

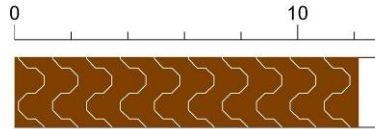
APPENDIX 5. LOGS OF TRENCHES

Logs of each bench of the trenches were compiled using LogPlot[®]. The trench, bench, and page numbers are designated at the bottom of each page. Elevations and distances are in feet in order to correlate with drill-hole data; most other measurements are in metric units. Surveying was by Molycorp staff. Field observations and laboratory analyses in the trench logs are by New Mexico Tech field and laboratory personnel and are in the project database. Most units are steeply dipping, which is not shown in these logs; see longitudinal sections of trenches in Appendix 4.

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 0003

Bench 1N Unit

Bearing of bench wall N290

Elevation 9747

Date started 6/22/2004 Texture

Date of log 10/4/05

traffic: Amelia, andesite

Gravel with silt and clay

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

yellowish to brown
dark olive

Alteration

moderate
low to moderate, minor oxidation

Matric suction (kpa)

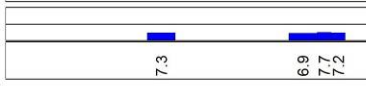
-6.89
-15
-15

Sample Number

GHN-NHW-0001
GHN-LFG-0018
GHN-LFG-0019
GHN-LFG-0020
GHN-NHW-0002

1 of 1

Moisture content %



Paste pH



Paste conductivity (uS)

1.19
0.51
1.75

Dry density (g/cm3)

1.79

Pyrite %



Comments

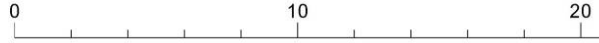
compacted material

Trench LFG-0003 Bench 1N

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 0003

Bench 2N

Unit

Bearing of bench wall N290

Elevation 9747

Date started 6/22/2004

Texture

Date of log 10/4/05

NOTE: Contacts are at
10-40 deg dip. See
longitudinal sections.

Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

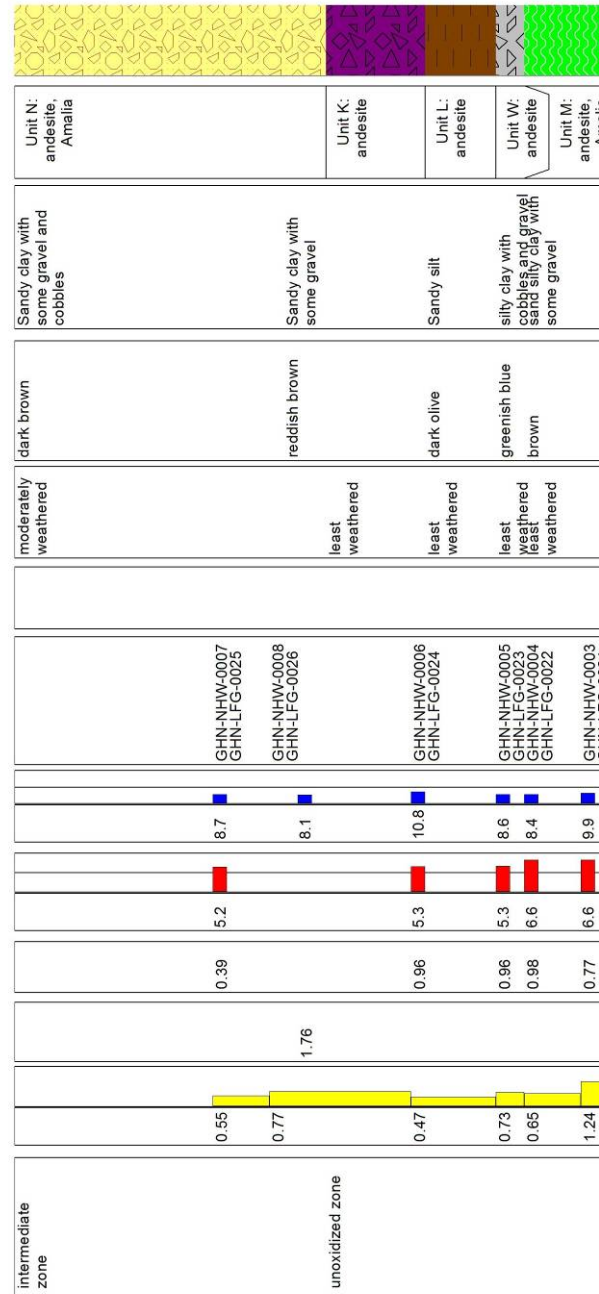
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet



Trench LFG 0003

Bench 3N Unit
 Bearing of bench wall N290

Elevation 9747

Date started 6/22/2004 Texture
 Date of log 10/4/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

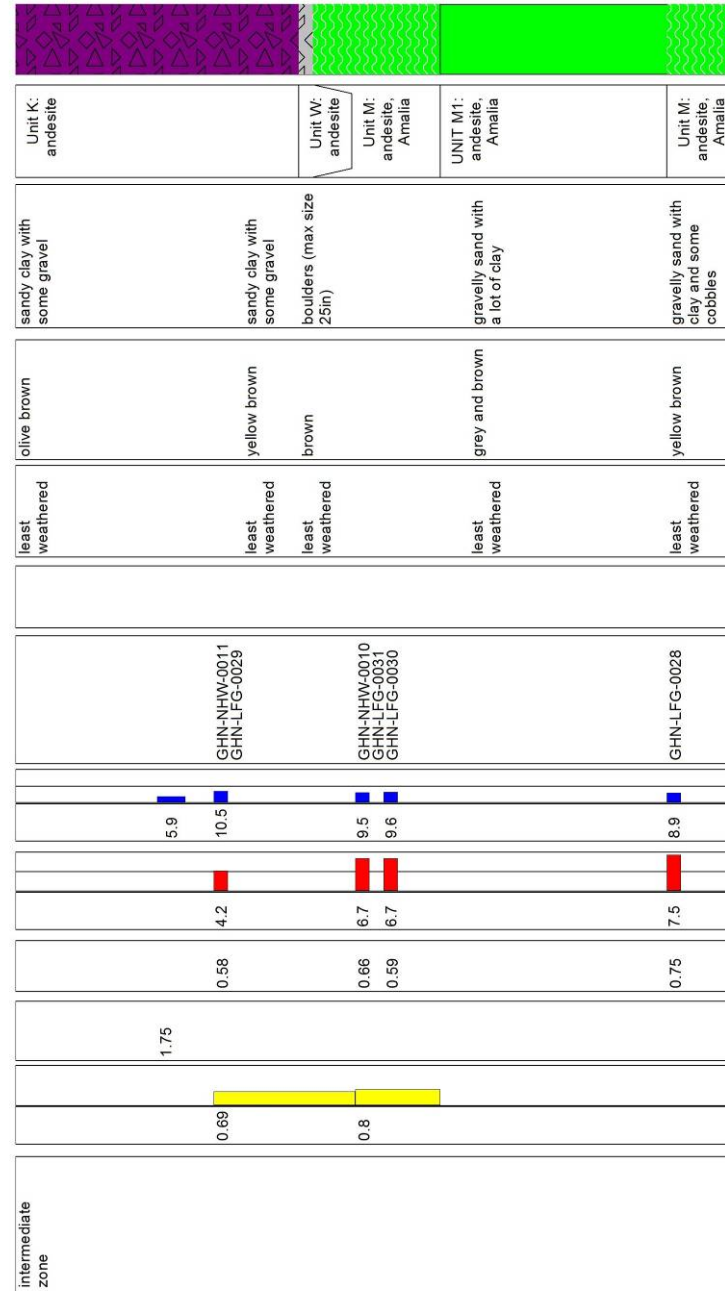
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

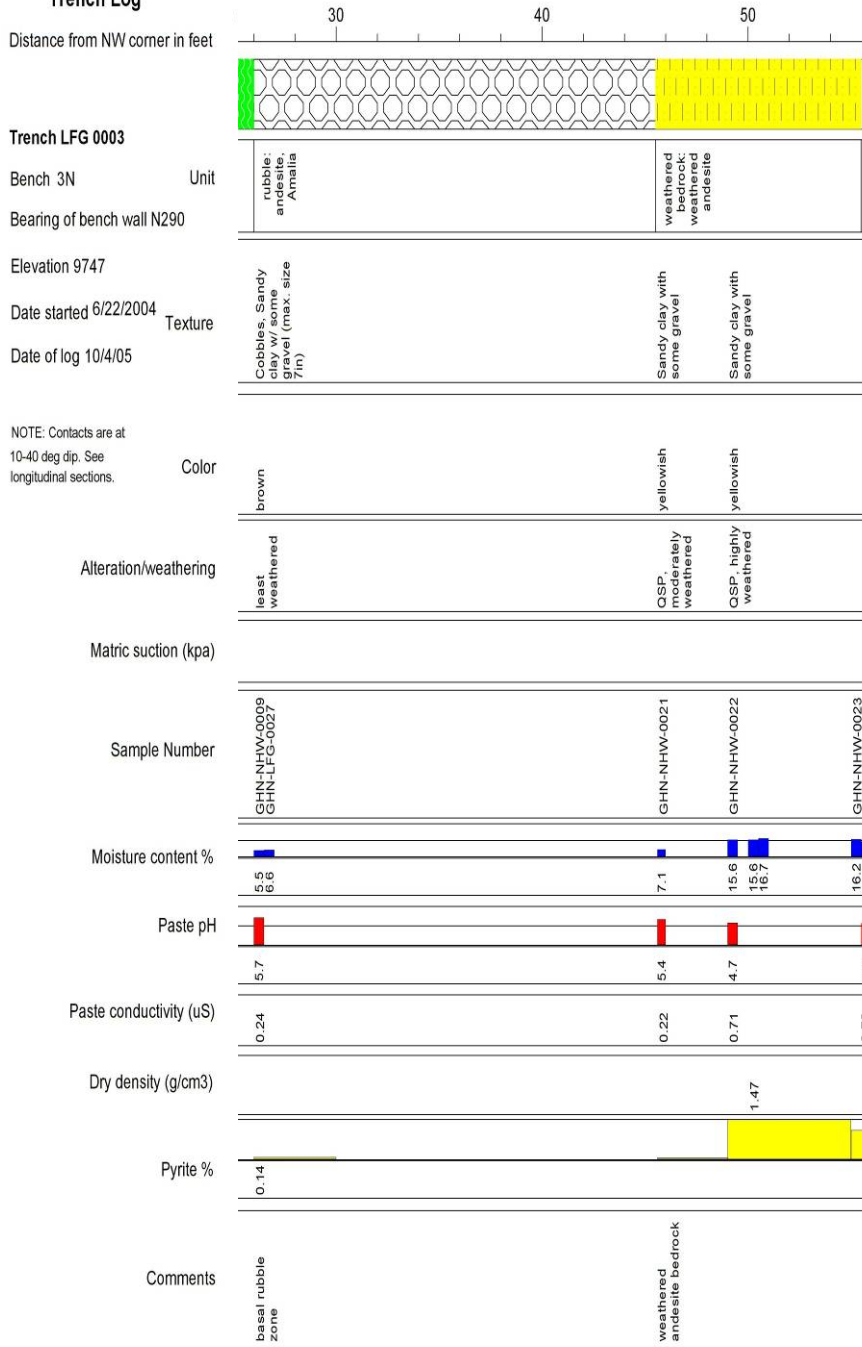
Pyrite %

Comments



NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



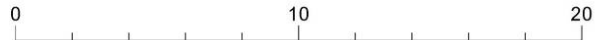
2 of 2

Trench LFG-0003 Bench 3N, 2 of 2

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 0003

Bench 4N Unit

Bearing of bench wall N290

Elevation 9747

Date started 6/22/2004 Texture

Date of log 10/4/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

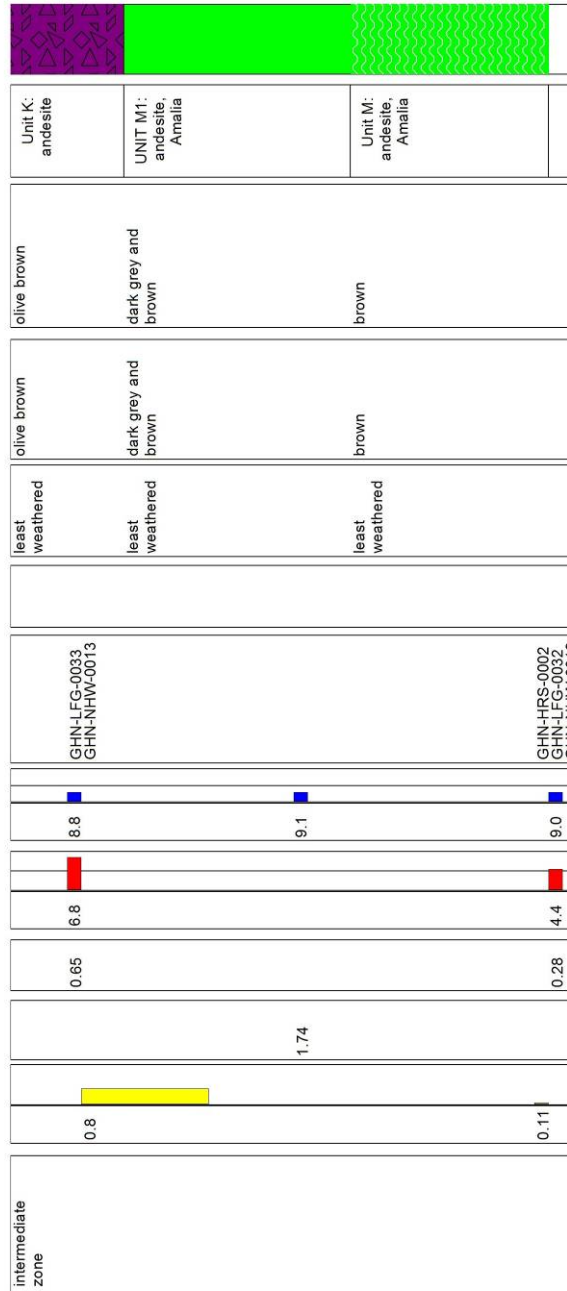
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



