

Historical Document Review Report

**George Mayeda #1 Oil and Gas Well Site
Longmont, Colorado**

December 22, 2017
Terracon Project No. 22177019



Prepared for:
City of Longmont
Longmont, Colorado

Prepared by:
Terracon Consultants, Inc.
Longmont, Colorado

terracon.com

Terracon

December 22, 2017



City of Longmont
385 Kimbark Street
Longmont, Colorado 80501

Attn: Mr. Jason Elkins
P: (303) 651-8310
E: Jason.Elkins@longmontcolorado.gov

Re: Historical Document Review Report
George Mayeda #1 Oil and Gas Well Site
Longmont, Colorado
Terracon Project No. 22177019

Dear Mr. Elkins:

Terracon Consultants, Inc. (Terracon) is pleased to submit our report of Historical Document Review activities completed at the site referenced above, to accompany the Limited Soil, Groundwater, and Soil Gas Investigation Report dated December 19, 2017. Terracon conducted the document review in general accordance with our proposal (P22177019), dated August 7, 2017.

Terracon appreciates this opportunity to provide environmental consulting services to The City of Longmont. Should you have any questions or require additional information, please do not hesitate to contact our office.

Sincerely,
Terracon Consultants, Inc.

Michael J. Skridulis
Project Manager

A handwritten signature in blue ink, appearing to read 'D.A. Brown', with a long, sweeping horizontal line extending to the right.

Derek A. Brown, P.E.
Environmental Department Manager

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George Mayeda #1 O&G Well Site ■ Longmont, Colorado

December 22, 2017 ■ Terracon Project No. 22177019



TABLE OF CONTENTS

	Page No.
1.0 SITE DESCRIPTION	1
2.0 SCOPE OF SERVICES.....	1
2.1 Reliance.....	1
2.2 Background Evaluation	2

APPENDIX A – EXHIBITS

Exhibit 1 – Topographic Map

Exhibit 2 – Site Diagram

Exhibit 3 – Utility Map

APPENDIX B – RECEPTOR WORKSHEET

1.0 SITE DESCRIPTION

Site Name	George Mayeda #1 O&G Well Site
Site Location	South of 689 Glenarbor Circle, Longmont, Colorado

A Topographic Map showing the site location is included as Exhibit 1 and a Site Diagram is included as Exhibit 2 (from Investigation Report) in Appendix A.

2.0 SCOPE OF SERVICES

In 2012, Terracon was retained by the City of Longmont (COL) to assess seventeen plugged and abandoned oil and gas wells located within the City of Longmont limits. The objective of the 2012 assessment was to provide information concerning the plugging and abandoning of 17 O&G wellheads located within the City of Longmont and to assess the potential presence of surficial soil impacts, methane and other gasses in the subsurface near the surveyed well locations. Results of this investigation were issued in Terracon's Research Summary Report, dated February 6, 2013.

On May 2, 2017, the Colorado Oil and Gas Conservation Commission (COGCC) issued a statewide Notice to Operators (NTO) directing operators to inspect their inventory of existing flowlines and verify that any existing flowline not in active use, regardless of when it was installed or taken out of service, is abandoned pursuant to COGCC Rule 1103. Terracon performed soil, groundwater, and soil gas investigation activities at the site for the City of Longmont as detailed in the Investigation Report, dated December 19, 2017.

The objective of the document review was to provide historical information concerning former operations and to assess any concern pertaining to sensitive receptors with relation to the former well location of the George Mayeda #1 O&G well located within the City of Longmont.

2.1 Reliance

This report has been prepared for the exclusive use of the City of Longmont, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of the City of Longmont and Terracon. Any unauthorized distribution or reuse is at the City of Longmont's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, report, and Terracon's Master Services Agreement (MSA) with the City of Longmont. The limitation of liability defined in the terms and conditions of the MSA is the aggregate limit of Terracon's liability to the City of Longmont and all relying parties unless otherwise agreed in writing.

Historical Document Review Report

George Mayeda #1 O&G Well Site ■ Longmont, Colorado

December 22, 2017 ■ Terracon Project No. 22177019



2.2 Background Evaluation

As outlined in Terracon's Research Summary Report, dated February 6, 2013, drilling at the George Mayeda #1 well (API Number 05-013-06097) was reported as starting on February 12, 1982, and the well was reportedly drilled to 7,135' below ground surface (bgs). The surface casing was set at 350'. The well was reportedly plugged back to 7,090' bgs.

