use Only

Date Received: _____ Project Number: EN160156

Ready to Issue: _____ Total Fees Required: _____

Notified Applicant By: Telephone/Mail Date Contacted: _____

Project Address: 160 Holmes Street, Livermore, CA 94550 Tract# ____ Lot# ____ APN# 97-82-7-7

Applicant's Name: Aaron Powers Telephone number: 831 454 6494

Applicant's Address: 207 McPherson St, suite B City Santa Cruz State CA Zip 95060

PROPERTY OWNER:

Name: Manwel and Samira shuwayhet

Address: 54 Wolfe Canyon Road

City/Zip: Kentfield, California 94904

Telephone Number: 415 461 9557

CONTRACTOR:

Name: Allterra Environmental, Inc.

Address: 207 McPherson St, suite B

City/Zip: Santa Cruz, CA 95060

Telephone Number: 831 454 6494

Description of work:

Monitoring well destruction field activities. Pressure grout existing monitoring wells, remove all other well materials and fill well cavities to surface grade. Please see cover letter (attached) for a more detailed description of field activities.

See attached site plan.

Document1

Submit applications to:
City Hall Community Development Department
1052 South Livermore Avenue
Livermore, CA 94550
phone: (925) 960-4500
fax: (925) 960-4505
TDD: (925) 960-4104
www.cityoflivermore.net

ALLTERRA
ENVIRONMENTAL

April 4, 2016
Project No.: 160

Joe Kuderca
Community Development Department
1052 South Livermore Avenue
Livermore, California 94550

SUBJECT: Letter of Intent for Encroachment Permit Application
498 South 4th Street, San Jose, California

Dear Mr. Kuderca.

Allterra Environmental, Inc. (Allterra) has prepared this Letter of Intent for the encroachment permit application (attached) associated with 160 Holmes Street in Livermore, California (Site). This letter provides a full description of the proposed environmental construction activities to be performed in the public right of way located near the Site.

Project Description
As the final condition of case closure recently issued by Alameda County Environmental Health (ACEH), all of the existing groundwater monitoring wells associated with the Site need to be properly destroyed. Nine of the wells are located on City of Livermore Property (MW-4A, MW-6, MW-7A, MW-7B, MW-7C, MW-8A, MW-8B, MW-9A, and MW-9B). One of the wells is located on the sidewalk on the west side of South Street (MW-6). The remaining eight wells are located in Hanson Park (wells are located outside of pedestrian walk way areas).

In accordance with Zone 7 Water Agency (Zone 7) requirements (Permit # 2016035) all well casings will be filled with neat cement sealing material and pressurized to 25 psi for a minimum of five minutes. All well boxes and lids will be removed and the remaining cavity will be filled with neat cement to a minimum of two (2) feet below surface grade. The remaining cavity will be filled with compacted earth (in the park) and concrete (on the sidewalk) to surface grade. All well materials will be removed and the well locations will be returned to pre-investigation conditions to the maximum extent feasible. No heavy equipment will be required for the proposed well destruction field activities.

ALLTERRA
ENVIRONMENTAL

March 1, 2016
Project No.: 160

Wyman Hong
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, California 94551

SUBJECT: Well Destruction Permit Applications, Fuel Leak Case No. RO0000324, Livermore Gas and Mini-Mart, 160 Holmes Street, Livermore, California

Dear Mr. Hong:

On behalf of Manwel and Samira Shuwayhat, Allterra Environmental, Inc. (Allterra) is submitting these well destruction permit applications for the above referenced site. Alameda County Environmental Health Services (ACEHS) has issued a directive to destroy the existing monitoring/extraction wells associated with the above referenced case and this is the final step to case closure.

Eight (8) of the wells are located at the 160 Holmes Street property (APN 97-82-7-7). The remaining eleven (11) wells are located in the public right of way owned by the City of Livermore (see attached Site Plan). An encroachment permit will be obtained from the City of Livermore Public Works Department prior to any well destruction field activities associated with these off-site wells.

Should you have any questions or need any additional information please contact me at (831) 454-6494.

Sincerely,
Allterra Environmental, Inc.

Aaron Powers, P.G.
Project Geologist

APPLICATION FOR DRILLING PERMIT

Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
(925) 454-5000
wellpermits@zone7water.com

For Office Use

Permit No.: 2016035	Permit Date: 3/10/16	Receipt No.: 719137	Well No.: see attached

For Applicant to Complete

Applicant: Allterra Environmental, Inc.	Client: Manwel Showayhat
Address: 849 Almar Ave., suite C No. 281	Address: 54 Wolfe Canyon Road
City, State, Zip: Santa Cruz, CA 95060	City, State, Zip: Kentfield, CA 94550
Phone: 831 425 2608 Email: aaron@allterraenv.com	Phone: 415 461 9557 Email: mshowayhat@gmail.com

Site

Project Location: 160 Holmes Street Livermore, CA 94550	Is Client the Property Owner? (Y) N (If not, attach Prop. Owner Info)
	Assessor's Parcel Number: 97-82-7-7
GeoTracker or EnviroStor ID: 14294	Latitude: Longitude:

Project Type

- ☐ Well Construction ($397/well)
- ☒ Well Destruction ($397/well)

Proposed or Previous Well Use:

- ☐ Domestic
- ☐ Irrigation
- ☐ Cathodic Protection
- ☐ Geothermal
- ☐ Inclinometer
- ☐ Municipal
- ☐ Dewatering
- ☐ Industrial
- ☒ Monitoring
- ☐ Other: _____

- ☐ Exploratory Borings ($265/site)

Type of Investigation:

- ☐ Geotechnical
- ☐ Environmental
- ☐ Soil Vapor
- ☐ Other: _____

- ☐ Remediation System ($265/site)

Type of System:

- ☐ Groundwater Extraction
- ☐ Vapor Extraction
- ☐ In-Situ Treatment
- ☐ Other: _____

Drilling

Drilling Method:

- ☐ Mud Rotary
- ☐ Air Rotary
- ☐ Cable Tool
- ☐ Hollow Stem Auger
- ☐ Direct Push
- ☐ Other: _____

Drilling Company: Environmental Control Associates

Driller's C57 License No.: 695970

Well Specs

Owner Well ID	Borehole Diameter	Casing Material	Casing Diameter	Surface Seal Depth	Total Well Depth
MW-1A	8.25"	Sch 40 pvc	2"	18 feet bgs	30 feet bgs
see attached list: Total of 19 monitoring wells					

For Well Destruction Projects

Destruction Method: ☐ Perforate (Mills Knife) ☒ Pressure Grout ☐ Drill Out ☐ Other: _____

For Exploratory Boring Projects

Number of Borings:	Borehole Diameter:	Maximum Depth:	Estimated Depth-to-Water:

For All Projects

Estimated Starting Date: April 1st 2016	Estimated Completion Date: April 10th 2016

* Please attach a Site Plan including all proposed drilling locations, existing wells, significant site features, and adjacent streets *

I hereby agree to comply with all requirements of this permit (see Page 2) and Alameda County Ordinance No. O-2015-20.

Applicants Signature: _____ Date: 2.29.16

For Office Use

Approved: Wyman Hong Date: 3/10/16

Rev 01/20/2016

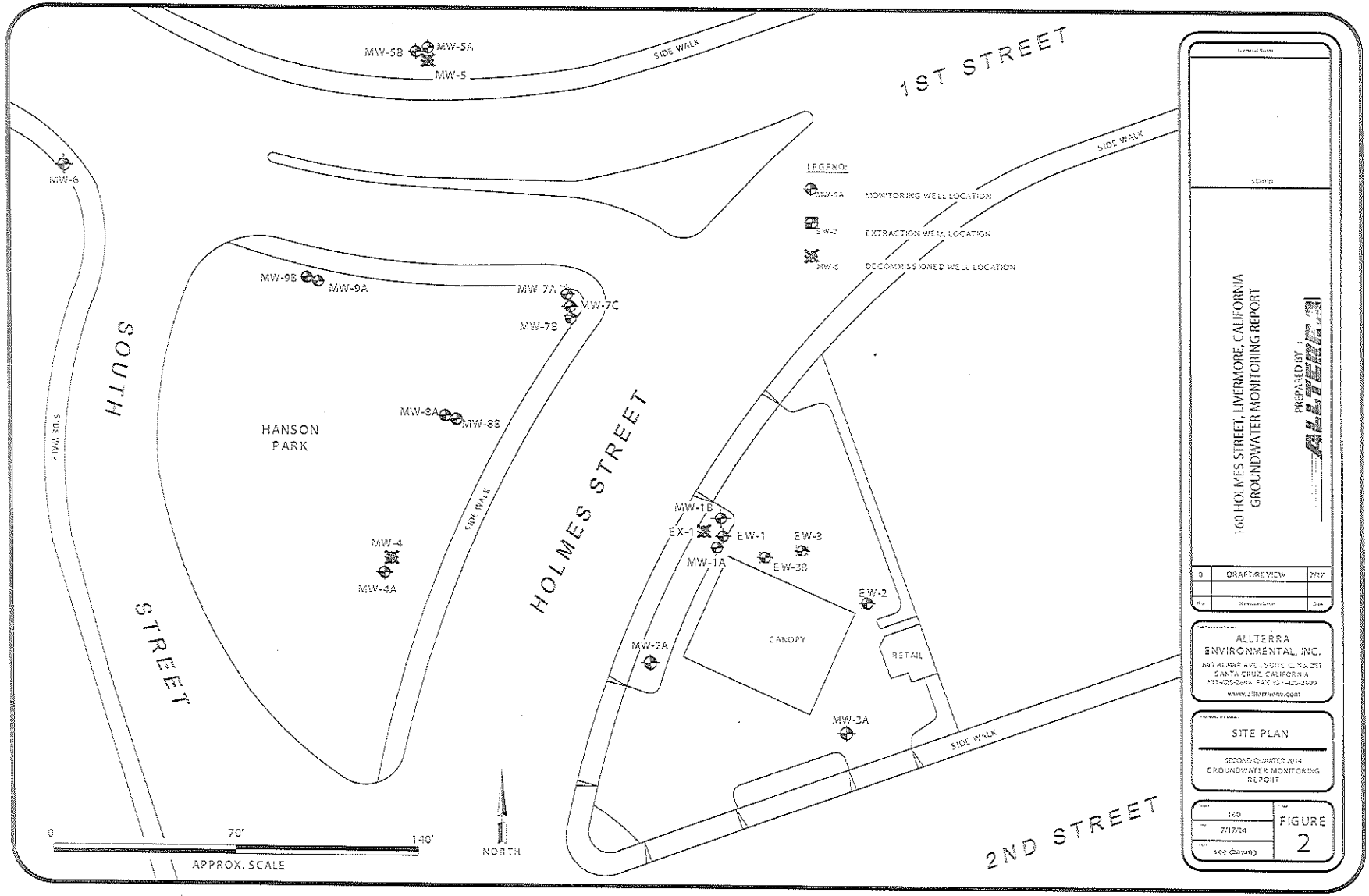
STATE WELL#	OWNER WELL#	DEPTH (FT)	DIA (IN)	UP PERF (FT)	LOW PERF (FT)	STATUS
	MW-1A	30	2			
	MW-1B	55	2			
	MW-2A	30	2			
	MW-3A	30	2			
	MW-4A	30	2			
	MW-5A	30	2			
	MW-5B	56	2			
3S/2E-17C28	MW-6	50	2	20	50	
	MW-7A	30	2			
	MW-7B	50	2			
	MW-7C	70	2			
3S/2E-17C34	MW-8A	36	2			
3S/2E-17C35	MW-8B	51	2			
3S/2E-17C37	MW-9A	36	2			
3S/2E-17C38	MW-9B	52	2			
	EW-1	30	4			
	EW-2	30	4			
3S/1E-17C33	EW-3	35	4	25	30	
3S/2E-17C41	EW-3B	39	4			

APPENDIX C
DWR Well Completion Reports

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
2ND STREET
SOUTH
STREET
HOLMES STREET
SIDE WALK
HANSON
PARK
MW-5B
MW-5A
MW-5
MW-6
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
EW-3B
MW-1A
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY
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REPORT
1:40
7/17/14
FIGURE
2

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WELL COMPLETION REPORT
(WELL LOGS)