1 of 1

Trench LFG-0003 Bench 4N

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-0004

Bench 1N Unit

Bearing of bench wall N100

Elevation 9742.69

Date started 6/23/2004 Texture

Date of log 2/19/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

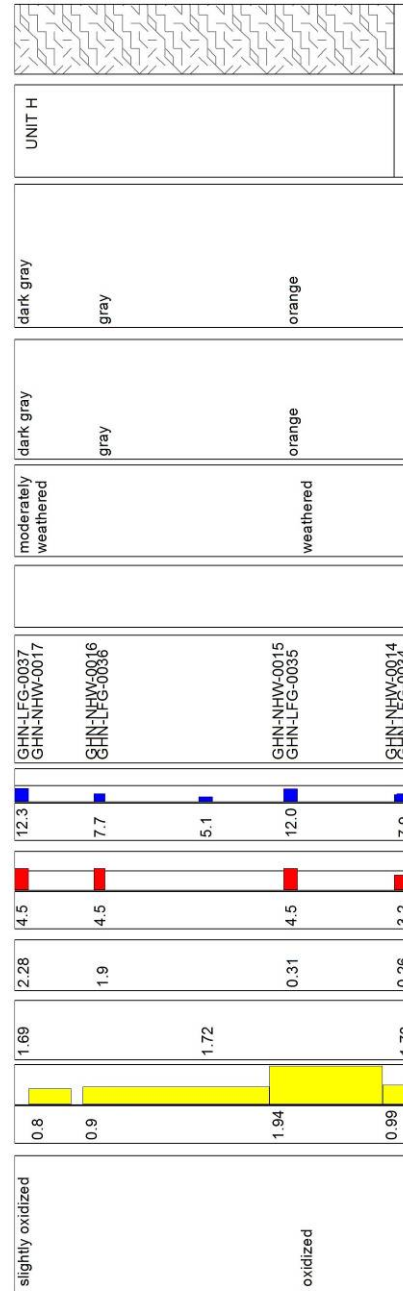
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



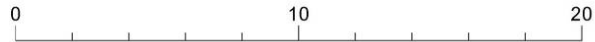
1 of 1

Trench LFG-0004 Bench 1N

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 0004

Bench 2N Unit

Bearing of bench wall N90

Elevation 9742.69

Date started 6/23/2004 Texture

Date of log 10/4/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

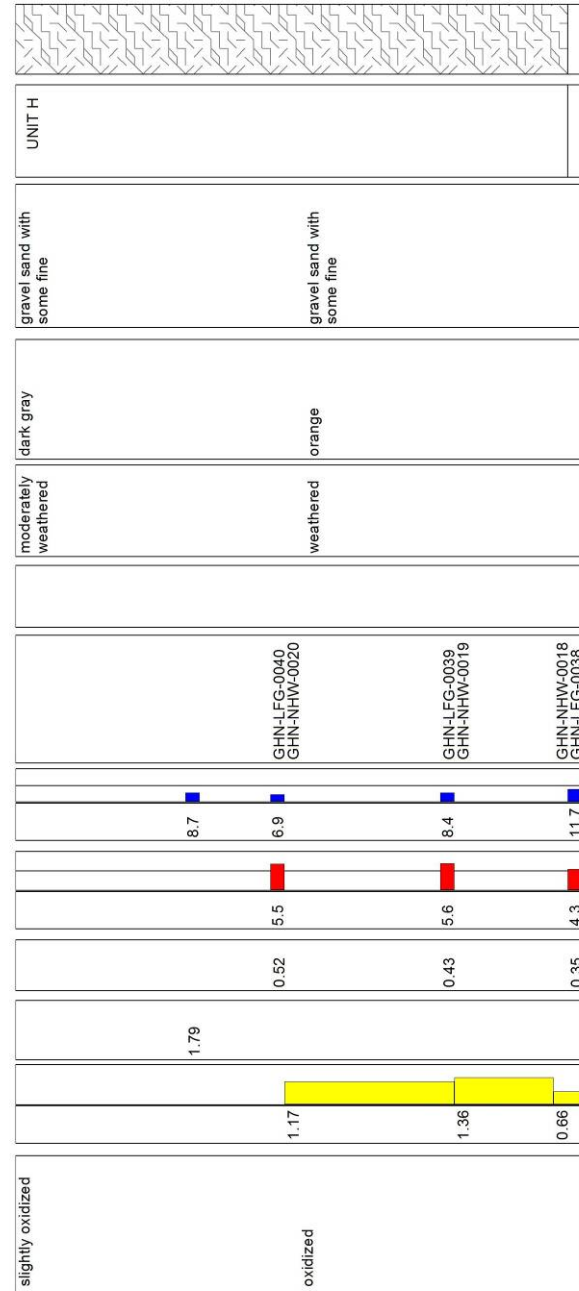
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



1 of 1

Trench LFG-0004 Bench 2N

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 005

Bench 1N Unit

Bearing of bench wall N100

Elevation 9765.43

Date started 8/8/2004 Texture

Date of log 10/4/05

Unit C:
andesite,
Amalia

gravel silt to 2
inches

NOTE: Contacts are at
10-40 deg dip. See
longitudinal sections. Color

brown

Alteration/weathering

weathered

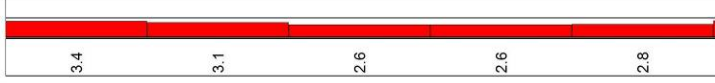
Matric suction (kpa)

Sample Number

GHN-VTM-0030	GHN-VTM-0031	GHN-VTM-0032	GHN-VTM-0033	GHN-VTM-0034	GHN-VTM-0035
--------------	--------------	--------------	--------------	--------------	--------------

Moisture content %

Paste pH

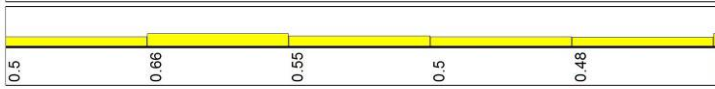


Paste conductivity (uS)

2.62	1.79	2.24	2.49	2.44	1.88
------	------	------	------	------	------

Dry density (g/cm3)