Plugging and abandonment activities were reported to take place on January 12, 1996 and the details are as follows: A bridge plug with a cement cap was placed above the perforations. The cap is intended to isolate the perforations and prevent flow up the casing from the formation. Cement plugs were placed above the surface casing shoe and at the surface, which is intended to prevent fluids moving to the surface. The production casing was cut and cement was reported above the surface casing shoe.

The water well search findings from the 2012 Terracon assessment indicate four groundwater monitoring and observation wells approximately 475 feet southwest of the wellsite. The wells were installed in February 1995 and were reportedly owned by the City of Longmont (TH-5, TH-12P, TH-13P and TH-14P). The file did not include an abandonment report for the monitoring and observation wells. The well construction and test reports note that the borings were drilled from 15 to 35' bgs and the wells were installed from 13 to 28.5' bgs. The borings were completed to competent bedrock (claystone or sandstone) and the wells were installed in the unconsolidated material above bedrock. The groundwater table was noted to be from 6 to 12.5' bgs. Additional review of this information using the Colorado Department of Water Resources (DWR) online database shows only one current monitoring well (well name: 19-0033.205.00) constructed in this location, in 1995, to a depth of 35-feet bgs. No additional abandonment reports have been filed for the other wells.

The nearest surface water body is an unnamed pond in the Ute Creek Golf Course located approximately 820 feet east of the wellsite.

The land use of the wellsite during drilling and plugging activities was reported to be agricultural. The wellsite is currently located in the Spring Valley Subdivision within the Ute Creek Golf Course and zoned as Public. The nearest residence is approximately 50'-100' north of the wellhead. Residences in the subdivision were constructed with basements and the subdivision was constructed with an under-drain system for storm water removal, which pumps to a central lift-station before being discharged to the storm sewer. All utilities in the adjacent residences run north into Glenarbor Circle, as outlined on the Utility Map included in Appendix A of this report.

Historical Document Review Report

George Mayeda #1 O&G Well Site ■ Longmont, Colorado

December 22, 2017 ■ Terracon Project No. 22177019



3.0 CONCLUSIONS

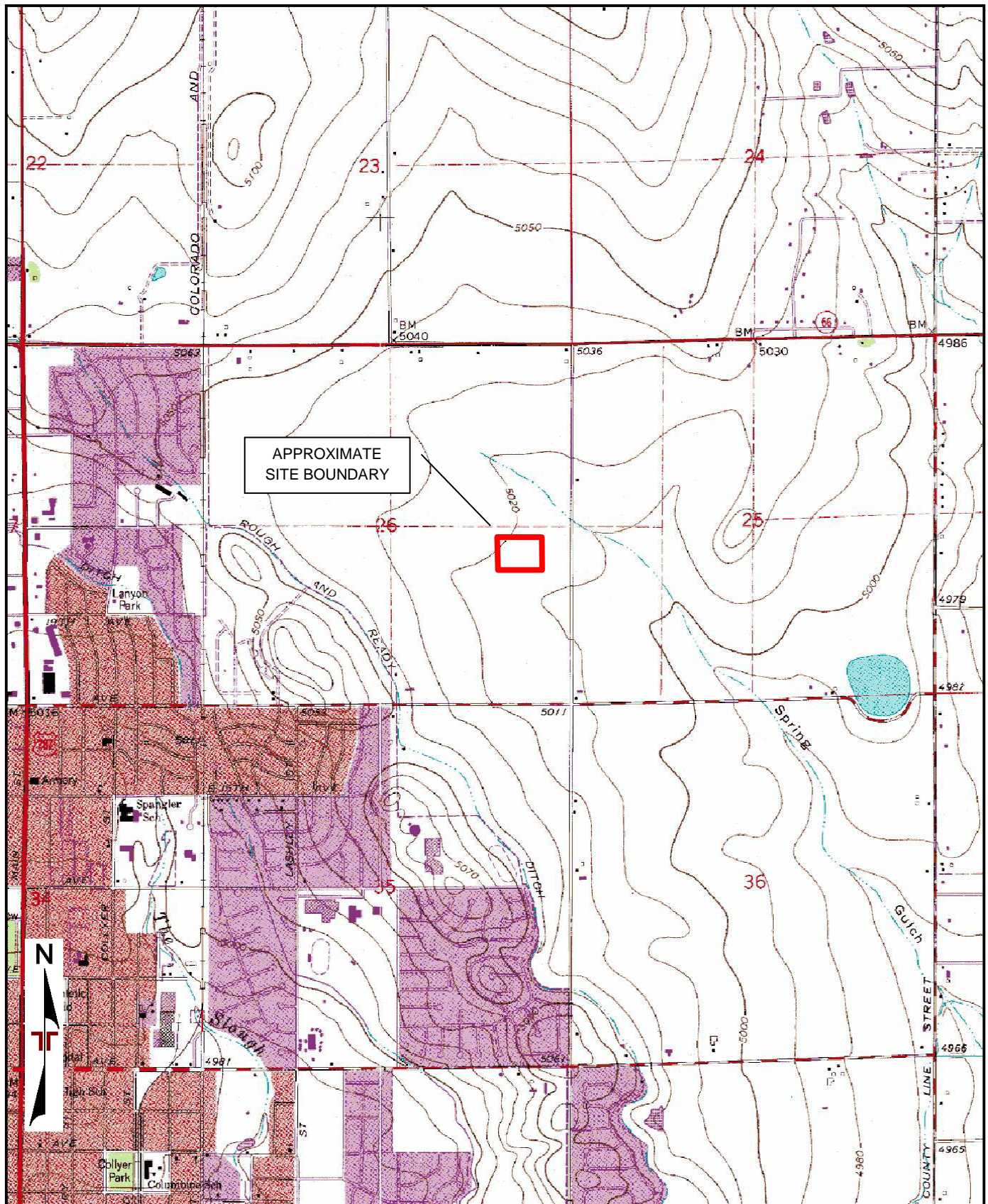
Based on observations conducted during site investigation activities and a review of the online COGCC database documentation, no other site conditions or sensitive receptors were noted.