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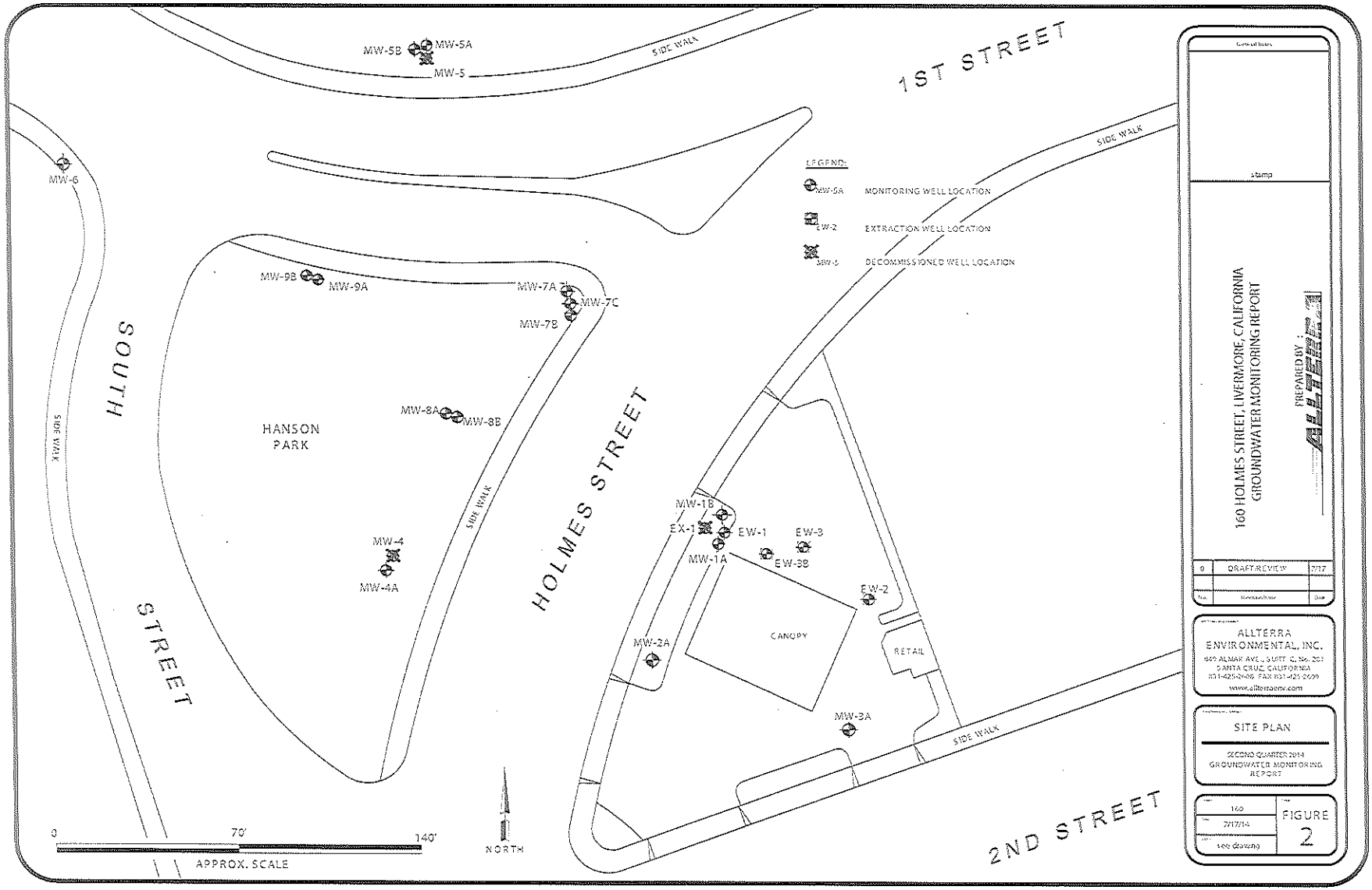
1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
SIDE WALK
STREET
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
HANSON
PARK
MW-4
MW-4A
SIDE WALK
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
Stamp
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
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GROUNDWATER MONITORING
REPORT
160
7/17/14
See drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-1B	Page: 1 of 2

Project Number: 015-01-012
Date: 2/23/06
Location: 160 Holmes St., Livermore, CA
Logged By: JA
Driller: Exploration Geoservices
Drilling Method/Boring Diameter (inches): Hollow stem auger/8
Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring MB-1 was logged continuously for lithology from surface
				6			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				7			information for first 50 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)
2/23/06	11:45	36.05

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID**	**MW-1B** Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/23/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			Boring MB-1 was logged continuously for lithology from surface
				34			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				35		▽	information for first 50 feet
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
	ND			50		GM	Silty gravel, medium brown, 35% medium plasticity fines, 25% medium
				51			to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				52			
				53			
				54			
	ND	7,11,13		55		GM	As above
				56			
	ND		MW-1B@57	57		CL	Silty clay with some fine to medium sand, brown, 60% low to med.
		5,6,10		58			plasticity fines, 40% fine to med. sand, med. stiff, moist, NPO
				59			
				60		CL	As above, 65% low to medium plasticity fines, 35% fine sand
	ND		MW-1B@61	61			

Special Note: Sandy/silty clay was initially encountered at approximately 57 feet bgs. Drilling was continued to 61 feet bgs to verify that the clay layer was significant. After verification, the boring was backfilled with bentonite from 56 to 61 feet. A 1-foot sand transition layer was used above the bentonite

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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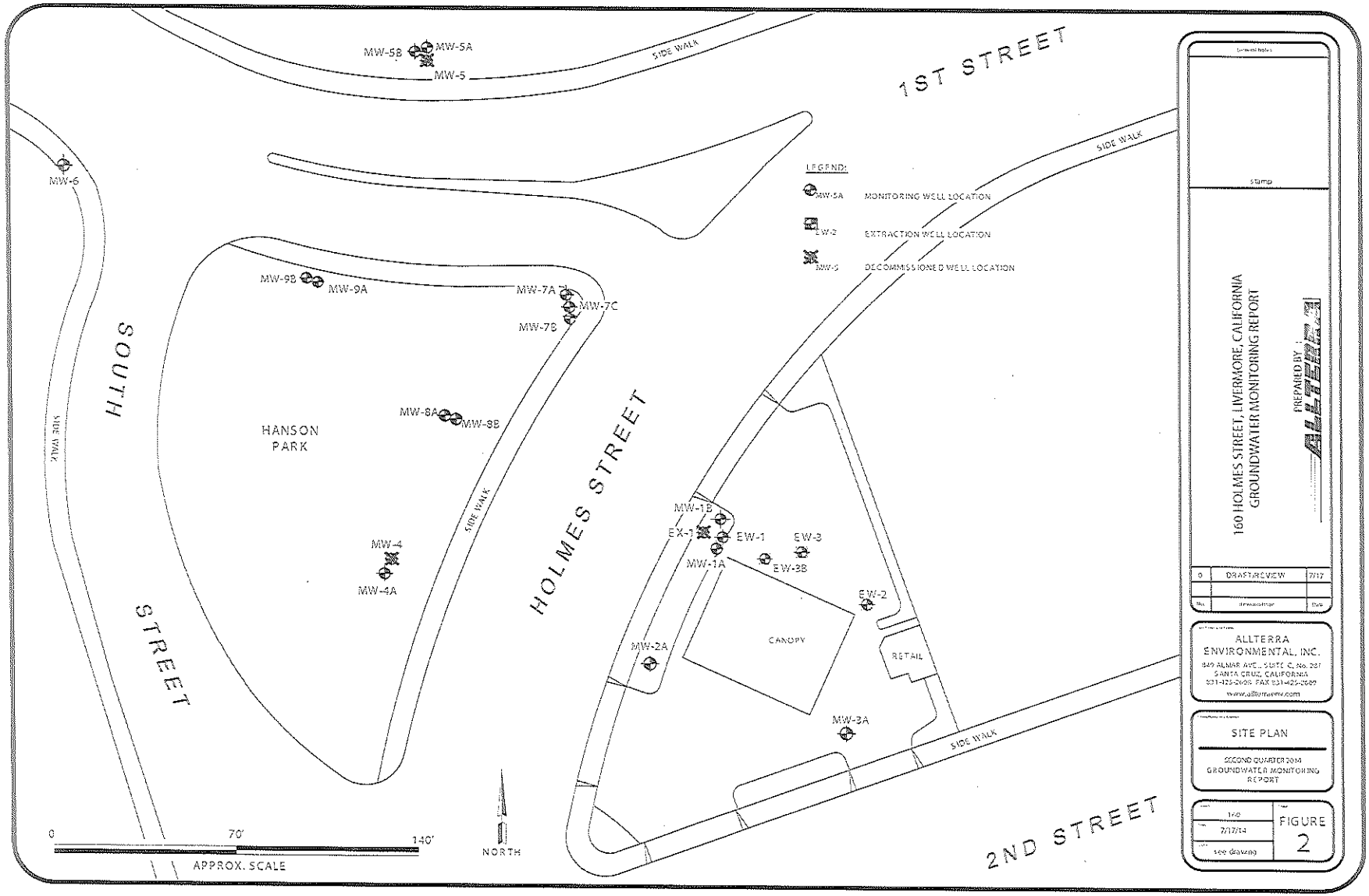
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
2ND STREET
HOLMES STREET
SOUTH
STREET
SIDE WALK
HANSON PARK
CANOPY
RETAIL
MW-5B
MW-5A
MW-5
MW-6
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
MW-3A
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY:
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1=0
7/17/14
see drawing
FIGURE
2

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WELL COMPLETION REPORT
(WELL LOGS)

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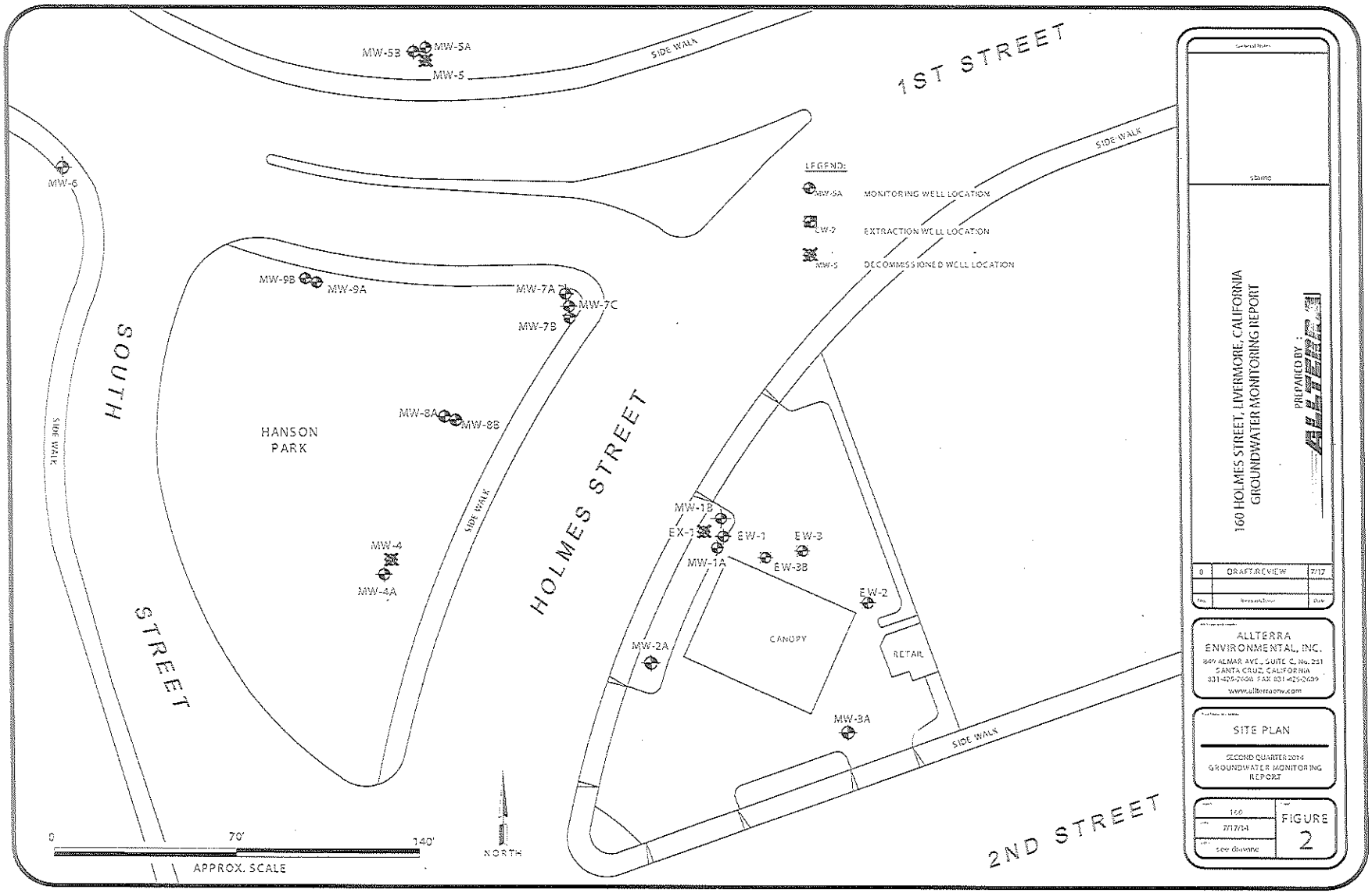
1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
STREET
SIDE WALK
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
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GROUNDWATER MONITORING
REPORT
1:40
7/17/14
see drawing
FIGURE
2