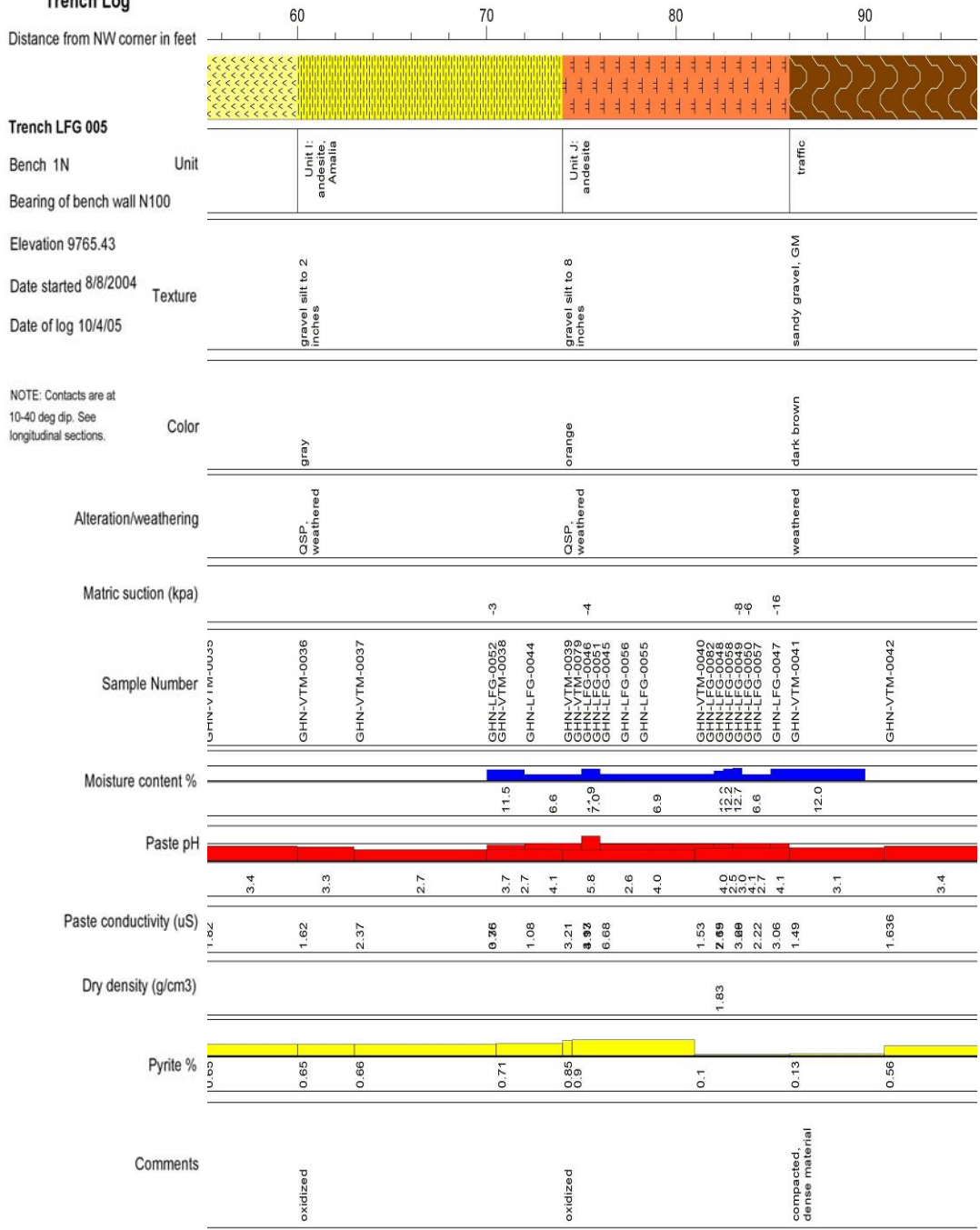
Pyrite %



Comments

oxidized

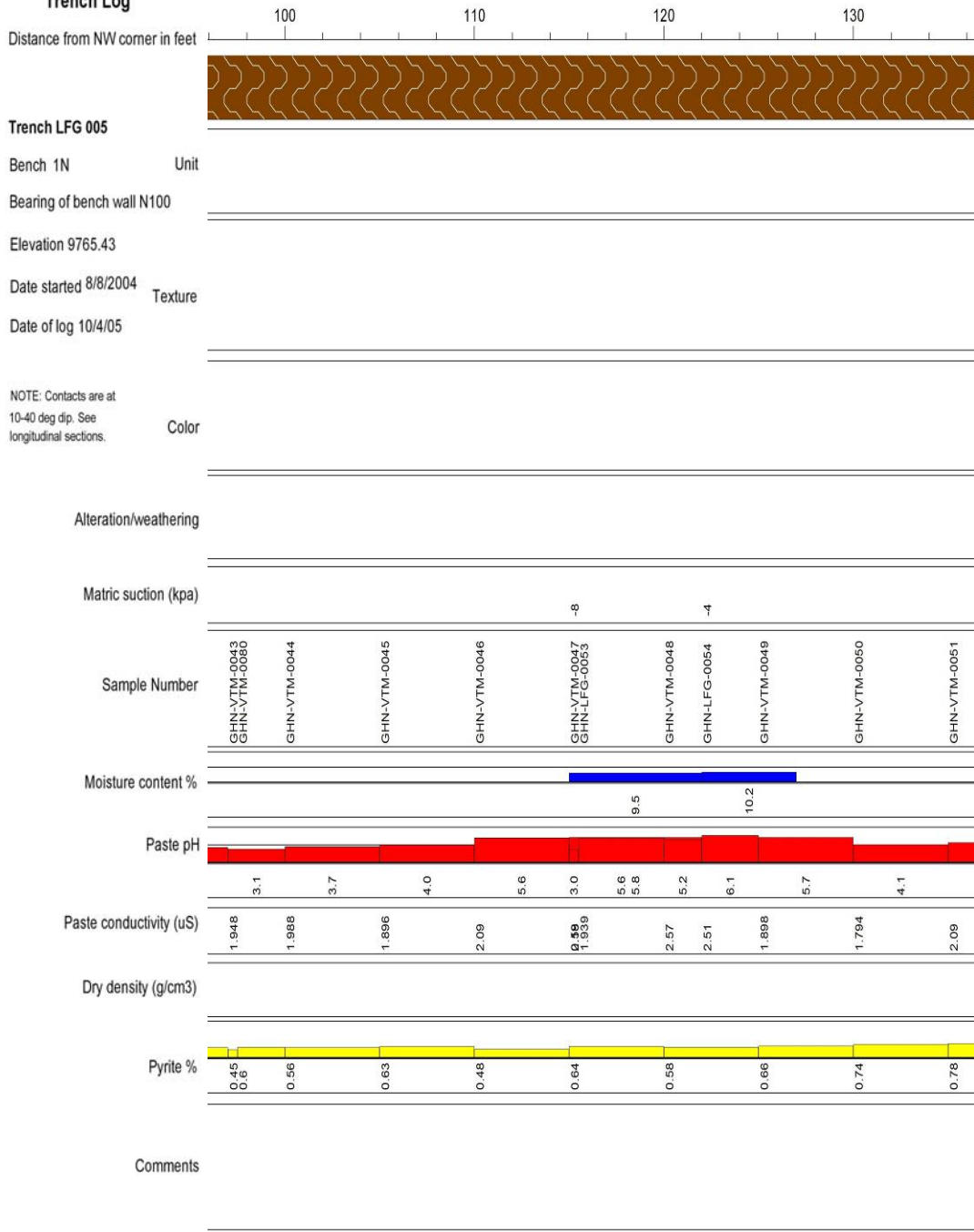
NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-005 Bench 1N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 1N, 3 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

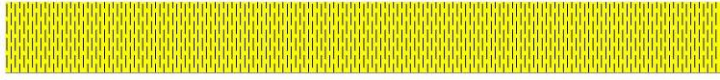
	140	150	160
Distance from NW corner in feet			
Trench LFG 005			
Bench 1N	Unit		
Bearing of bench wall N100			
Elevation 9765.43			
Date started 8/8/2004	Texture		
Date of log 10/4/05			
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color		
Alteration/weathering			
Matric suction (kpa)			
Sample Number	GHN-VTM-0052	GHN-VTM-0053	GHN-VTM-0054
Moisture content %			
Paste pH	4.5	5.3	4.9
Paste conductivity (uS)	1.506	2.25	2.06
Dry density (g/cm3)			
Pyrite %	0.63	0.66	0.64
Comments			

4 of 4

Trench LFG-005 Bench 1N, 4 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet



Trench LFG 005

Bench 2N Unit
 Bearing of bench wall N100

Unit 1:
 andesite,
 Amalia

Elevation 9762.45
 Date started 8/8/2004 Texture
 Date of log 10/4/05

sandy gravel, GM

NOTE: Contacts are at
 10-40 deg dip. See
 longitudinal sections. Color

orange gray

Alteration/weathering

GSP
 weathered

Matric suction (kpa)

Sample Number

GHN-VTM-0057 GHN-VTM-0058 GHN-VTM-0059 GHN-VTM-0060 GHN-VTM-0061

Moisture content %

Paste pH



Paste conductivity (uS)



Dry density (g/cm3)

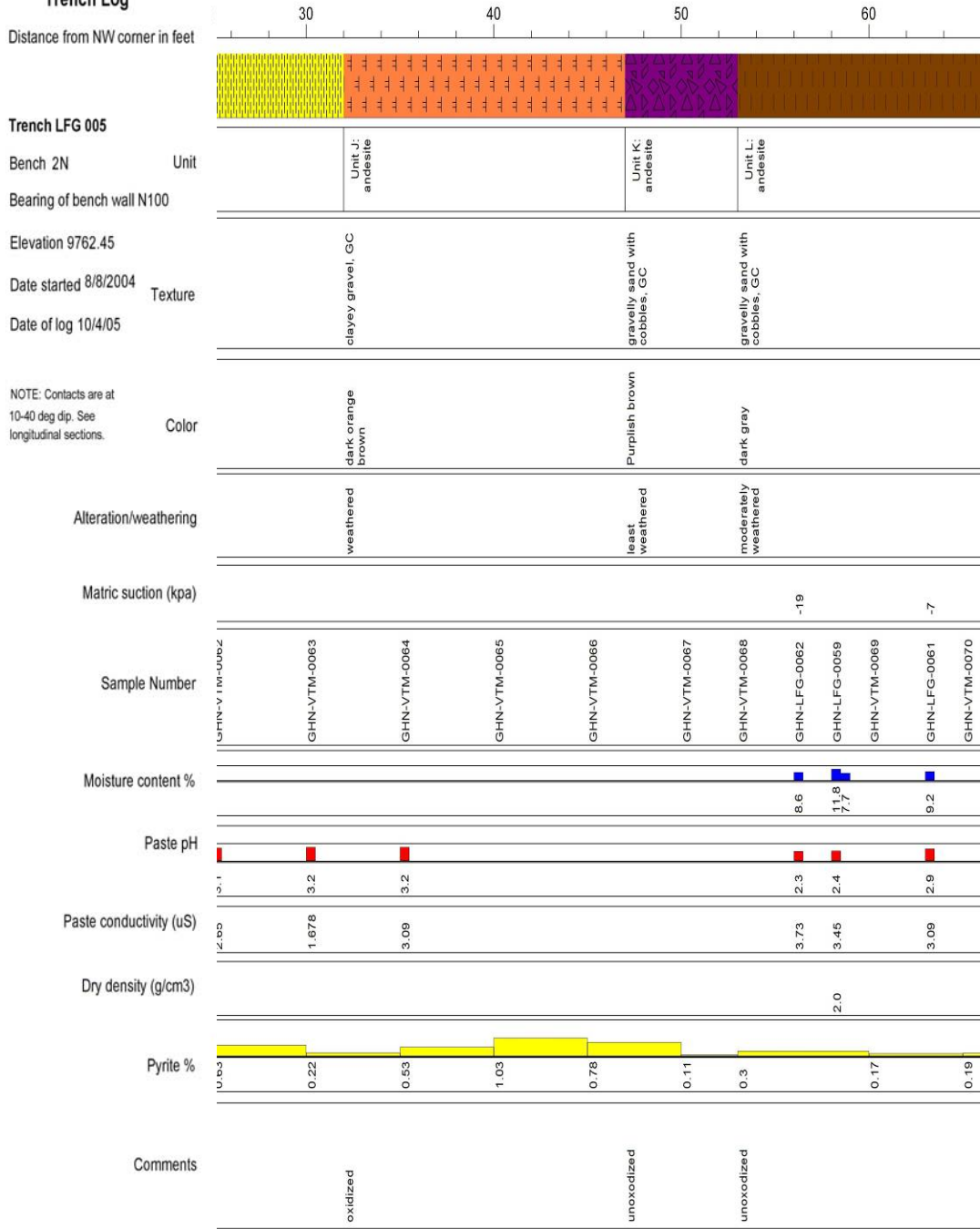
Pyrite %



Comments

oxidized

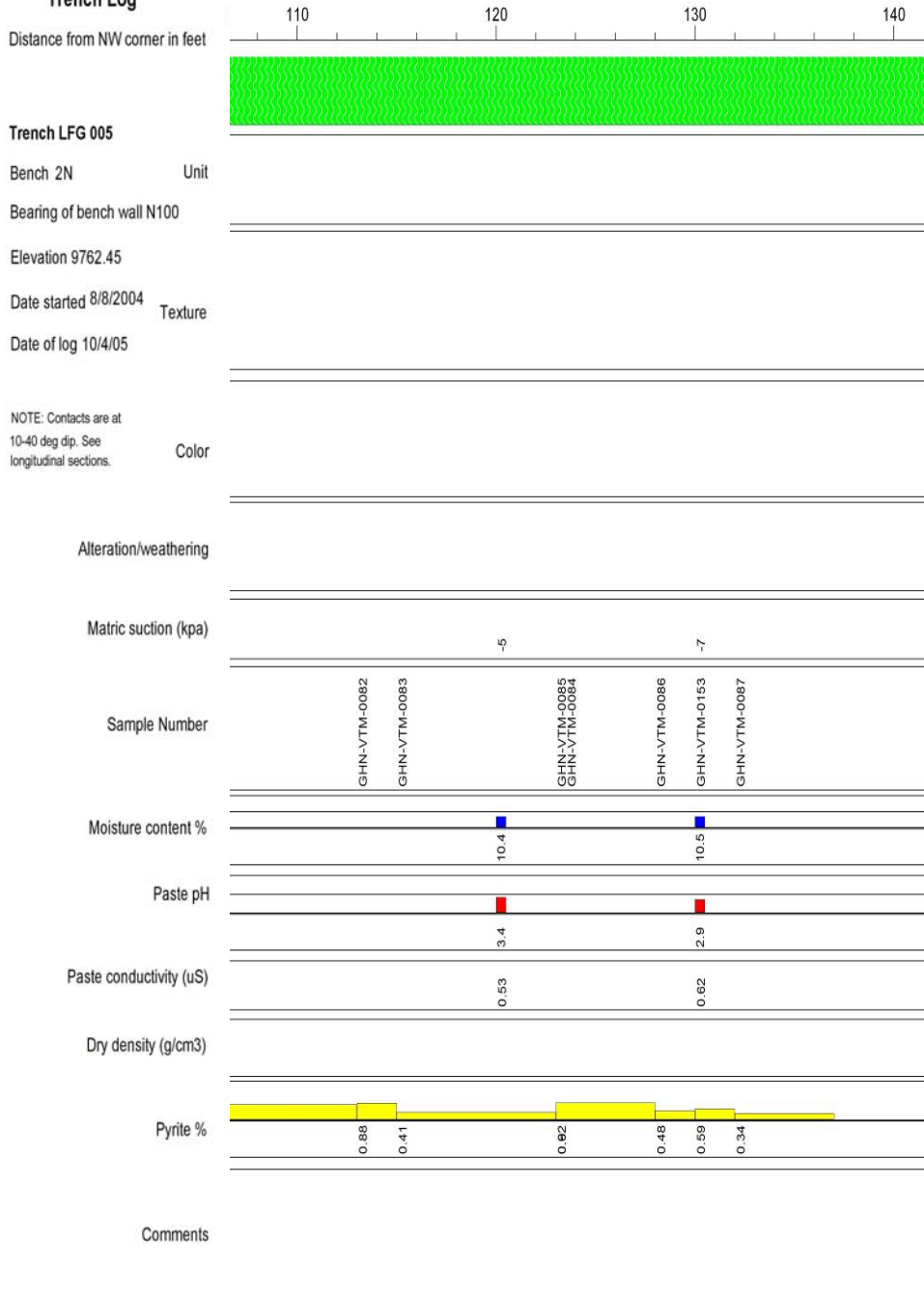
NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-005 Bench 2N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



4 of 4

Trench LFG-005 Bench 2N, 4 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-005

Bench 3 Unit

Bearing of bench wall N100

Elevation 9752.69

Date started 8/8/2004 Texture

Date of log 10/4/05

NOTE: Contacts are at
10-40 deg dip. See
longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