APPENDIX A – EXHIBITS

Exhibit 1 – Topographic Map

Exhibit 2 – Site Diagram

Exhibit 3 – Utility Map



Project Manager:	MJS
Drawn by:	MJS
Checked by:	DAB
Approved by:	JCG
Project No.	22177019
Scale:	1"=2,000'
File Name:	22177019
Date:	12/18/2017

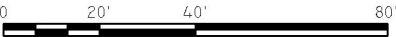
Terracon
 1242 Bramwood Pl
 Longmont, CO 80501-6100

TOPOGRAPHIC MAP
George Mayeda #1 Well Site Investigation Longmont, CO

Exhibit
1



DIAGRAM IS INTENDED FOR GENERAL USE ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES. LOCATIONS ARE APPROXIMATE.



Project Mgr:	MJS	Project No:	22177019
Drawn By:	CPD	Scale:	AS-SHOWN
Checked By:	MJS	File No:	22177019.DWG
Approved By:	DAB	Date:	12.12.2017

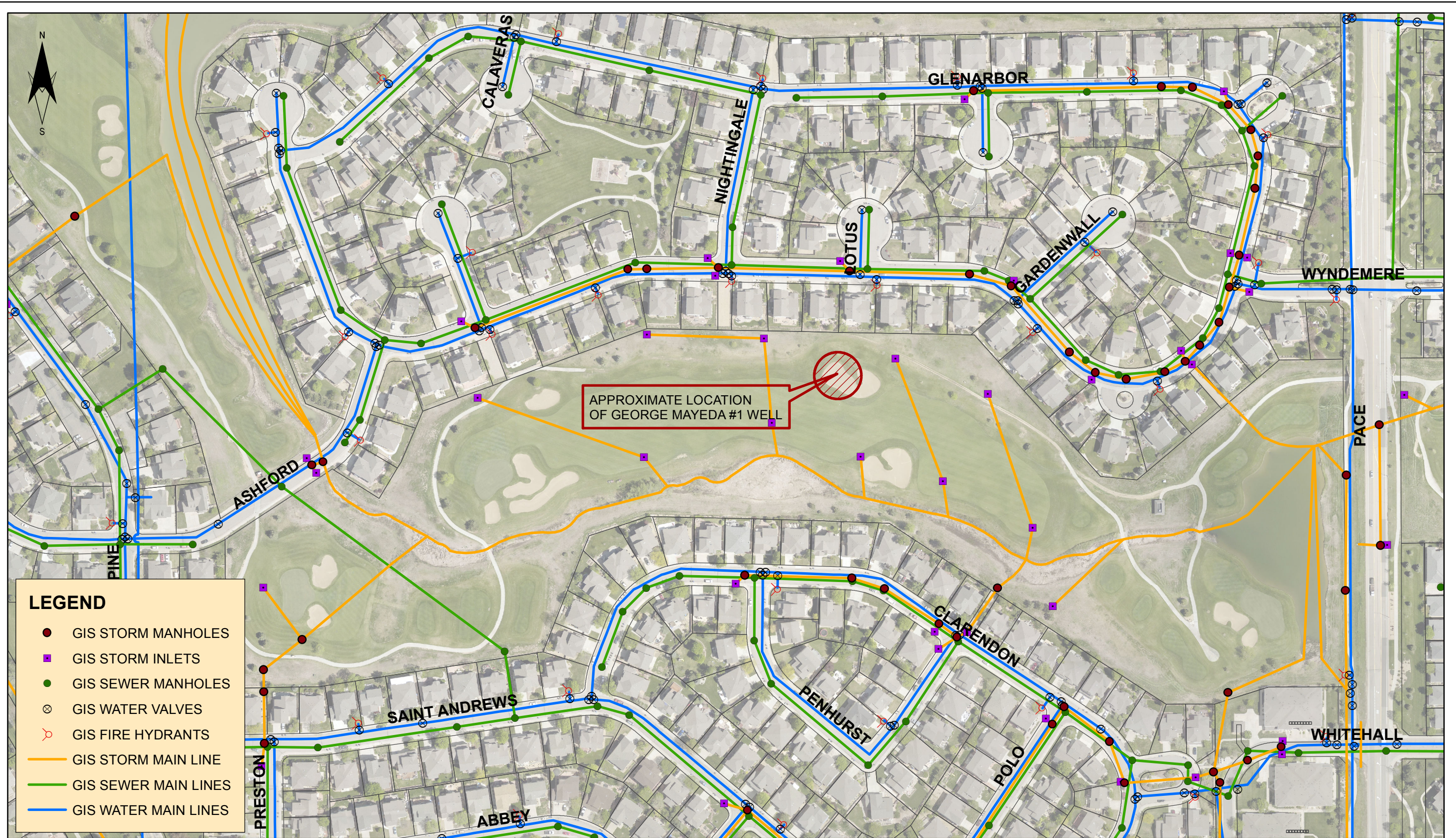
Terracon
Consulting Engineers and Scientists