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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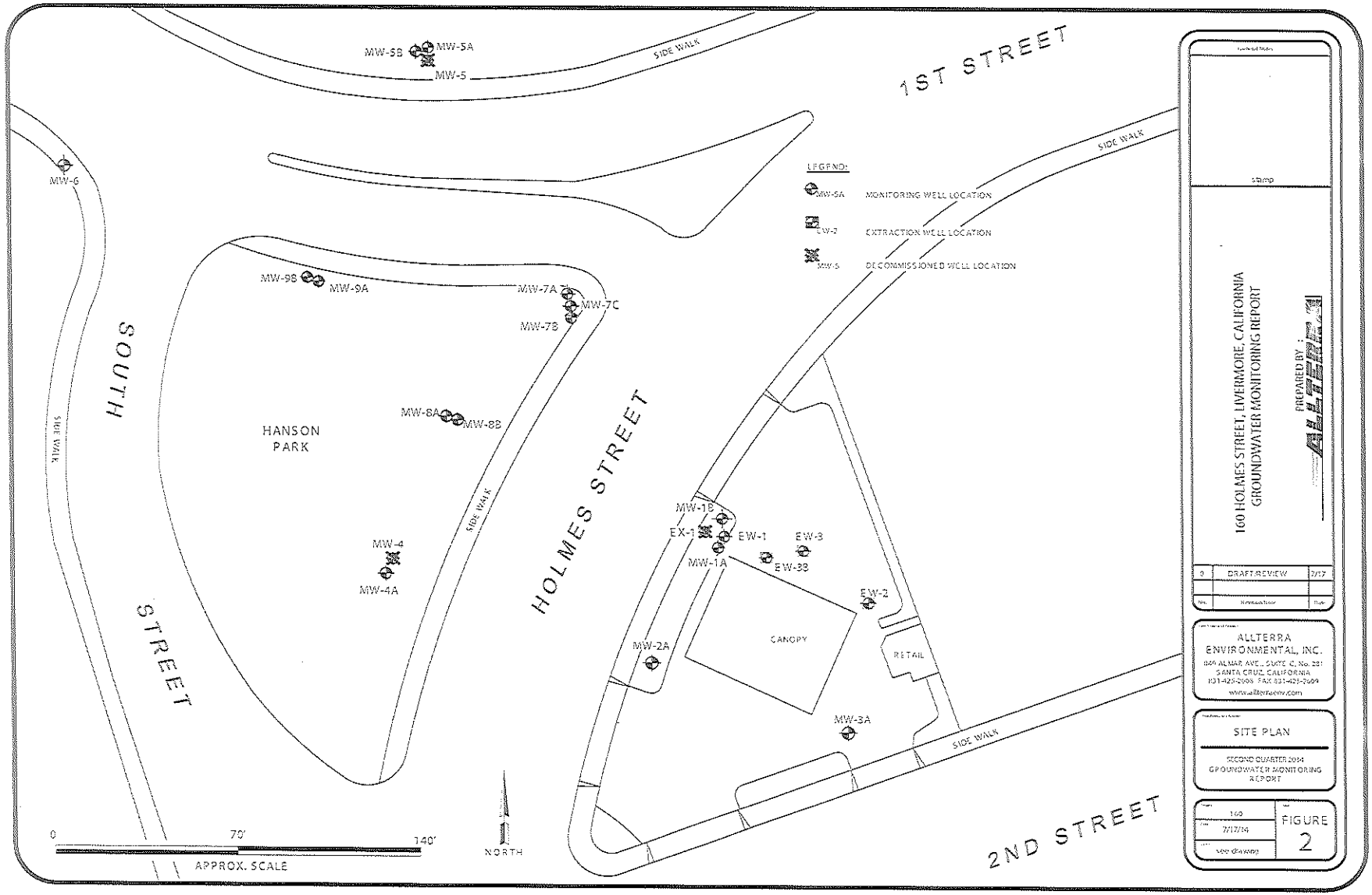
1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
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SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
160
7/17/14
FIGURE
2

ALTER 3

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID**	**MW-4A** Page: 1 of 1
	Project Number: 015-01-012	
	Date: 2/28/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: JA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, 15 to 30 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Well MW-4 (50 feet deep) was drilled within 5 feet of MW-4A, therefore
				6			soil from MW-4A boring was not classified
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			Total depth = 30 feet bgs

Water Level Information

Date	Time	Depth (feet)

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

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(WELL LOGS)

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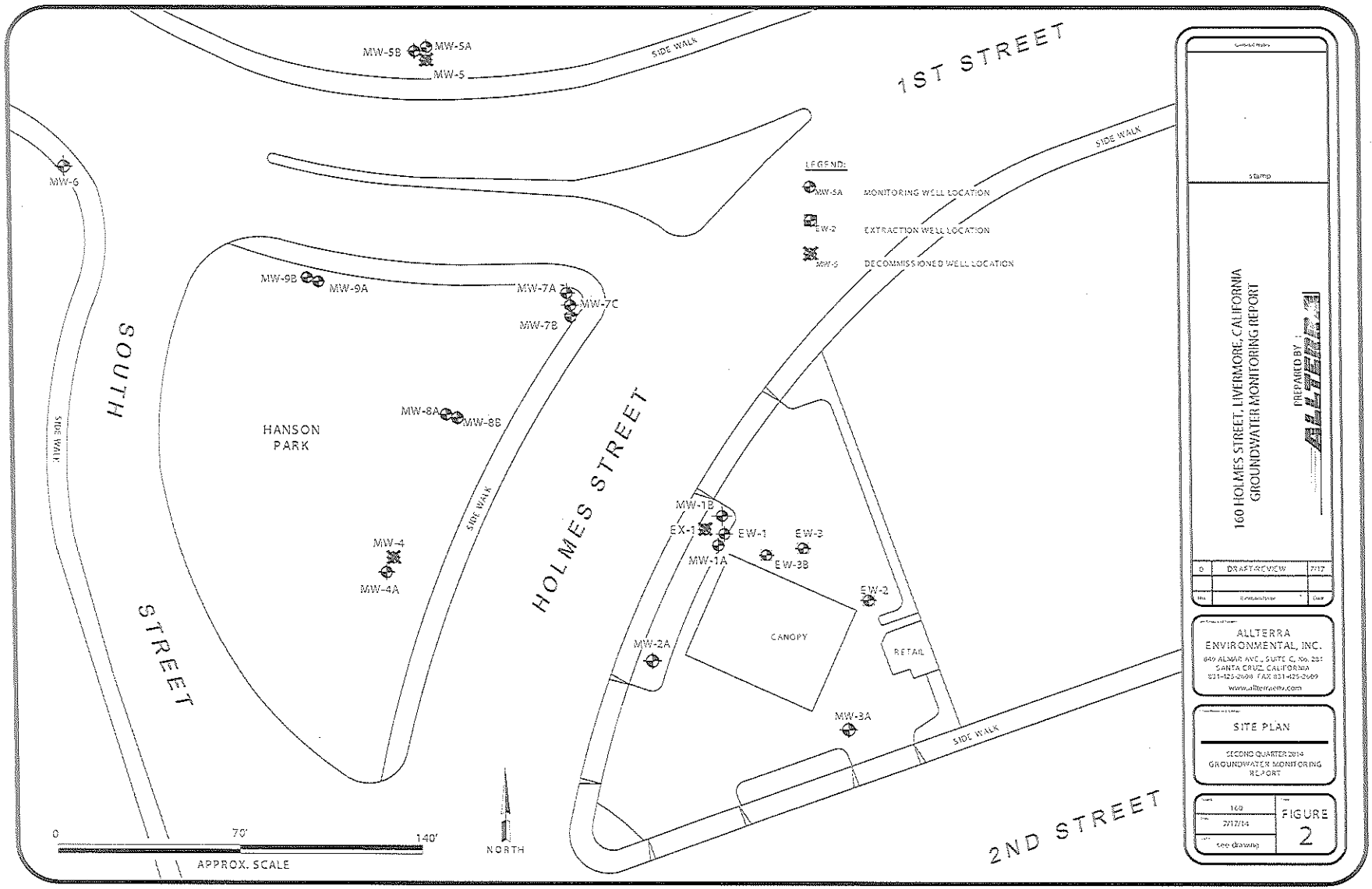
1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
STREET
SIDE WALK
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
HOLMES STREET
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
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REPORT
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See drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-5A	Page: 1 of 2

Project Number: 015-01-012

Date: 2/27/06

Location: 160 Holmes St., Livermore, CA

Logged By: NA

Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 20 to 35 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Landscaping at ground surface
				2			
				3			
				4			
				5			
				6			
				7			Boring MW-5B was sampled for lithology at 5-ft intervals to 40 feet bgs.
				8			See boring log for MW-5B for lithology information
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring	Boring ID	MW-5A	Page: 2 of 2
(See attached Site Plan)	Project Number: 015-01-012		
	Date: 2/27/06		
	Location: 160 Holmes St., Livermore, CA		
	Logged By: NA		
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices		
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 20 to 35 feet below ground surface (bgs)		

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
				35			Total depth = 35 feet bgs
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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WELL COMPLETION REPORT
(WELL LOGS)

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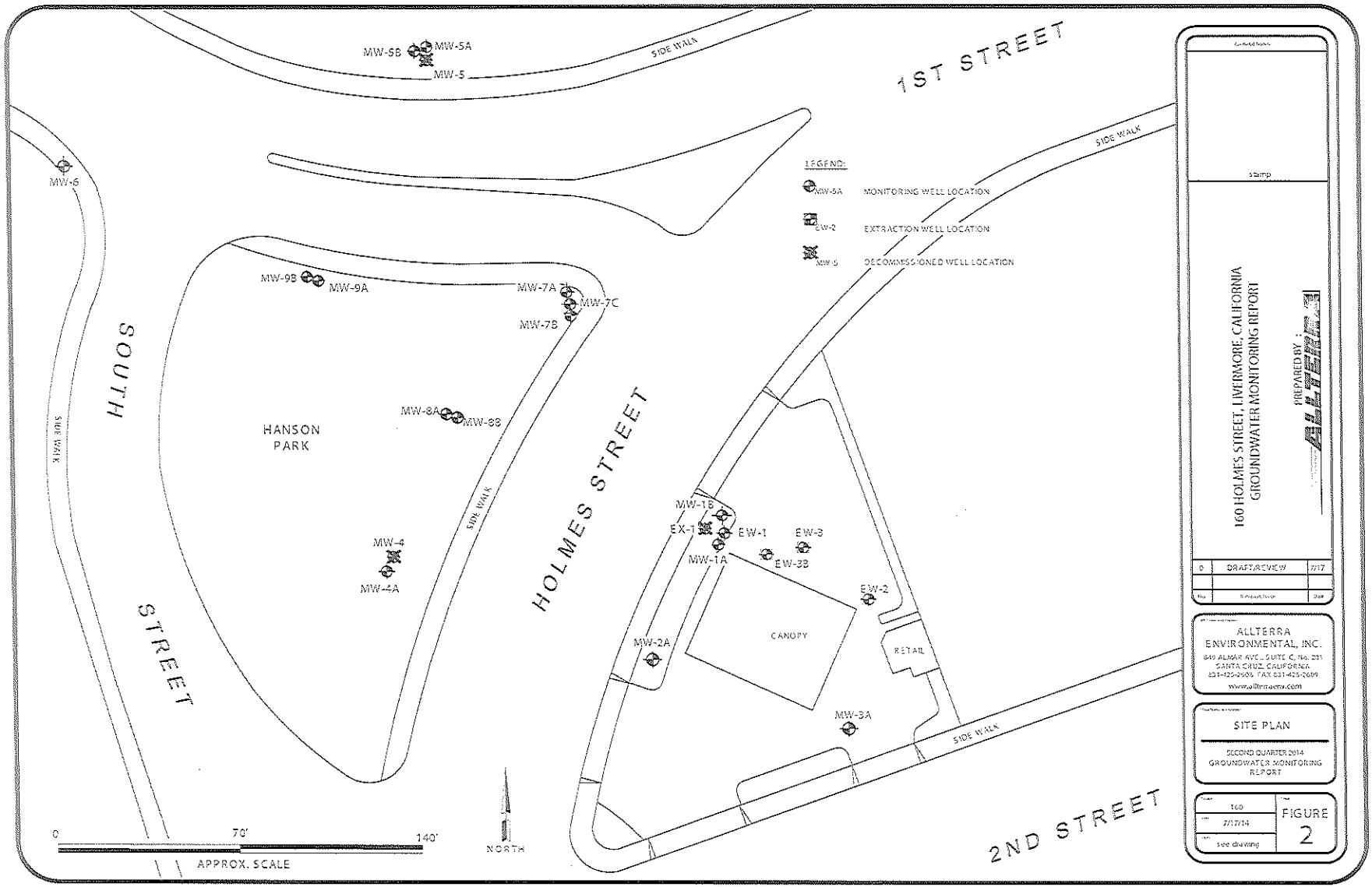
1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
HANSON
PARK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
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REPORT
160
7/17/14
See drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring	Boring ID	MW-5B	Page: 1 of 2
(See attached Site Plan)	Project Number: 015-01-012		
	Date: 2/27/06		
	Location: 160 Holmes St., Livermore, CA		
	Logged By: NA		
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices		
	Casing installation data: 2-inch casing, 8-inch bore hole, 50 to 55 feet below ground surface (bgs) screen interval		