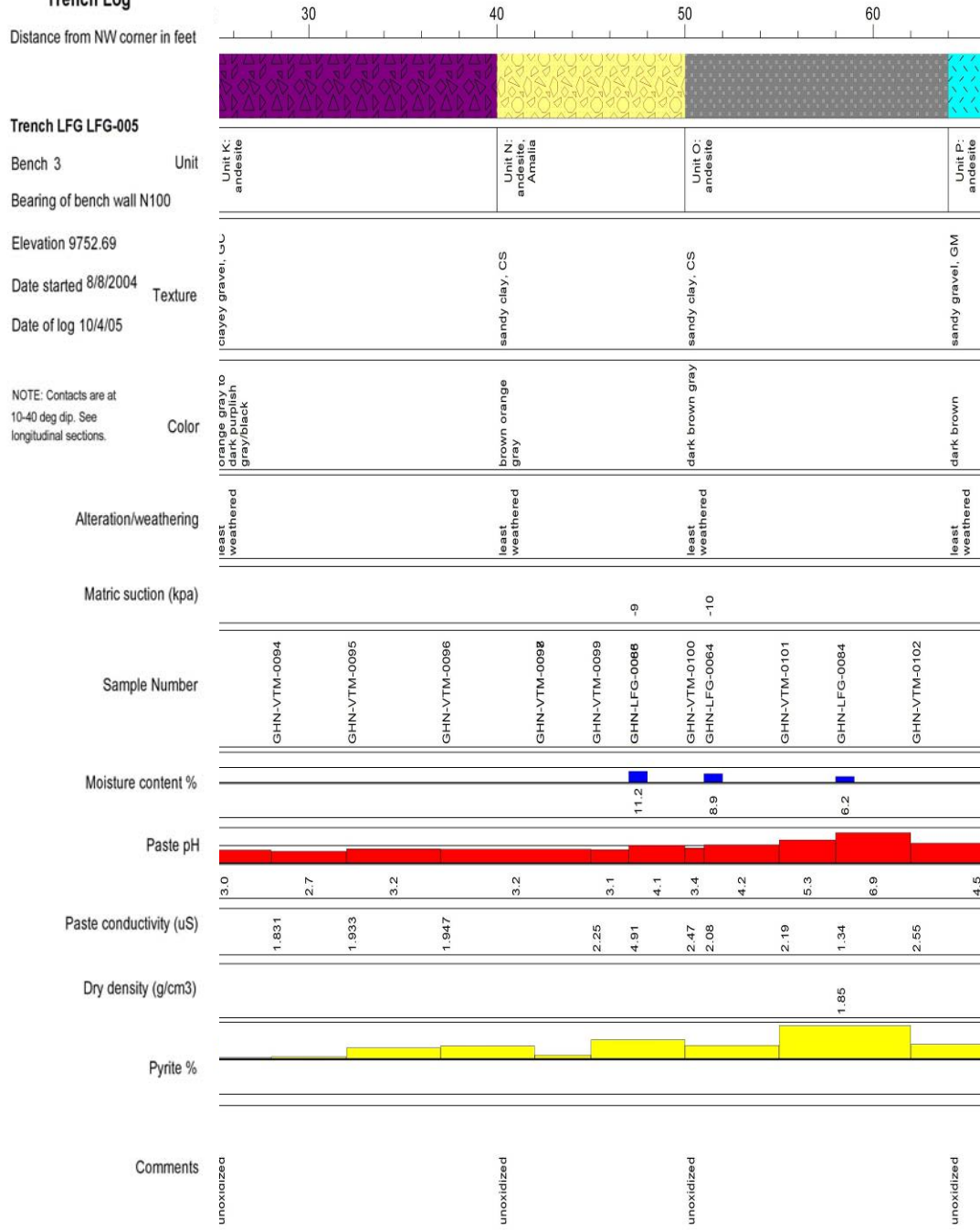
Pyrite %

Comments

	0		10		20	
Unit I:	andesite, Amalia		Unit J: andesite		Unit N: andesite, Amalia	
Texture	sandy gravel, GM		clayey gravel, GC		sandy clay, CS	
Color	orange gray		orange brown		brown orange gray	
Alteration/weathering	weathered		weathered		moderately weathered	
Matric suction (kpa)						
Sample Number	GHN-VTM-0088		GHN-VTM-0089		GHN-VTM-0090	
Moisture content %						
Paste pH	2.4		2.4		2.4	
Paste conductivity (uS)	3.01		3.67		2.36	
Dry density (g/cm3)						
Pyrite %						
Comments	oxidized		oxidized		intermediate	

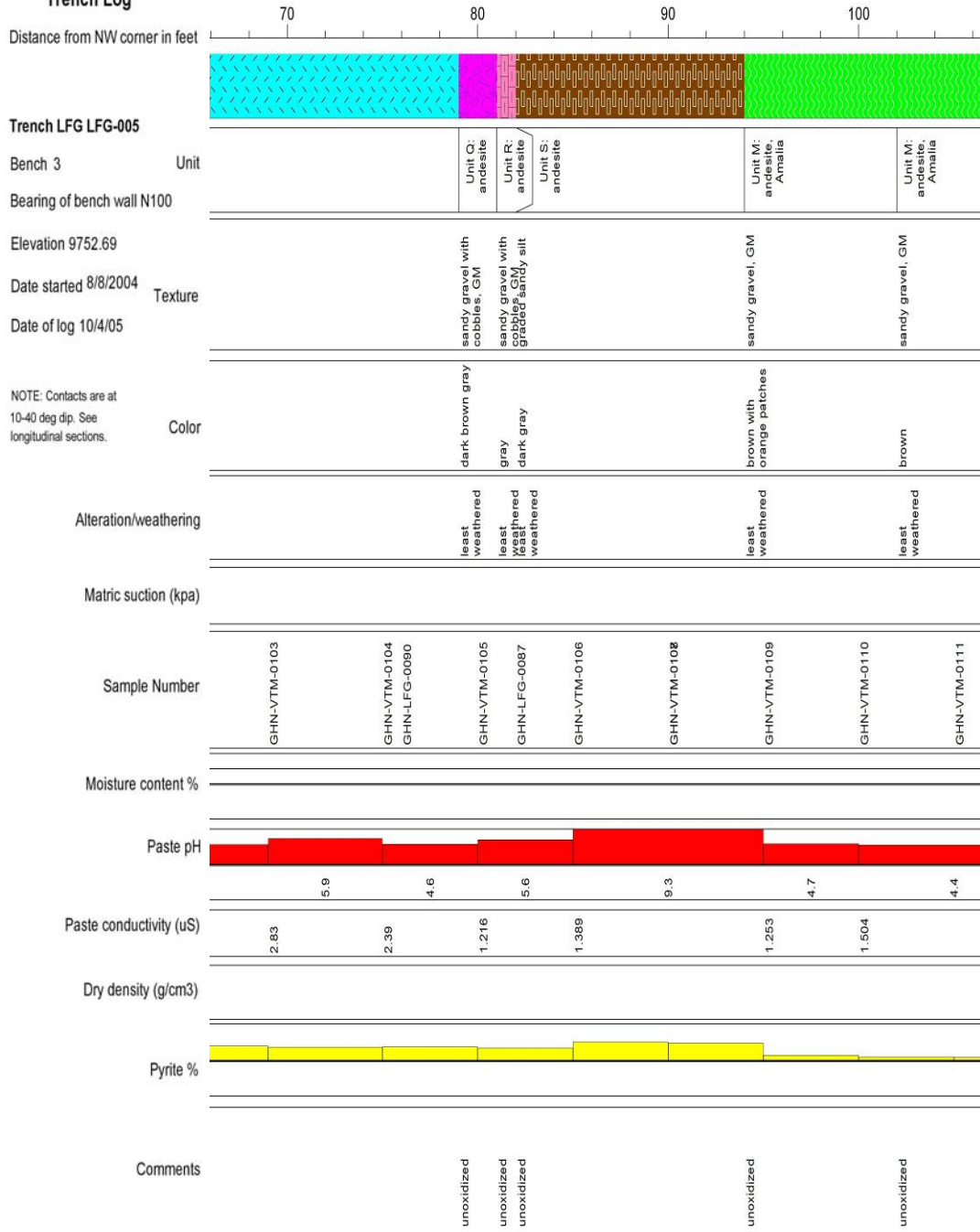
Trench LFG-005 Bench 3N, 1 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 3N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 3N, 3 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet	110	120	130
	[Green wavy pattern]		
Trench LFG LFG-005			
Bench 3	Unit		
Bearing of bench wall N100			
Elevation 9752.69			
Date started 8/8/2004	Texture		
Date of log 10/4/05			
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color		
Alteration/weathering			
Matric suction (kpa)			
Sample Number	GHN-VTM-0112	GHN-VTM-0113	GHN-VTM-0114
Moisture content %			
Paste pH	3.8	3.8	3.7
Paste conductivity (uS)	1.594	2.22	1.529
Dry density (g/cm3)			
Pyrite %			
Comments			

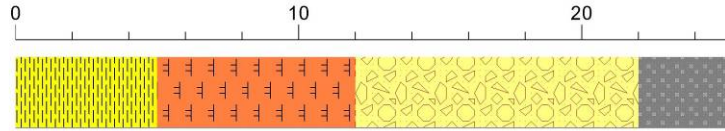
4 of 4

Trench LFG-005 Bench 3N, 4 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-005

Bench 4N Unit

Bearing of bench wall N100

Elevation 9755.54

Date started 8/8/2004 Texture

Date of log 10/4/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

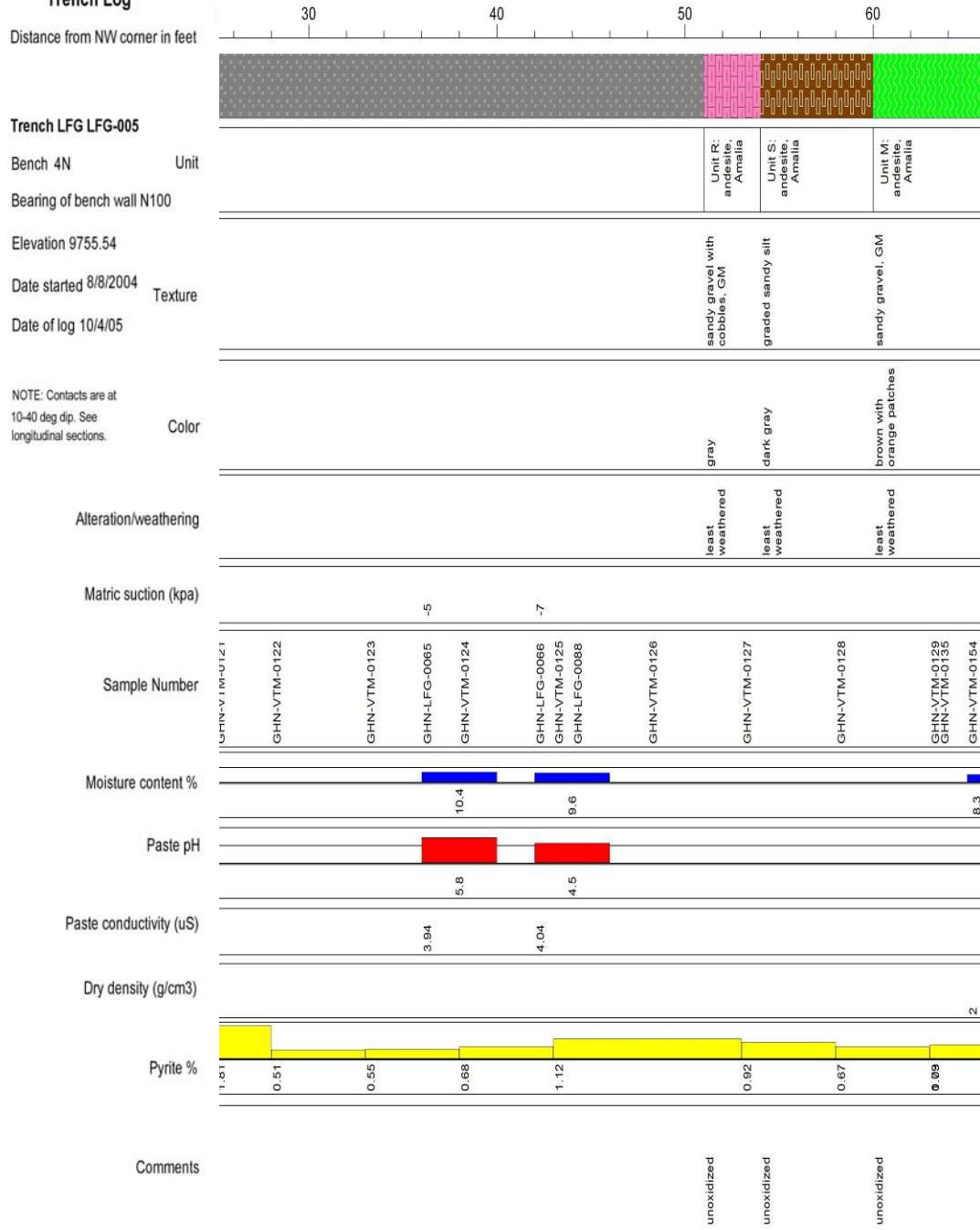
Pyrite %

Comments

Unit I: andesite, Amalia	Unit J: andesite	Unit N: andesite, Amalia	Unit O: andesite
clayey gravel, GC	clayey gravel, GC	sandy clay, CS	sandy clay, CS
Orange grey	Orange brown	brown orange gray	dark brown gray
moderately weathered	moderately weathered	weathered	least weathered
GHN-VTM-0116	GHN-VTM-0117	GHN-VTM-0118	GHN-VTM-0119
1.04	1.34	0.45	0.65
			0.19
oxidized	oxidized	intermediate	unoxidized