1242 BRAMWOOD PLACE LONGMONT, CO 80501
PH. (303) 778-3921 FAX. (303) 778-4041

SITE DIAGRAM
GEORGE MAYEDA #1 CITY OF LONGMONT LONGMONT, COLORADO

EXHIBIT No.
2

Path: I:\Projects\PW0545 Oil & Gas\054500_2017\PA Wells\Mayeda No 1 Well\Utility map at Mayeda No1 Well.mxd



Print Date: 7/24/2017
File Name: Utility map at Mayeda No1 Well
11" x 17" Sheet Horiz. Scale: 1" = 200'
22" x 34" Sheet Horiz. Scale:
0 50 100 200 Feet

Revisions		
Date:	Comments:	Init:



CITY of LONGMONT
385 Kimbark Street
Longmont, Co. 80501
Phone: 303-651-6304 FAX: 303-651-8352
PUBLIC WORKS & NATURAL RESOURCES DEPT.

EXISTING WET UTILITY MAP MAYEDA NO. 1 WELL			Project No. / Year	
No Revisions:			PW0545	
Revised:			2017	
Void:			Sheet Number: Exhibit 3	
Designer:				
Detailer:				
Subset:			Subset Sheet: Page of	

APPENDIX B – RECEPTOR WORKSHEET

Receptor Worksheet
George Mayeda #1 Oil and Gas Well

Lease:	George Mayeda					
Well Number:	#1					
API Number:	05-013-06097					
Operator	Top Operating Company					
Sensitive Receptor Detail						
Receptor	Distance	Gradient ²	Direction	Type of Receptor	Comments	
Surface Water Body:	820 feet	Cross-Gradient	East	Unnamed Pond	Ute Creek Golf Course Pond	
Surface Water Body:	1,400 feet	Cross-Gradient	East	Unnamed Pond	Ute Creek Golf Course Pond	
Structure:	50 feet	Up-Gradient	North	Residential	Spring Valley Subdivision	
Structure:	0.5 mile	Cross-Gradient	East	Elementary School	Alpine Elementary School	
Buried Utilities:	65 feet	Up-Gradient	North	Underdrain System	Whole subdivision underdrain system	
Buried Utilities:	125 feet	Up-Gradient	North	Sewer/Water/Gas/Electric	Residence utilites run through Glenarbor Circle	
Water Well ¹ :	475 feet	Down-Gradient	Southwest	Monitoring Well (35-foot depth)	Well 19-0033.205.00 registered to City of Longmont	

1) Water well information obtained from the Colorado Department of Water Resources online database.

2) Site specific gradient determined from Terracon's Limited Soil, Groundwater, and Soil Gas Investigation (December 19, 2017).

* Additional site and receptor information obtained from Colorado Oil and Gas Conservation Commission (COGCC) online database.