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Landscaping at ground surface
				2			
				3			
				4			
				5		ML	Clayey silt, medium brown, 65% low plasticity fines, 30% fine to coarse
				6			sand, 5%, fine to medium gravel, dry, NPO
				7			
				8			
				9			
	ND			10		ML	As above, moist
				11			
				12			
				13			
				14			
				15		GM	Silty gravel with some sand, light brown, 25% low plasticity fines, 15%
				16			fine to coarse sand, 60% fine to medium gravel, moist, NPO
				17			
				18			
				19			
	ND			20		GM	As above
				21			
				22			
				23			
				24			
	ND			25		CL	Sandy clay, medium brown, 55% low to medium plasticity fines, 45%
				26			fine to coarse sand, moist, NPO
				27			
				28			
				29			
	ND			30		CL	As above, very moist

Water Level Information		
Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-5B	Page: 2 of 2

Project Number: 015-01-012
Date: 2/27/06
Location: 160 Holmes St., Livermore, CA
Logged By: NA
Driller: Exploration Geoservices
Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 50 to 55 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
	ND			35		GM	Silty gravel, medium brown, 35% medium plasticity fines, 25% medium
				36			to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				37			
				38			
				39			
				40			
	ND			41		GM	As above, 20% medium to coarse sand, 45% med. to coarse gravel,
				42			some cobbles
				43			
				44			
				45			
	ND			46		GM	As above, 25% medium to coarse sand, 40% med. to coarse gravel
				47			
				48			
				49			
				50			
	ND			51		GM	As above
				52			
				53			
				54			
	ND		MW-5B@55	55		CL	Silty clay with some fine to medium sand, brown, 65% low to med.
				56			plasticity fines, 35% fine to med. sand, med. stiff, moist, NPO
				57			
				58			
				59			Total depth = 55 feet bgs
				60			
				61			

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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(WELL LOGS)

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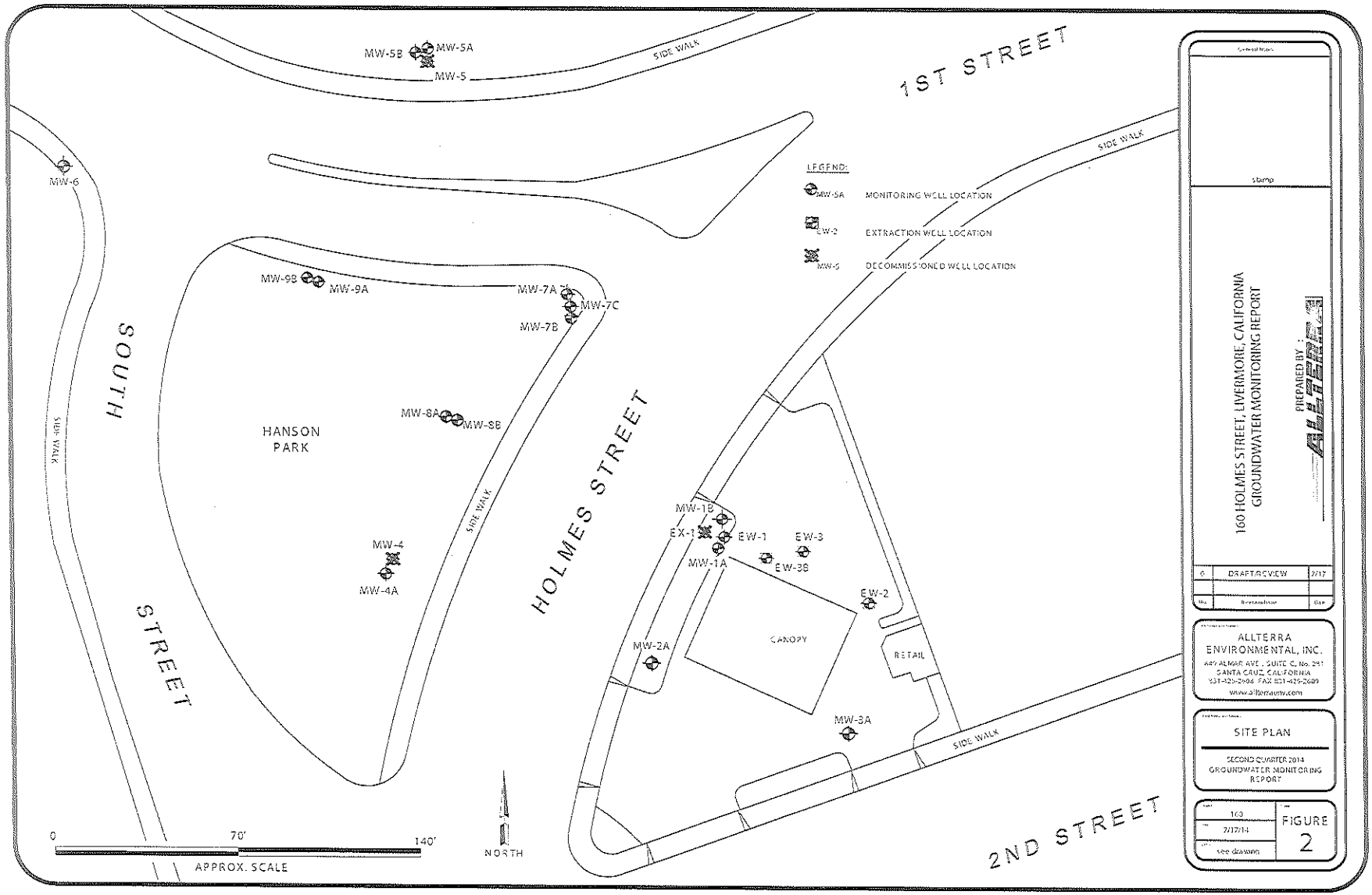
1ST STREET
2ND STREET
HOLMES STREET
SOUTH
STREET
SIDE WALK
HANSON
PARK
MW-5B
MW-5A
MW-5
MW-6
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
0 DRAFT REVIEW 7/17
ALLTERRA
ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
FIGURE
2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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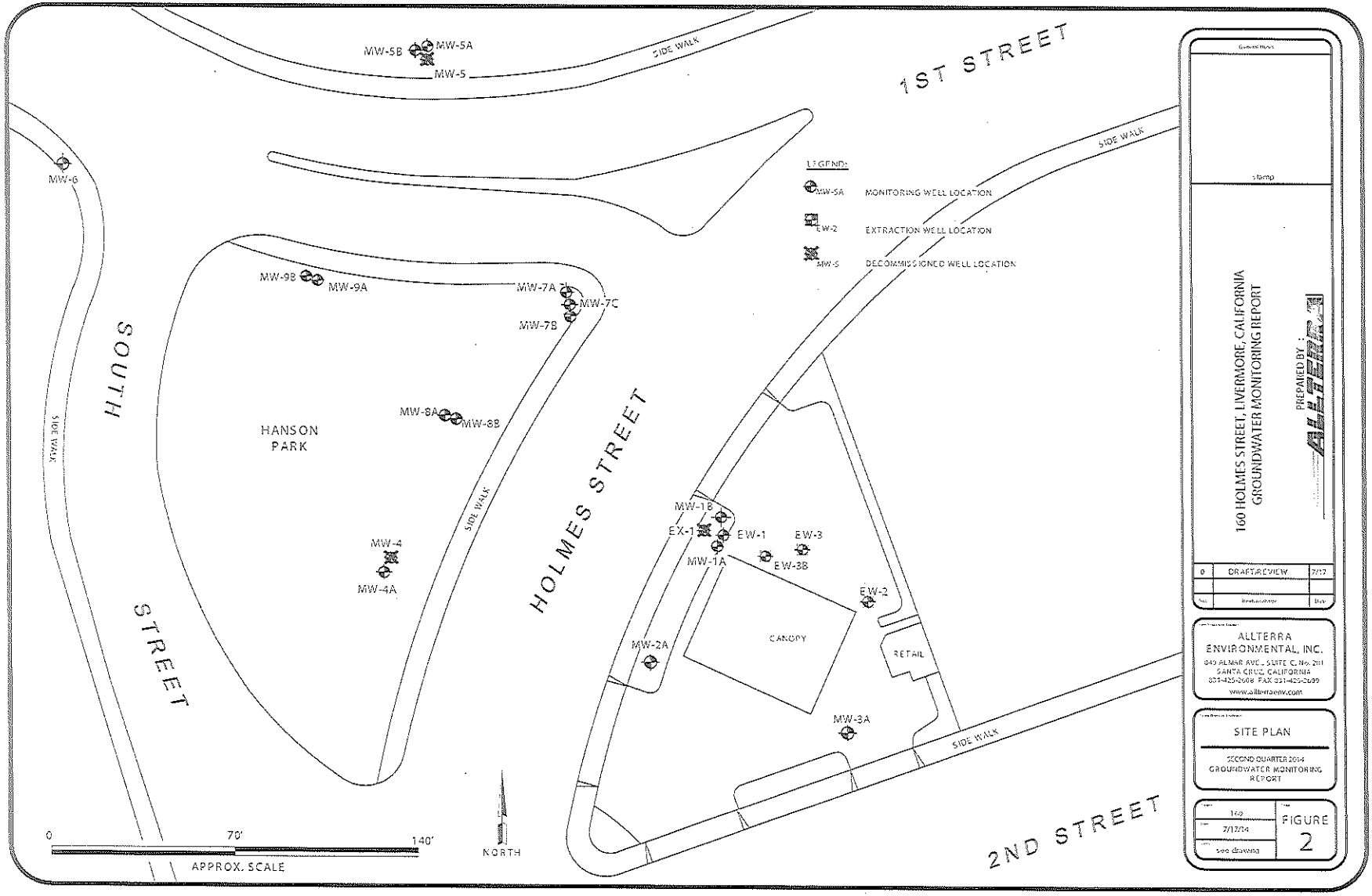

1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
SIDE WALK
HANSON
PARK
MW-8A
MW-8B
HOLMES STREET
SIDE WALK
MW-4
MW-4A
STREET
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
ALLTERRA
0 DRAFT/REVIEW 7/17
ALLTERRA
ENVIRONMENTAL, INC.
649 ALMAR AVE., SUITE C, No. 211
SANTA CRUZ, CALIFORNIA
831-425-2688 FAX 831-425-2699
www.allterraenv.com
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
1=0
7/17/14
see drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-7A	Page: 1 of 1

Project Number: 015-01-012
Date: 2/27/06
Location: 160 Holmes St., Livermore, CA
Logged By: JA
Driller: Exploration Geoservices
Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 15 to 30 feet below ground surface (bgs)