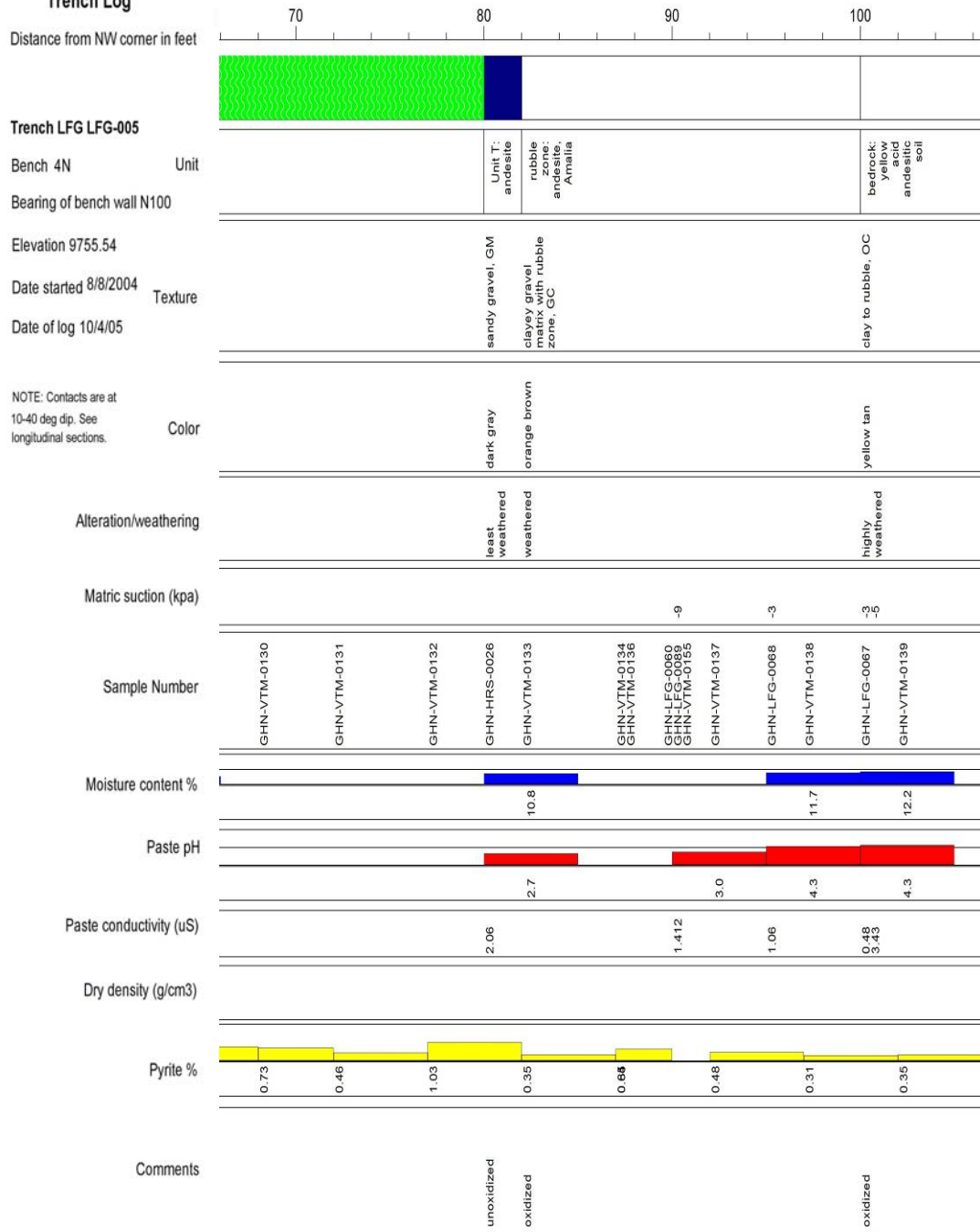
Trench LFG-005 Bench 4N, 1 of 5

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 4N, 2 of 5

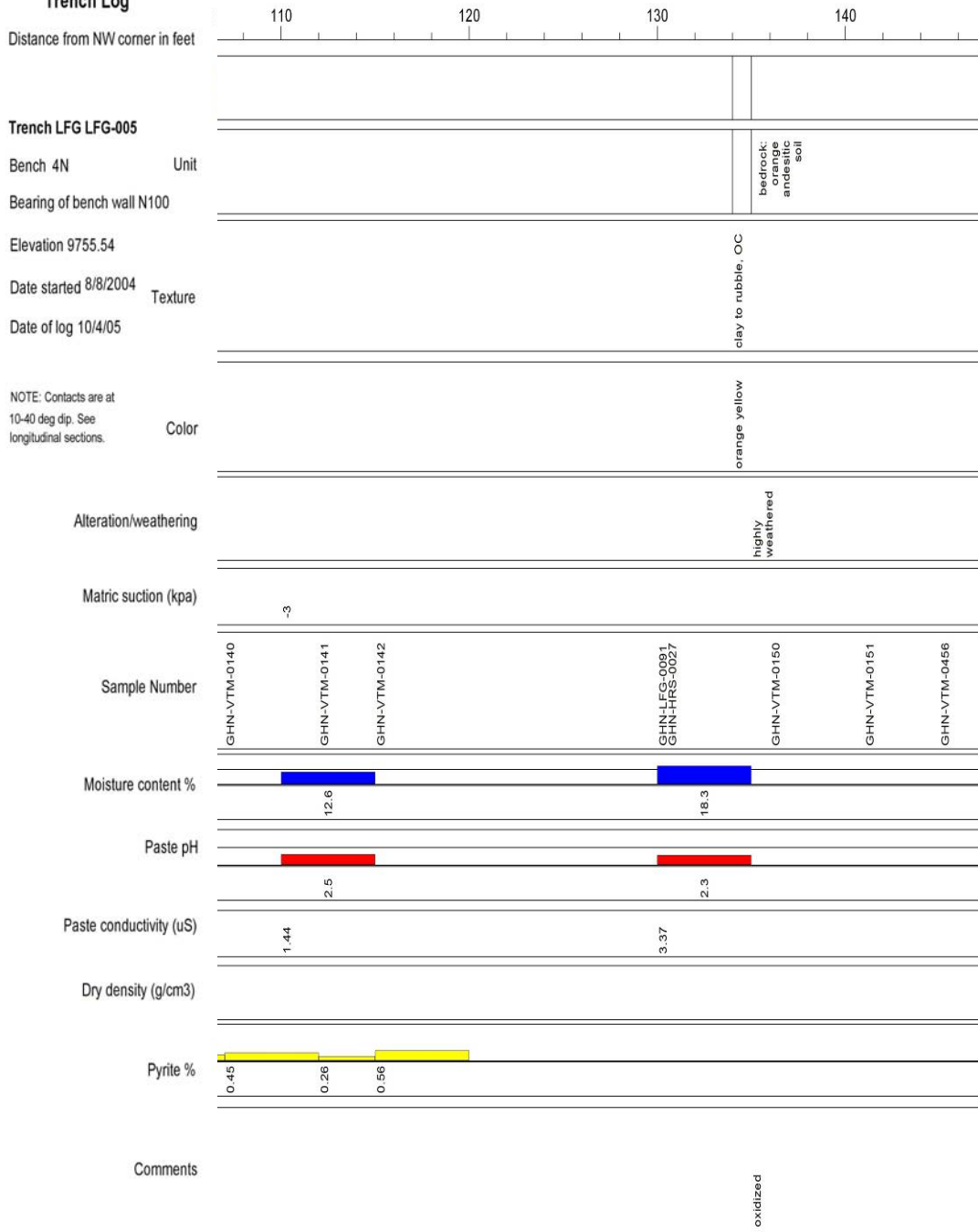
NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 4N, 3 of 5

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



Trench LFG-005 Bench 4N, 4 of 5

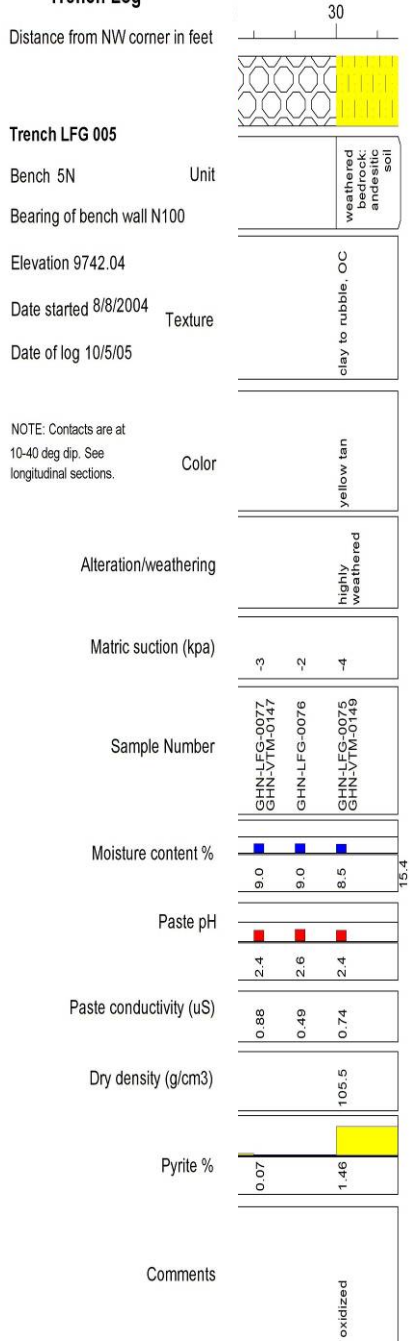
NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet	150
Trench LFG LFG-005	
Bench 4N	Unit
Bearing of bench wall N100	
Elevation 9755.54	
Date started 8/8/2004	Texture
Date of log 10/4/05	
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color
Alteration/weathering	
Matric suction (kpa)	
Sample Number	5 of 5
Moisture content %	
Paste pH	
Paste conductivity (uS)	
Dry density (g/cm3)	
Pyrite %	
Comments	

Trench LFG-005 Bench 4N, 5 of 5

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



2 of 2

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 006

Bench 7N Unit

Bearing of bench wall N100

Elevation 9736

Date started 9/17/2004 Texture

Date of log 10/4/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



Unit J: andesite	Unit N: andesite, Amalia
---------------------	--------------------------------

clay to cobbles with gravel, GC	clay to boulders, GC
------------------------------------	-------------------------

orange brown	orange-red brown
--------------	---------------------

weathered	least weathered
-----------	--------------------

--	--

GHN-VTM-0156	GHN-VTM-0157	GHN-KWD-0027 GHN-NWD-0022 GHN-VTM-0159 GHN-VTM-0158 GHN-NWD-0023	GHN-VTM-0160	GHN-VTM-0161
--------------	--------------	--	--------------	--------------