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Lawn (landscaping)
				2			
				3			
				4			
				5			
				6			Boring MB-3 was logged continuously for lithology from surface
				7			grade to 32 feet bgs. See Boring log from MB-3 for lithology
				8			information
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

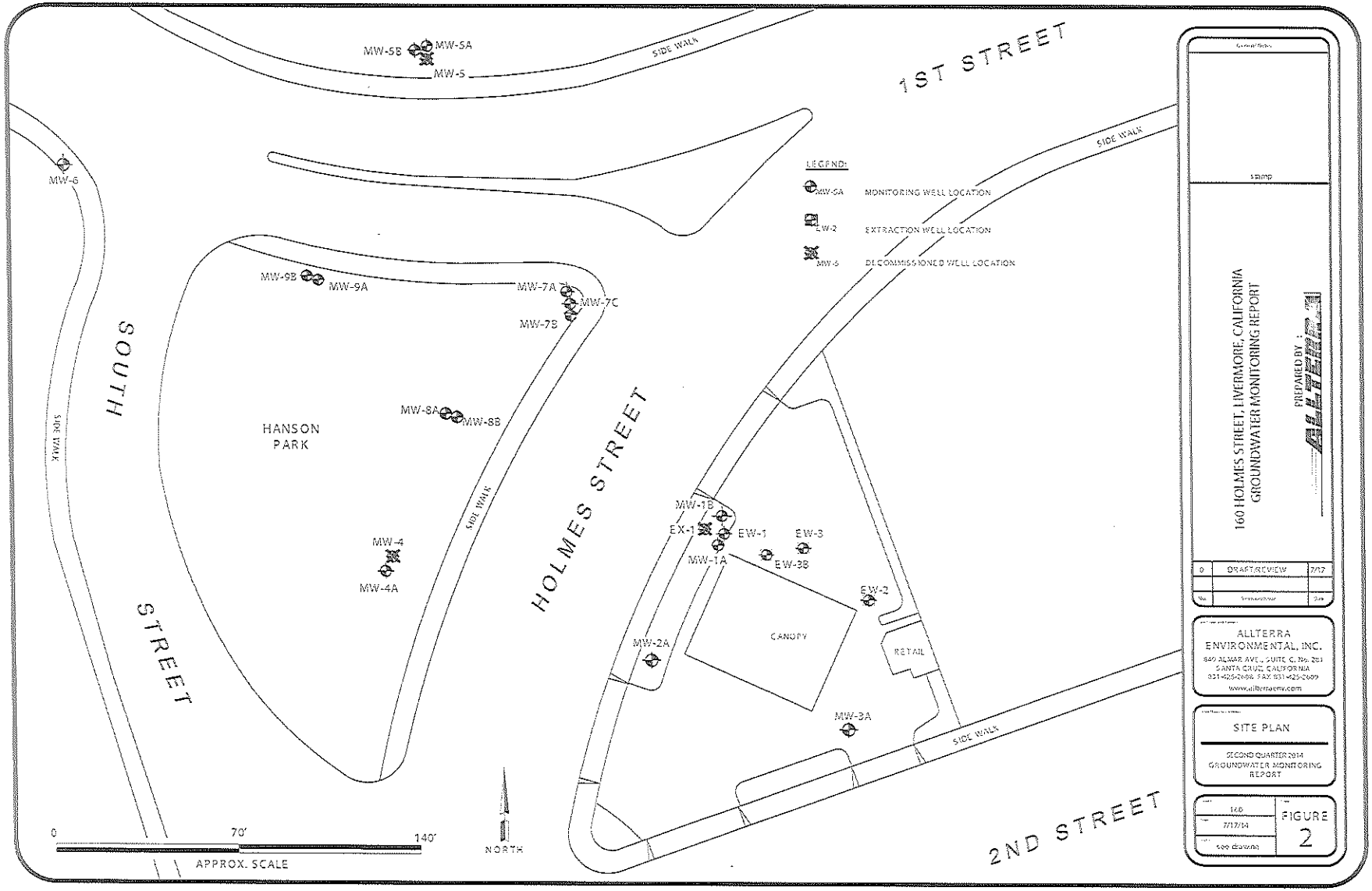
Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
CANOPY
RETAIL
MW-2A
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
ALLTERRA ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING REPORT
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-7B	Page: 1 of 2

Project Number: 015-01-012

Date: 2/28/06

Location: 160 Holmes St., Livermore, CA

Logged By: NA

Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 45 to 50 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Grass (landscaping)
				2			
				3			
				4			
				5			
				6			
				7			Boring MB-3 was logged continuously for lithology from surface
				8			grade to 32 feet bgs and boring MW-7C was logged continuously
				9			from 32 to 70 feet bgs. See Boring logs from MB-3 and MW-7C for
				10			lithology information
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

ALLTERRA

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID**	**MW-7B**
	Page: 2 of 2	
	Project Number: 015-01-012	
	Date: 2/28/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: EA	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 45 to 50 feet below ground surface (bgs)	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			
				34			
				35			
				36			
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			Total depth = 50 feet bgs
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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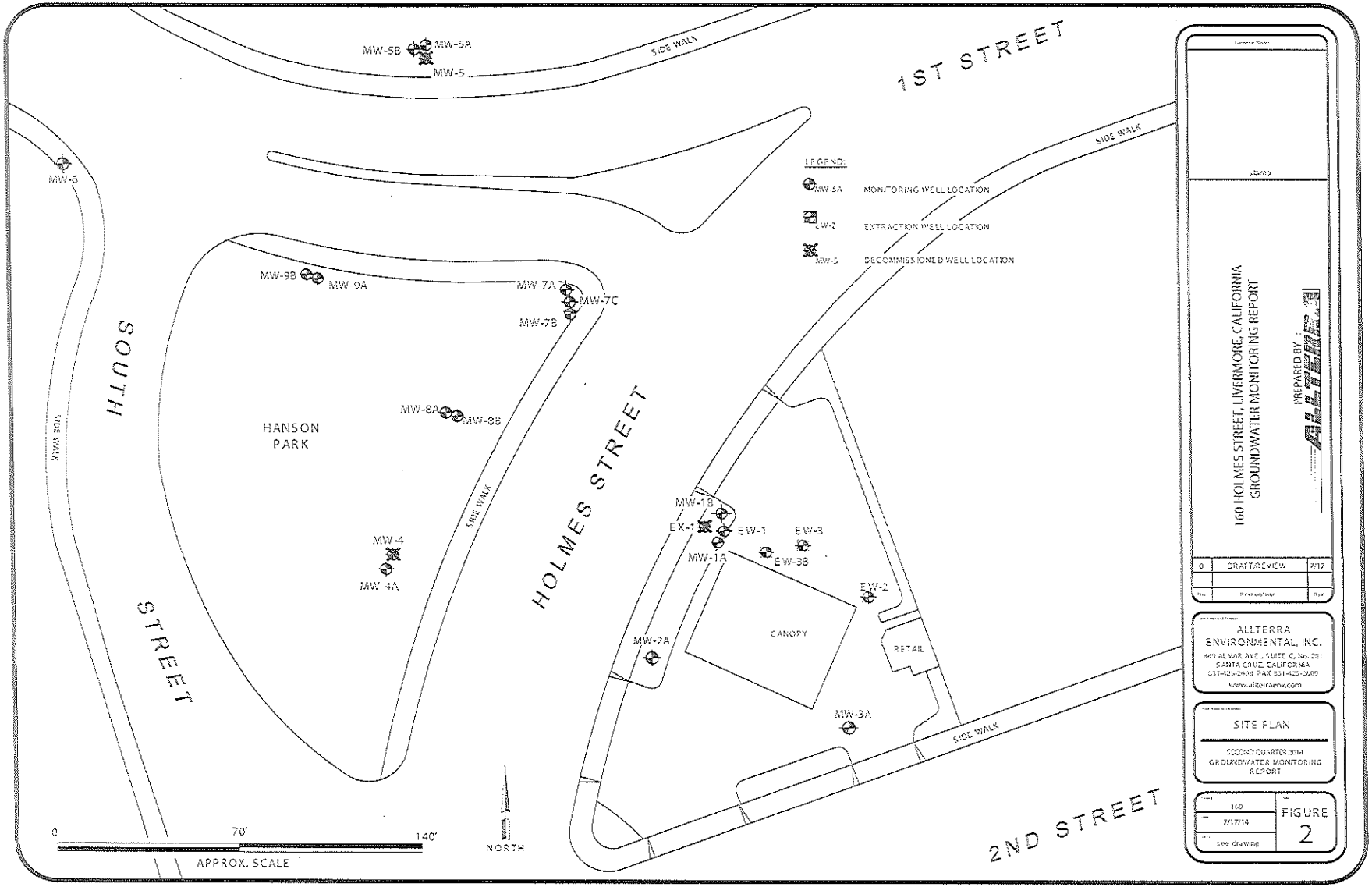
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY:
0 DRAFT/REVIEW 7/17
ALLTERRA
ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
160
7/17/14
See drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-7C	Page: 1 of 3

Project Number: 015-01-012
Date: 2/27/06
Location: 160 Holmes St., Livermore, CA
Logged By: JA
Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Grass (landscaping)
				2			
				3			
				4			
				5			
				6			
				7			Boring MB-3 was logged continuously for lithology from surface
				8			grade to 32 feet bgs. See Boring log from MB-3 for lithology
				9			information for first 32 feet
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	MW-7C	Page: 2 of 3

Project Number: 015-01-012
Date: 2/28/06
Location: 160 Holmes St., Livermore, CA
Logged By: EA
Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
	ND			33		GM	Silty gravel, light brown, 35% medium plasticity fines, 25% medium
				34			to coarse sand, 40% medium to coarse gravel, medium dense, wet, MPO
				35			
				36			
				37			
	ND			38		GM	As above, NPO
				39			
				40			
				41			
				42			
				43			
				44			
	ND			45		GM	As above, medium brown, 25% low to medium plasticity fines, 30%
				46			medium to coarse sand, 45% meium to coarse gravel
				47			
				48			
				49			
				50			
				51		GM	As above
				52			
				53			
				54			
				55			
				56			
	ND			57		GM	As above
				58			
				59			
				60			
				61			

When applicable 61-90 feet bgs on page 3

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

ALTERRA

Field Well/Boring Log

Field location of boring	Boring ID	MW-7C	Page: 3 of 3
(See attached Site Plan)	Project Number: 015-01-012		
	Date: 2/27/06		
	Location: 160 Holmes St., Livermore, CA		
	Logged By: JA		
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices		
	Casing installation data: 2-inch casing, 8-inch bore hole, screen interval 65 to 70 feet below ground surface (bgs)		

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				61			
	ND			62		GM	As above, some cobbles
				63			
				64			
				65			
				66			
				67		GM	As above
				68			
				69			
	ND		MW-7C@70	70		CL	Silty clay with some fine sand, light brown, 65% low to medium plasticity fines, 35% fine sand, med. stiff, moist, NPO
				71			
				72			
				73			
				74			
				75			
				76			
				77			
				78			
				79			
				80			
				81			
				82			Total depth = 70 feet bgs
				83			
				84			
				85			
				86			
				87			
				88			
				89			
				90			

Notes:

= Cement
= Bentonite
= #2 Sand
= 0.001 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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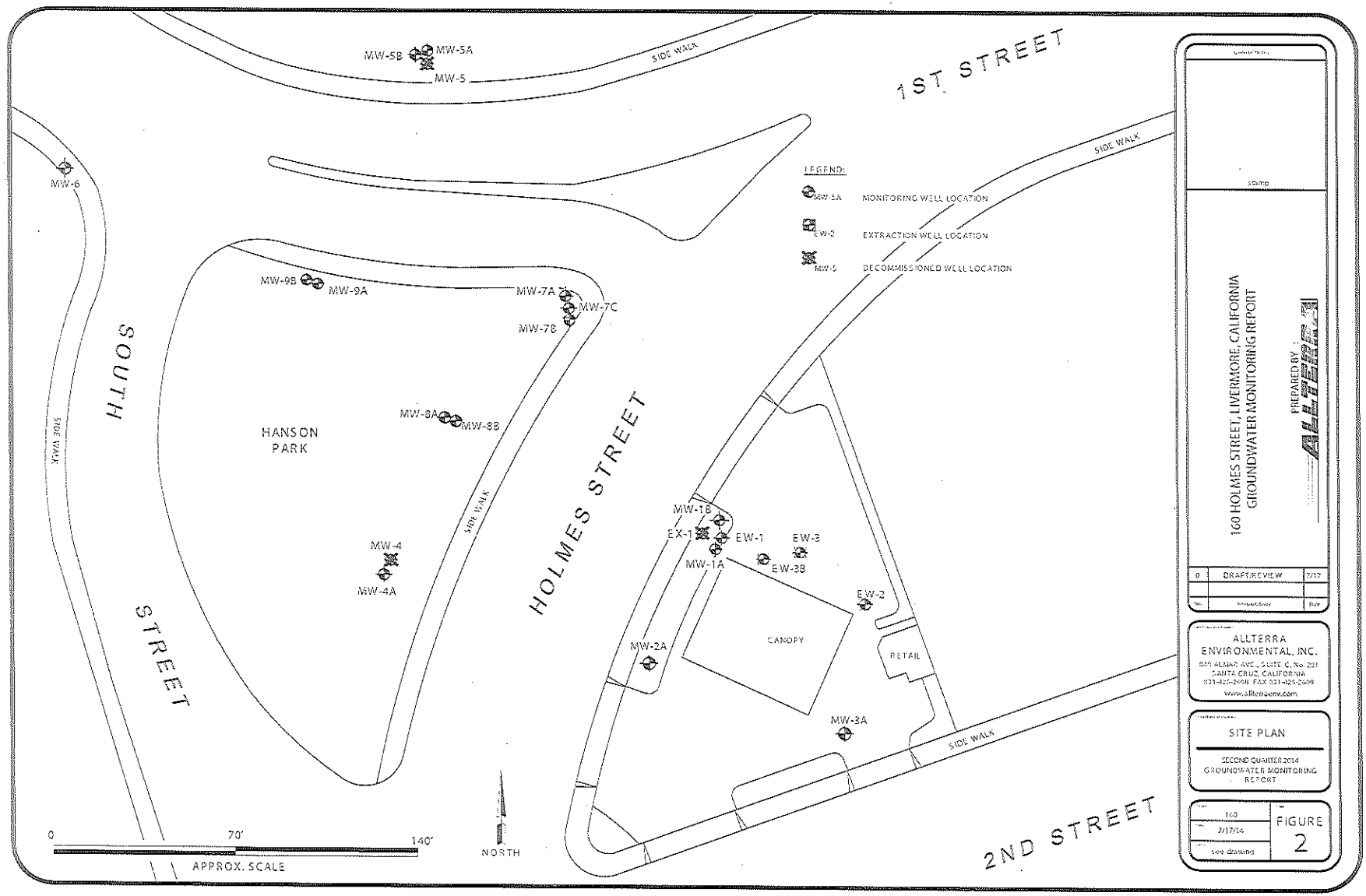
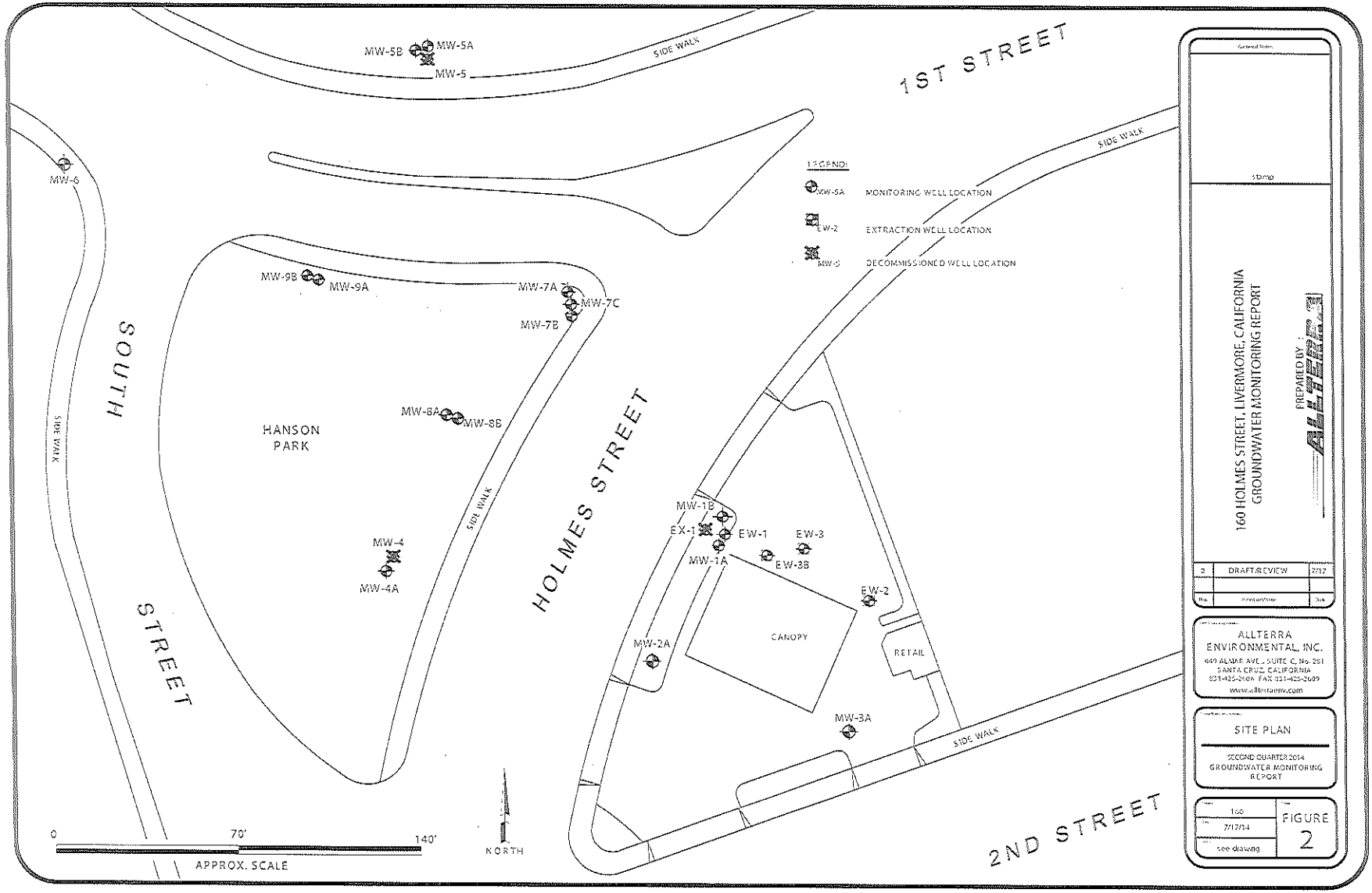

1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
SIDE WALK
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
HOLMES STREET
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY
ALLTERRA
0 DRAFT REVIEW 7/17
ALLTERRA
ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
1:0
7/17/14
See drawing
FIGURE
2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
CANOPY
RETAIL
MW-2A
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY
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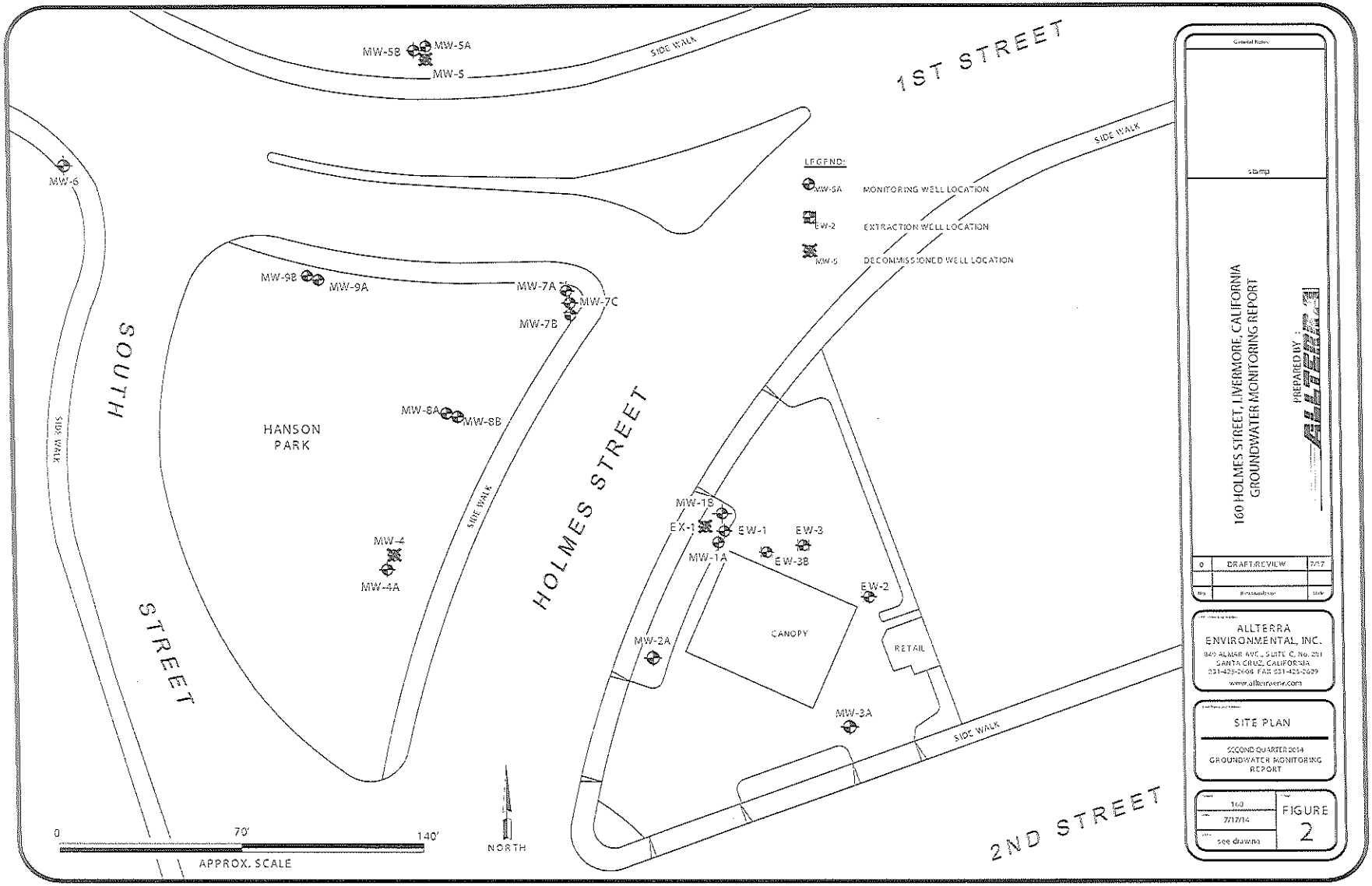
ALLTERRA
ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
FIGURE
2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