		17.3		
--	--	------	--	--

		2.5		
--	--	-----	--	--

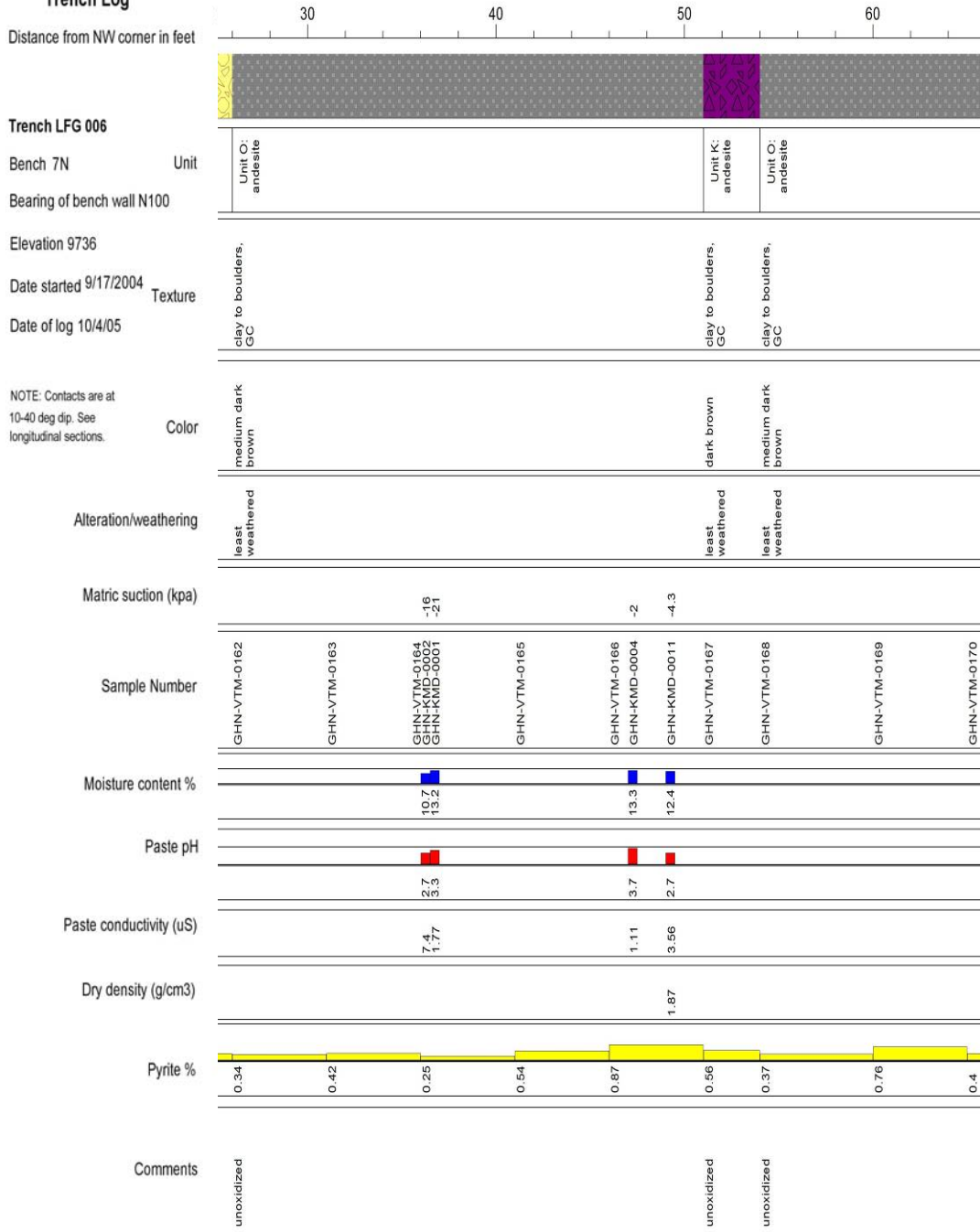
		3.14		
--	--	------	--	--

--	--	--	--	--

0.24	.35	0.33	0.4
------	-----	------	-----

oxidized	unoxidized
----------	------------

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-006 Bench 7N, 2 of 3

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet	70	80	90	100		
Trench LFG 006						
Bench 7N	Unit			Unit R: andesite		
Bearing of bench wall N100						
Elevation 9736						
Date started 9/17/2004	Texture			clay to small cobble, GC		
Date of log 10/4/05						
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color			dark brown		
Alteration/weathering	least weathered					
Matric suction (kpa)						
Sample Number	GHN-VTM-0171	GHN-VTM-0172	GHN-VTM-0173	GHN-VTM-0174	GHN-VTM-0175	GHN-VTM-0176
Moisture content %						
Paste pH						
Paste conductivity (uS)						
Dry density (g/cm3)						
Pyrite %	0.57	0.39	0.67	0.81	0.83	0.73
Comments					unoxidized	

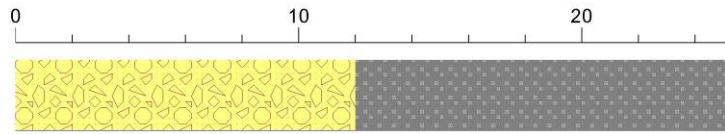
3 of 3

Trench LFG-006 Bench 7N, 3 of 3

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 006

Bench 8N Unit

Bearing of bench wall N100

Elevation 9733.15

Date started 9/17/2004 Texture

Date of log 10/5/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

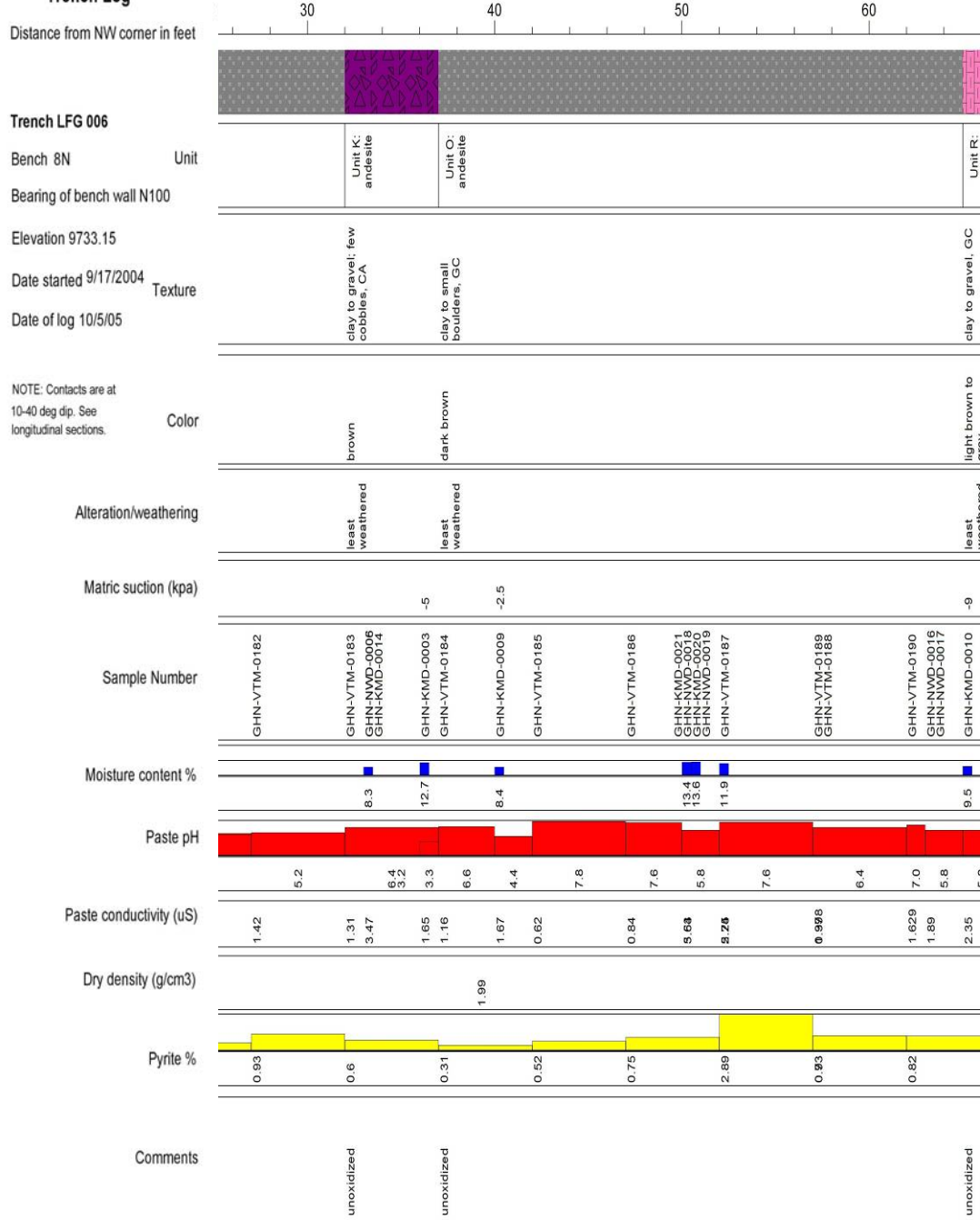
Dry density (g/cm3)

Pyrite %

Comments

Unit N: andesite, Amalia	Unit O: andesite		
clay to boulders, GC	clay to boulders, GC		
light brown to orange	dark brown to slightly orange		
least weathered	least weathered		
GHN-VTM-0201	GHN-VTM-0178	GHN-VTM-0179	GHN-VTM-0180 GHN-VTM-0181
3.3	5.0	4.6	4.8
2.77	2.07	2.09	2.86
1.04	0.4	0.43	0.43
intermediate	unoxidized		

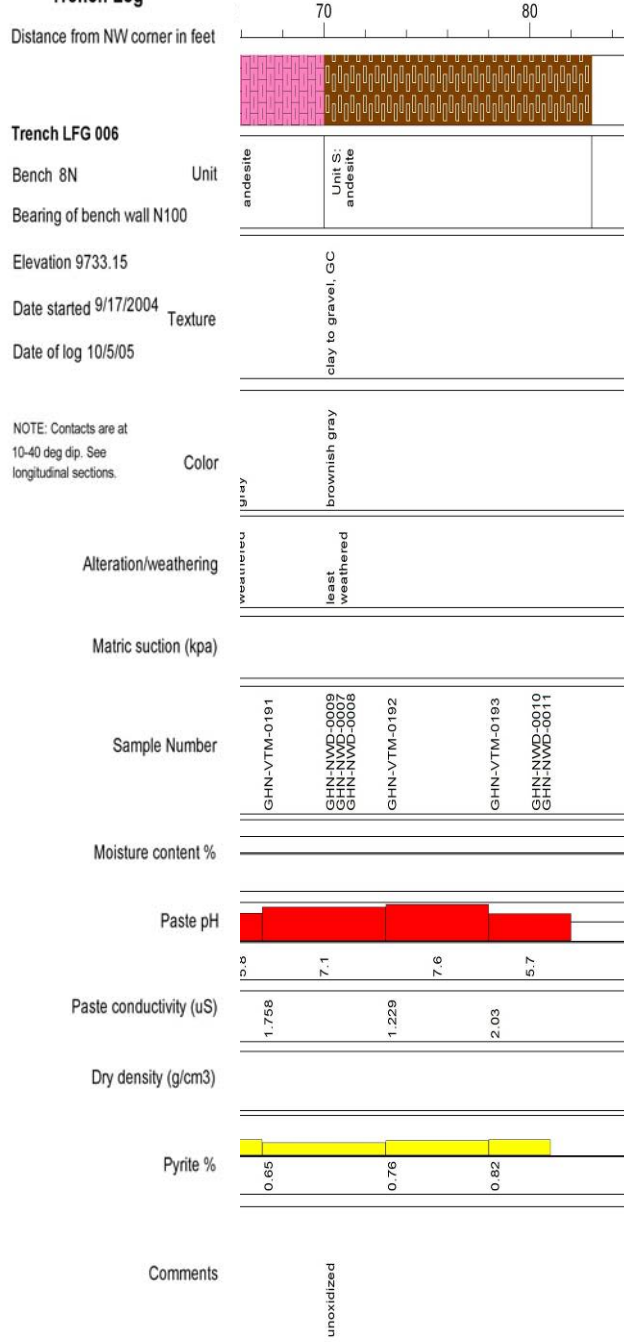
NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-006 Bench 8N, 2 of 3

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



3 of 3

Trench LFG-006 Bench 8N, 3 of 3

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 006

Bench 9N Unit

Bearing of bench wall N100

Elevation 9729.86

Date started 9/17/2004 Texture

Date of log 10/5/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

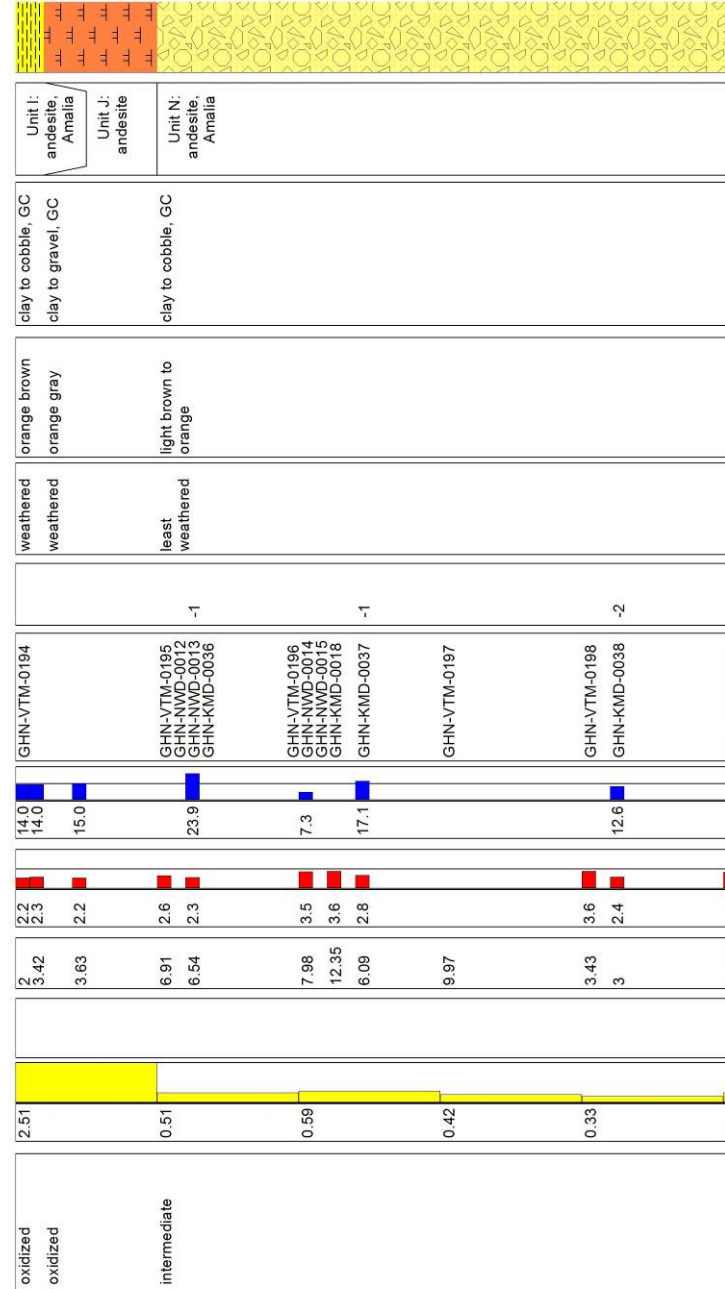
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

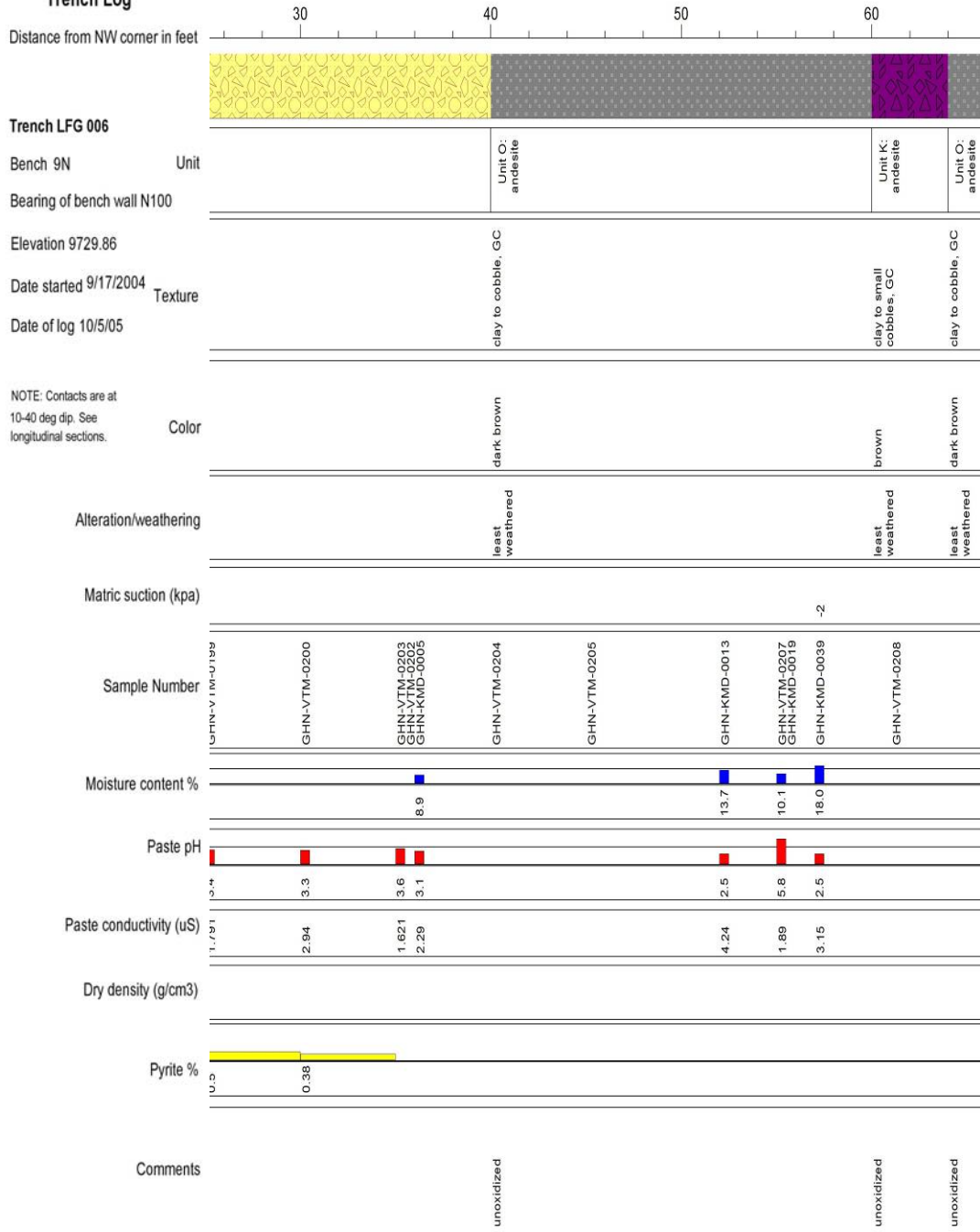
Pyrite %

Comments



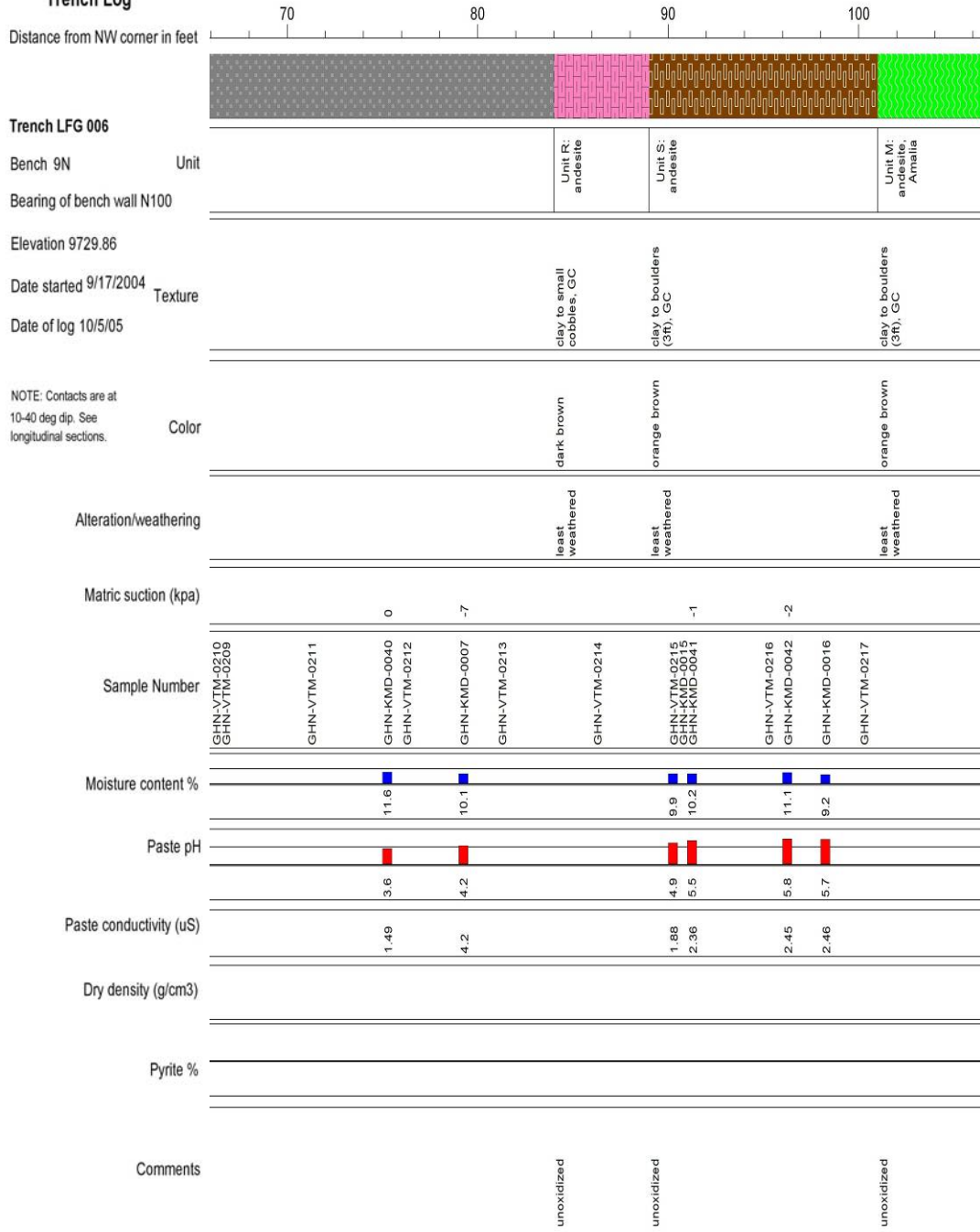
Trench LFG-006 Bench 9N, 1 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-006 Bench 9N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log

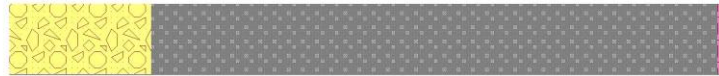


Trench LFG-006 Bench 9N, 3 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 006

Bench 10N Unit

Bearing of bench wall N100

Elevation 9724.61

Date started 9/17/2004 Texture

Date of log 10/5/05

Unit N: andesite, Amalia	Unit O: andesite
--------------------------------	---------------------

clay to cobble, GC	clay to cobble, GC
--------------------	--------------------

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.

brown	orange brown
-------	--------------

Alteration/weathering

least weathered	least weathered
-----------------	-----------------

Matric suction (kpa)

-5	-2	-1
----	----	----

Sample Number

GHN-VTM-0219	GHN-KMD-0028	GHN-VTM-0221	GHN-VTM-0222	GHN-VTM-0223
GHN-VTM-0218	GHN-NWD-0025			
GHN-KMD-0012	GHN-KMD-0024			
	GHN-KMD-0006			
	GHN-VTM-0220			
	GHN-KMD-0022			

Moisture content %

12.3	16.6	13.5	15.6
------	------	------	------

Paste pH

2.7	2.6	2.6	2.6
-----	-----	-----	-----

Paste conductivity (uS)

4.65	6.13	5.88	4.85
------	------	------	------

Dry density (g/cm3)