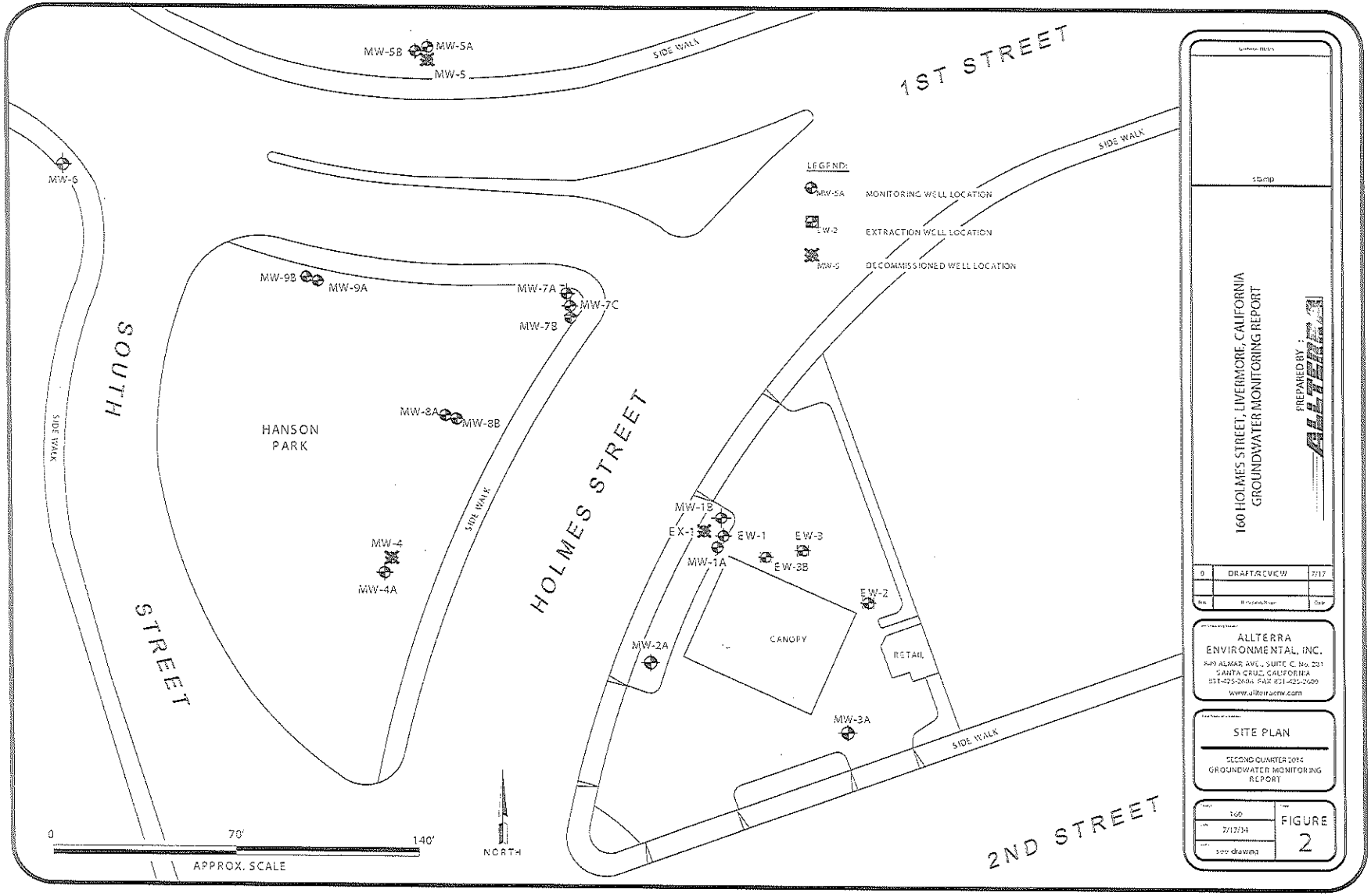
REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
HANSON PARK
SOUTH
STREET
SIDE WALK
MW-4
MW-4A
SIDE WALK
HOLMES STREET
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
0 DRAFT/REVIEW 7/7/
ALLTERRA ENVIRONMENTAL, INC.
840 ALMAR AVE., SUITE C, No. 251
SANTA CRUZ, CALIFORNIA
831-425-2606 FAX 831-425-2609
www.allterraenv.com
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING REPORT
160
7/17/14
see drawing
FIGURE
2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

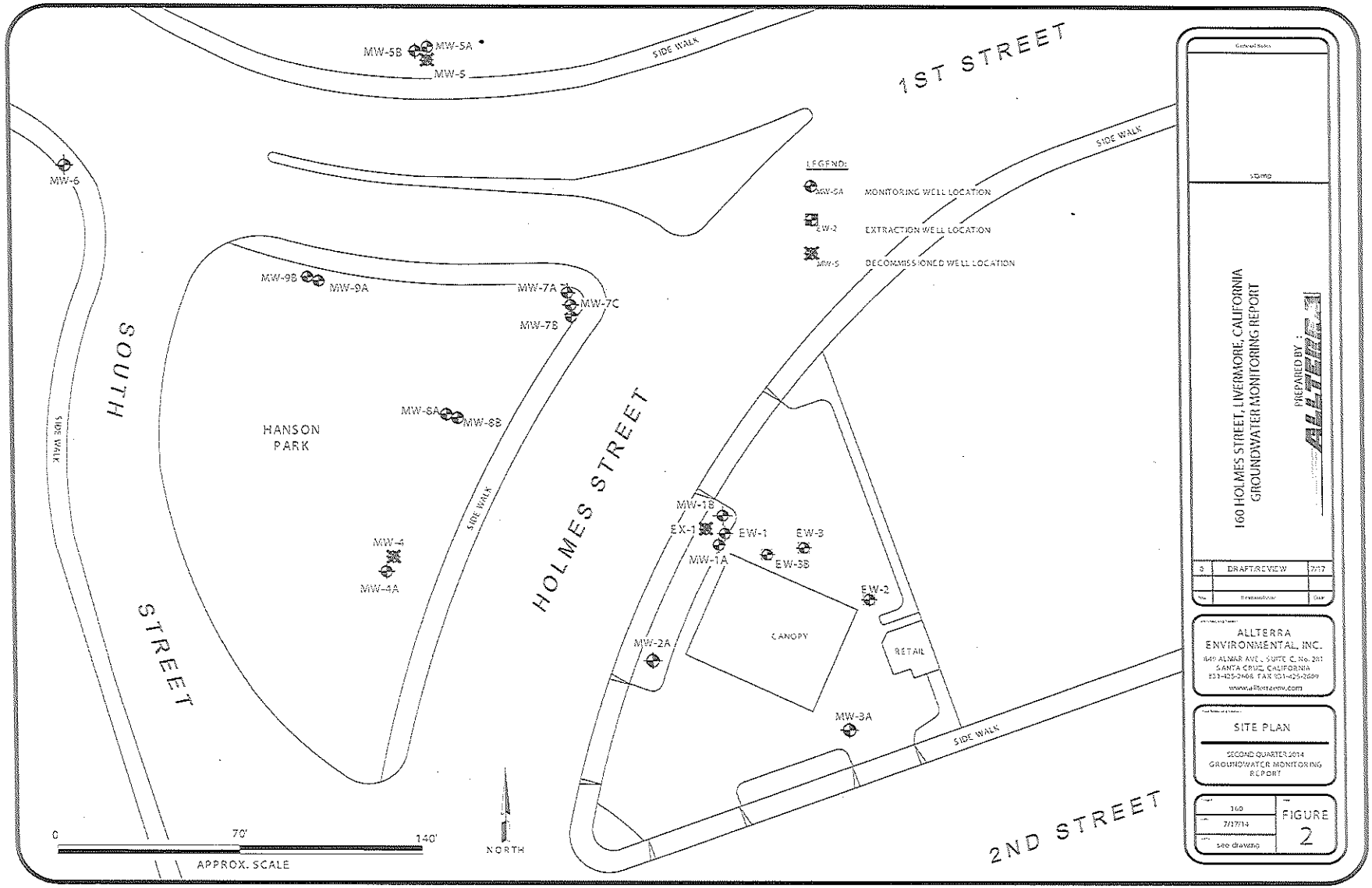
REMOVED


1ST STREET
2ND STREET
HOLMES STREET
SOUTH
STREET
SIDE WALK
HANSON PARK
MW-5B
MW-5A
MW-5
MW-6
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
MW-8A
MW-8B
MW-4
MW-4A
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
0 DRAFT/REVIEW 7/17
ALLTERRA ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014 GROUNDWATER MONITORING REPORT
FIGURE 2

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
SIDE WALK
STREET
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
2ND STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY :
ALLTERRA
0 DRAFT/REVIEW 7/17
ALLTERRA ENVIRONMENTAL, INC.
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING REPORT
160
7/17/14
see drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID**	**EW-1** Page: 1 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12	Driller: Exploration Geoservices	
	Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring MB-1 was logged continuously for lithology from surface
				6			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				7			information for first 40 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19		▽	
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information		
Date	Time	Depth (feet)
2/24/06	14:49	19.46

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring (See attached Site Plan)	**Boring ID** EW-1	Page: 2 of 2
	Project Number: 015-01-012	
	Date: 2/24/06	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: MK	
Drilling Method/Boring Diameter (inches): Hollow stem auger/8	Driller: Exploration Geoservices	

Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33			Boring MB-1 was logged continuously for lithology from surface
				34			grade to 50 feet bgs. See Boring log from MB-1 for lithology
				35			information for first 50 feet
				36			
				37			
				38			
				39			
				40			Total depth = 40 feet bgs
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
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				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

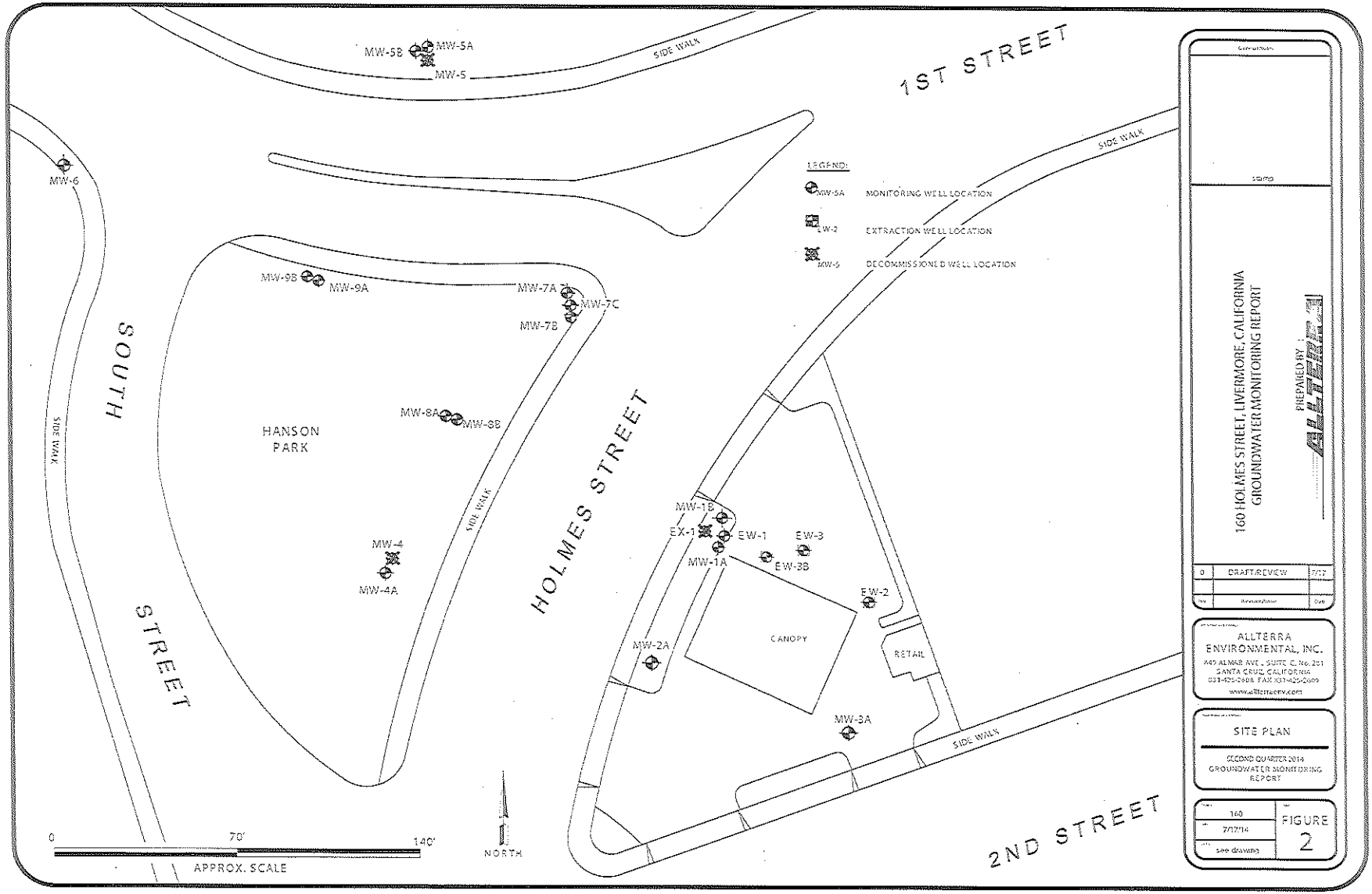
= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


MW-5B
MW-5A
MW-5
SIDE WALK
1ST STREET
MW-6
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
SOUTH
SIDE WALK
HANSON
PARK
MW-8A
MW-8B
HOLMES STREET
SIDE WALK
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
MW-4
MW-4A
EW-2
MW-2A
CANOPY
RETAIL
MW-3A
SIDE WALK
STREET
2ND STREET
0
70'
140'
APPROX. SCALE
NORTH
160 HOLMES STREET, LIVERMORE, CALIFORNIA
GROUNDWATER MONITORING REPORT
PREPARED BY
ALLTERRA
0 DRAFT/REVIEW 7/17
ALLTERRA
ENVIRONMENTAL, INC.
449 ALMAR AVE., SUITE C, No. 251
SANTA CRUZ, CALIFORNIA
831-425-2608 FAX 831-425-2609
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SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
160
7/17/14
see drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	EW-2	Page: 1 of 2

Project Number: 015-01-012

Date: 2/24/06

Location: 160 Holmes St., Livermore, CA

Logged By: MK

Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12

Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1			Soil at ground surface
				2			
				3			
				4			
				5			Boring B-2 was logged continuously for lithology from surface
				6			grade to 30 feet bgs. See Boring log from B-2 for lithology
				7			information for first 30 feet
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			
				21			
				22			
				23			
				24			
				25			
				26			
				27			
				28			
				29			
				30			

Water Level Information

Date	Time	Depth (feet)

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	EW-2	Page: 2 of 2

Project Number: 015-01-012
Date: 2/24/06
Location: 160 Holmes St., Livermore, CA
Logged By: MK
Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 4-inch casing, 12-inch bore hole, 15 to 40 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
	ND			31			Silty gravel, medium brown, 35% medium plasticity fines, 25% medium to coarse sand, 40% mediaum to coarse gravel, medium dense, wet, NPO
				32			
				33			
				34			
				35			
	ND		EW-2@36.5	36		GM	As above
				37			
				38			
				39			
				40		GM	As above
	ND		EW-2@41.5	41			Total depth = 40 feet bgs
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
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				55			
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				58			
				59			
				60			
				61			

Notes:

= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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ALTERRA

Field Well/Boring Log

Field location of boring	Boring ID	EW-3	Page: 1 of 2
(See attached Site Plan)	Project Number: 015-01-027		
	Date: 5/10/07		
	Location: 160 Holmes St., Livermore, CA		
	Logged By: MK		
Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12	Driller: Exploration Geoservices		
	Casing installation data: 4-inch casing, 12-inch bore hole. Screen interval: 25 to 30 feet below ground surfa (bgs); blank interval: 0.5 to 25 feet and 30 to 35 feet bgs.		

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1		SM	6" concrete
				2			
				3			
				4			
			(No samples	5			Brown silty sand and silt, moist, medium dense, no PO
			collected for	6			
			analysis)	7			
				8			
				9			
				10			
				11		ML	
				12			
				13			
				14			
				15			Brown silt and clay, moist to very moist, medium, slight PO
				16			
				17			
				18			
				19			
				20			Grayish brown silt with clay and sand, moist, medium, strong PO
				21			
				22			
				23			
				24			
				25			Grayish brown silt with clay and sand, moist, medium, strong PO
				26			
				27			
				28			
				29			
				30			Same but stronger PO and very moist

Water Level Information		
Date	Time	Depth (feet)
5/10/07	(initial)	~31'
5/10/07	(static)	~28'

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

ALTERRA

Field Well/Boring Log

Field location of boring

(See attached Site Plan)

Boring ID	EW-3	Page: 2 of 2

Project Number: 015-01-027
Date: 5/10/07
Location: 160 Holmes St., Livermore, CA
Logged By: MK
Driller: Exploration Geoservices

Drilling Method/Boring Diameter (inches): Hollow stem auger/8

Casing installation data: 4-inch casing, 12-inch bore hole. Screen interval: 25 to 30 feet below ground surfa (bgs); blank interval: 0.5 to 25 feet and 30 to 35 feet bgs.

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32			
				33		GM	Grayish brown silt/sand/gravel, wet, medium/stiff, SPO
				34			
				35			
				36			Total depth of well: 35 feet bgs.
				37			
				38			
				39			
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
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				58			
				59			
				60			
				61			

Notes:

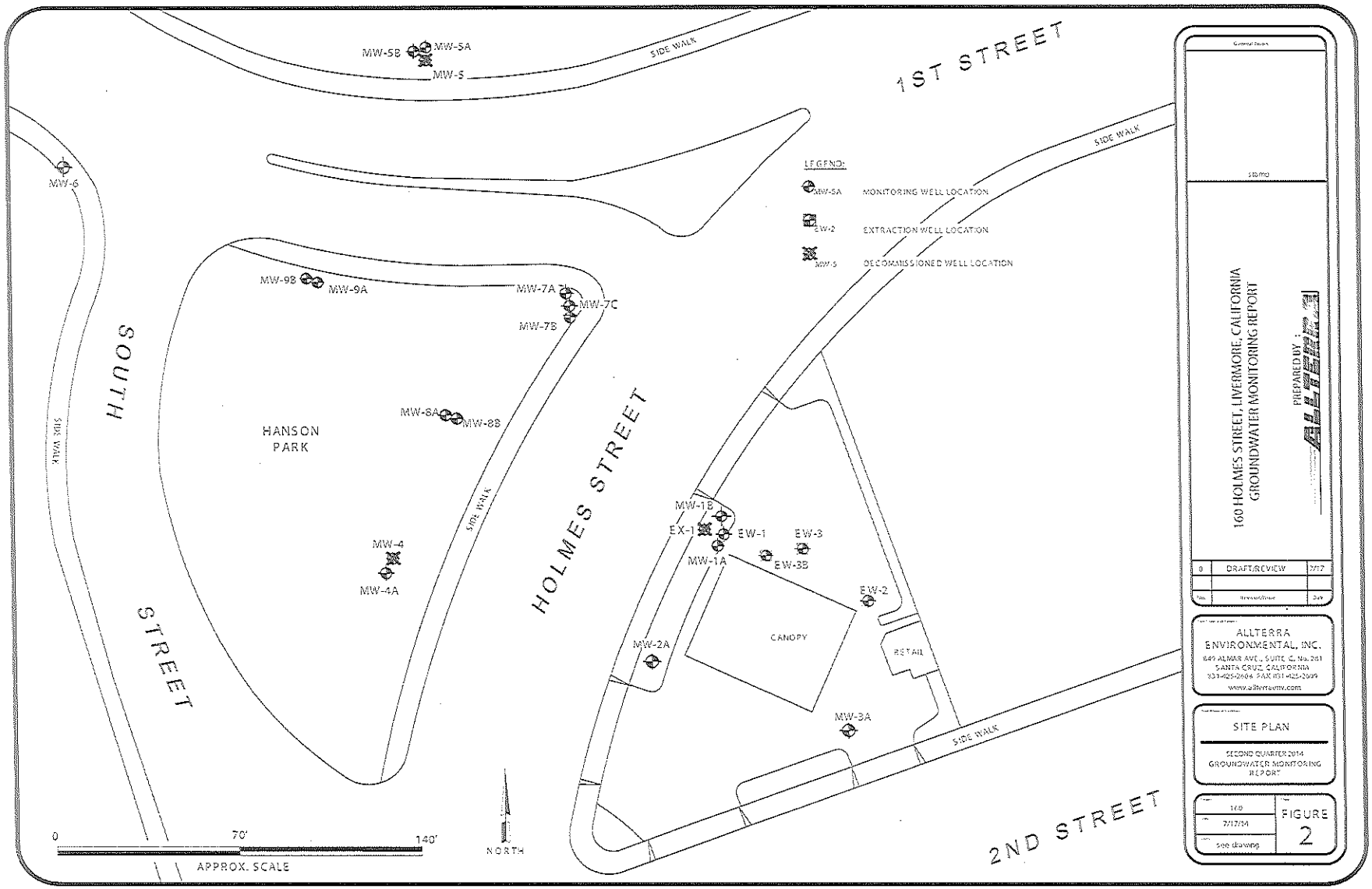
= Cement
= Bentonite
= #3 Sand
= 0.002 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED


1ST STREET
SIDE WALK
MW-5B
MW-5A
MW-5
MW-6
SOUTH
STREET
SIDE WALK
MW-9B
MW-9A
MW-7A
MW-7C
MW-7B
HANSON
PARK
MW-8A
MW-8B
SIDE WALK
MW-4
MW-4A
HOLMES STREET
LEGEND:
MW-5A MONITORING WELL LOCATION
EW-2 EXTRACTION WELL LOCATION
MW-5 DECOMMISSIONED WELL LOCATION
MW-1B
EX-1
EW-1
EW-3
MW-1A
EW-3B
EW-2
CANOPY
RETAIL
MW-2A
MW-3A
SIDE WALK
2ND STREET
0
70'
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NORTH
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GROUNDWATER MONITORING REPORT
PREPARED BY :
0 DRAFT/REVIEW
ALLTERRA ENVIRONMENTAL, INC.
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SANTA CRUZ, CALIFORNIA
831-425-2604 FAX 831-425-2999
www.allterraenv.com
SITE PLAN
SECOND QUARTER 2014
GROUNDWATER MONITORING
REPORT
TKB
7/17/14
see drawing
FIGURE
2

ALTERRA

Field Well/Boring Log

Field location of boring:

Northeast of fuel dispensers (See Site plan)

Boring ID	EW-3B	Page: 1 of 2

Project Number: 160

Date: 3/5/13

Location: 160 Holmes St., Livermore, CA

Logged By: AP

Driller: Exploration Geoservices Inc.

Drilling Method/Boring Diameter (inches): Hollow stem auger/ 12

Casing installation data: 4-inch casing, 12-inch diameter bore hole, 24 to 39 feet below ground surface (bgs) screen interval

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				1		GM to GW	Silty Gravel with sand (GM), medium brown, loose, dry, no product odor (npo)
				2			heterogeneous mixture of material with common trash [Artificial Fill]
				3			Pea gravel at 2 feet bgs to 2.5 feet bgs.
				4			
				5			Some large cobbles in Fill (hard drilling), loose, dry, npo
				6			
				7			Gravel with sand (GW) at 4 feet bgs, some cobbles, dry, loose,
				8			npo [Artificial Fill]
				9		MH	Silt with trace clay (MH), brown, medium stiff, low plasticity, slightly moist, npo
				10			
	0.0			11			
				12			
				13		ML	
	0.0			14			
				15			Silt with trace sand (ML), light brown, soft to medium stiff, slightly moist,
				16			no plasticity, npo
				17		GW	Sandy Gravel (GW), brown to grey, coarse grained sand, loose, moist, npo
				18			
				19		GC	Clayey Gravel (GC) at 19 feet bgs, well-graded gravel in clay matrix,
			EW-3B@20'	20			very little recovery
				21		CL	Clay with silt (CL), greyish brown, soft, medium plasticity, moist, slight product
				22			odor (spo)
				23			
	5.2			24			
			EW-3B@25'	25		CL	Silty Clay (CL), mottled grey and brown, soft, high plasticity, damp, moderate
				26			product odor (mpo)
				27			
				28			
	3.1			29		GW	Gravelly Sand with some silt and clay (SW), brownish grey, loose, saturated, spo
			EW-3B@30'	30			very little recovery

Water Level Information

Date	Time	Depth (feet)
3/5/13	12:49	28
	15:00	23.7

When applicable 31-60 feet bgs on page 2

Notes:

= Cement
= Bentonite
= Coarse sand
= 0.04 inch slotted PVC screen
= Blank PVC casing

▽ = initial water level
▼ = static water level

ALTERRA

Field Well/Boring Log

Field location of boring: (See attached Site Plan)	**Boring ID**	**EW-3B**
	Page: 2 of 2	
	Project Number: 160	
	Date: 3/5/13	
	Location: 160 Holmes St., Livermore, CA	
	Logged By: AP	
Drilling Method/Boring Diameter (inches): Hollow stem auger/12	Driller: Exploration Geoservices, Inc.	
	Casing installation data: 4-inch casing, 12-inch diameter bore hole, 24 to 39 feet below ground surface (bgs) screen interval	

Well Construction Details	PID (ppm)	Blows/ft. or PSI	Sample ID	Depth (feet)	Sample	Soil Group Symbol (USGS)	Description
				31			
				32		GW	See previous page
				33			
				34			
			EW-3B@35'	35		SP	Sand with some gravel (SP), coarse grained sand, loose, saturated, npo
				36			
				37			
				38			
				39			Total depth = 39 feet bgs
				40			
				41			
				42			
				43			
				44			
				45			
				46			
				47			
				48			
				49			
				50			
				51			
				52			
				53			
				54			
				55			
				56			
				57			
				58			
				59			
				60			
				61			

Notes:

= Cement
= Bentonite
= Coarse sand
= 0.004 inch slotted PVC screen
= Blank PVC casing

= initial water level
= static water level