--	--	--	--

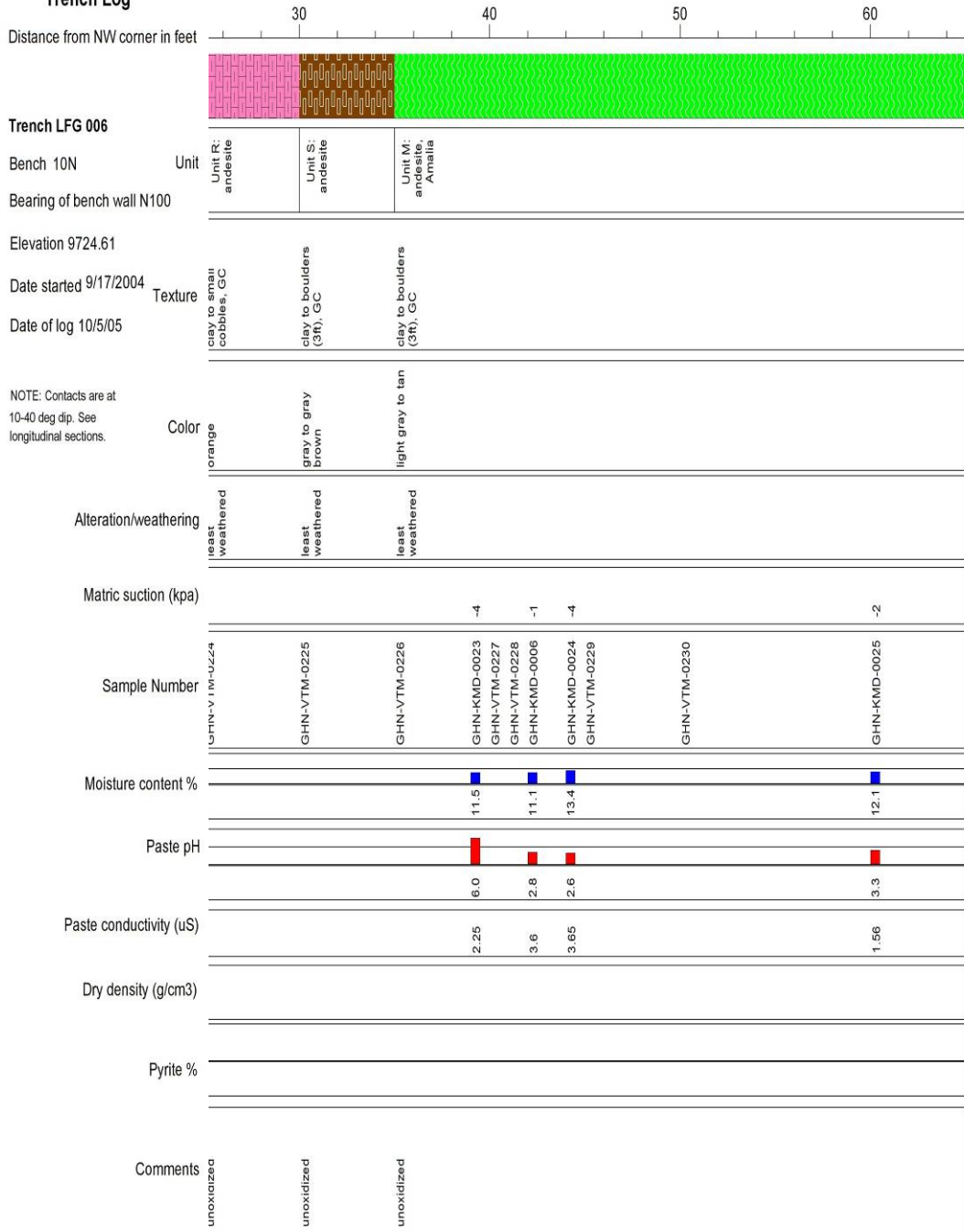
Pyrite %

--	--	--	--

Comments

intermediate	unoxidized
--------------	------------

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log

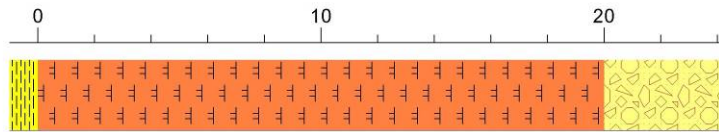


Trench LFG-006 Bench 10N, 2 of 2

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 007

Bench 12N Unit

Bearing of bench wall N100

Elevation 9692.2

Date started 9/24/2004 Texture

Date of log 10/5/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

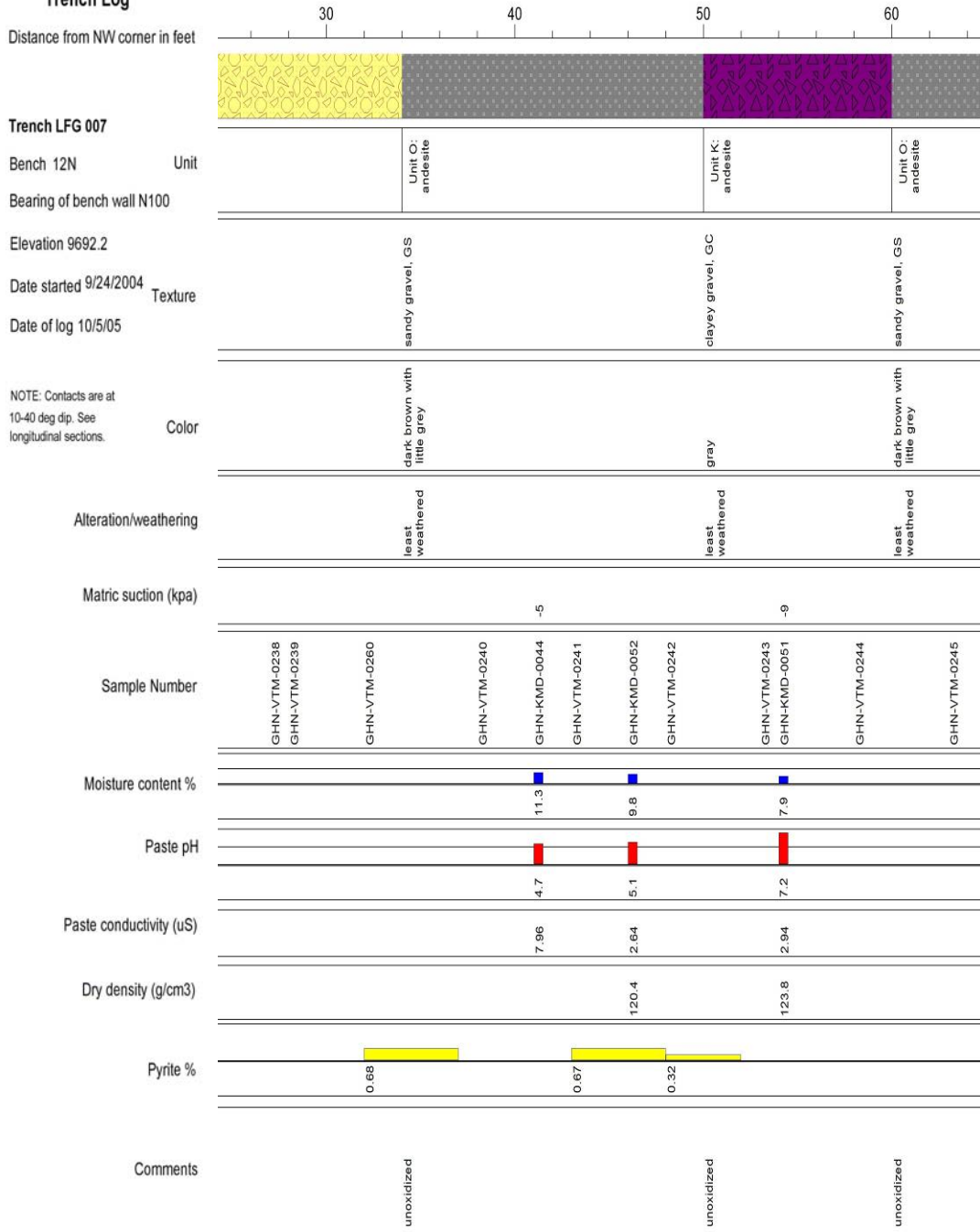
Pyrite %

Comments

Unit I: andesite, Amalia	Unit J: andesite	Unit N: andesite, Amalia
gravely clay, GC sandy gravel, GS		sandy gravel with clay, GS
yellowish grey with orange brown		orange brown
weathered weathered		least weathered
	-13	-8
GHN-VTM-0231	GHN-VTM-0232	GHN-VTM-0233
	GHN-KMD-0054	GHN-VTM-0234
		GHN-VTM-0235
		GHN-KMD-0053
		GHN-VTM-0236
		GHN-VTM-0237
	9.6	9.4
	3.9	4.3
	6.05	2.84
	121.2	112.8
oxidized oxidized		intermediate

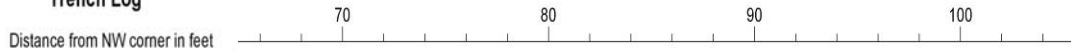
Trench LFG-007 Bench 12N, 1 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-007 Bench 12N, 2 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG 007

Bench 12N Unit

Bearing of bench wall N100

Elevation 9692.2

Date started 9/24/2004 Texture

Date of log 10/5/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments

Sample Number	Moisture content %	Paste pH	Paste conductivity (uS)	Dry density (g/cm3)
GHN-VTM-0246				
GHN-VTM-0247				116.3
GHN-VTM-0248				
GHN-VTM-0249				
GHN-VTM-0250				
GHN-KMD-0066	7.8	6.4	4.05	125.2
GHN-KMD-0050	9.6	5.7	3.64	
GHN-VTM-0251				
GHN-VTM-0252				
GHN-VTM-0253				
GHN-VTM-0254				

Trench LFG-007 Bench 12N, 3 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet		110	120
Trench LFG 007			
Bench 12N	Unit	Unit M: andesite, Anatite	Unit S: andesite Unit R: andesite
Bearing of bench wall N100			
Elevation 9692.2			
Date started 9/24/2004	Texture	clayey sand and gravel, SC	clayey sand and gravel, SC
Date of log 10/5/05			
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color	orange brown grayish brown	orange brown
	Alteration/weathering	least weathered	least weathered
	Matric suction (kpa)		
	Sample Number	GHN-VTM-0255	GHN-VTM-0256 GHN-VTM-0257 GHN-VTM-0258
	Moisture content %		
	Paste pH		
	Paste conductivity (uS)		
	Dry density (g/cm3)		
	Pyrite %		
	Comments	unoxidized unoxidized	

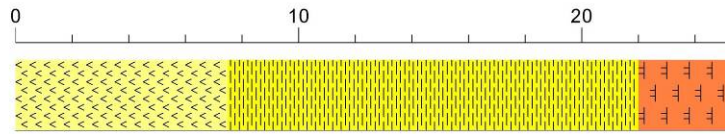
4 of 4

Trench LFG-007 Bench 12N, 4 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 007

Bench 13N Unit

Bearing of bench wall N100

Elevation 9686.48

Date started 9/24/2004 Texture

Date of log 10/5/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

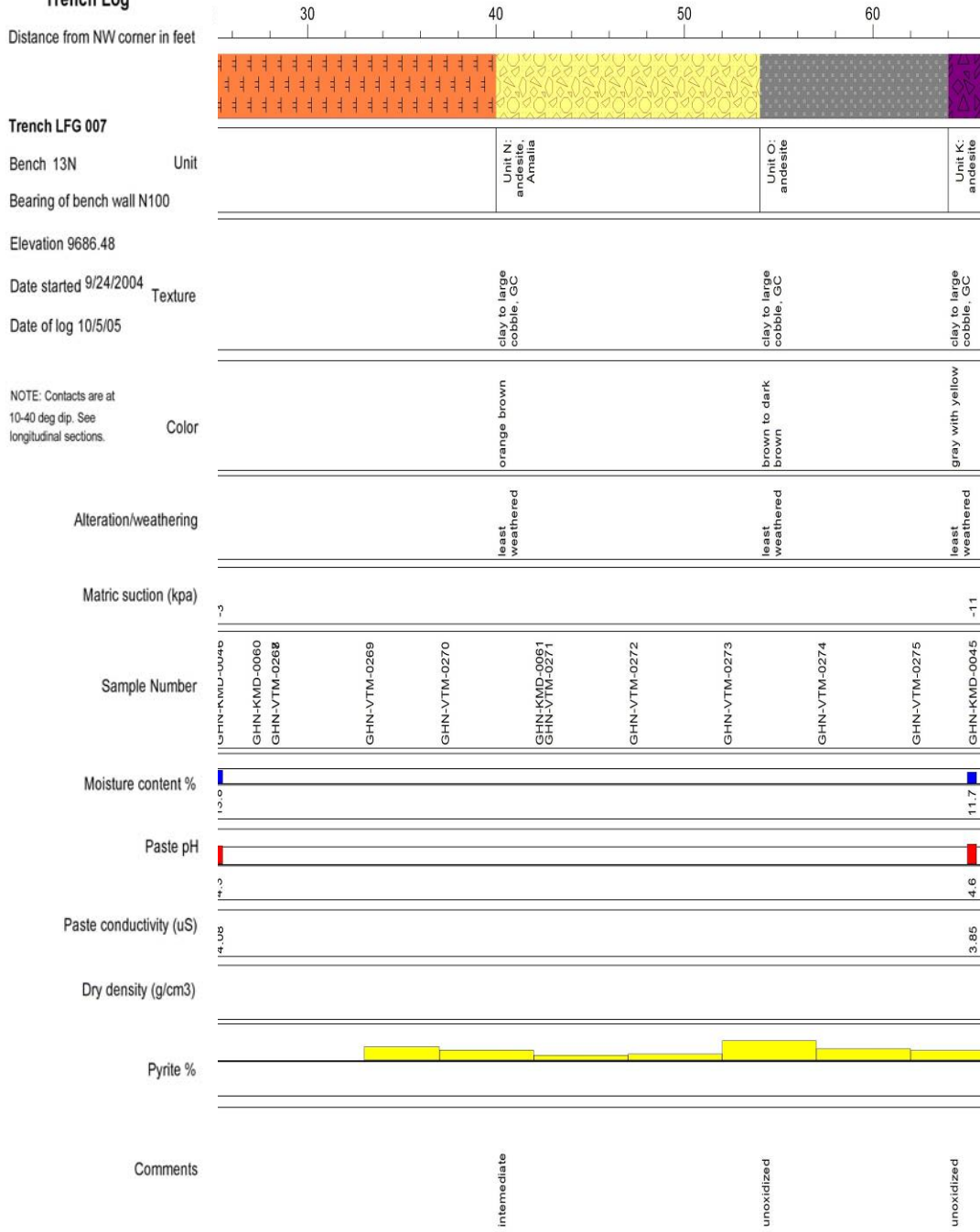
Dry density (g/cm3)

Pyrite %

Comments

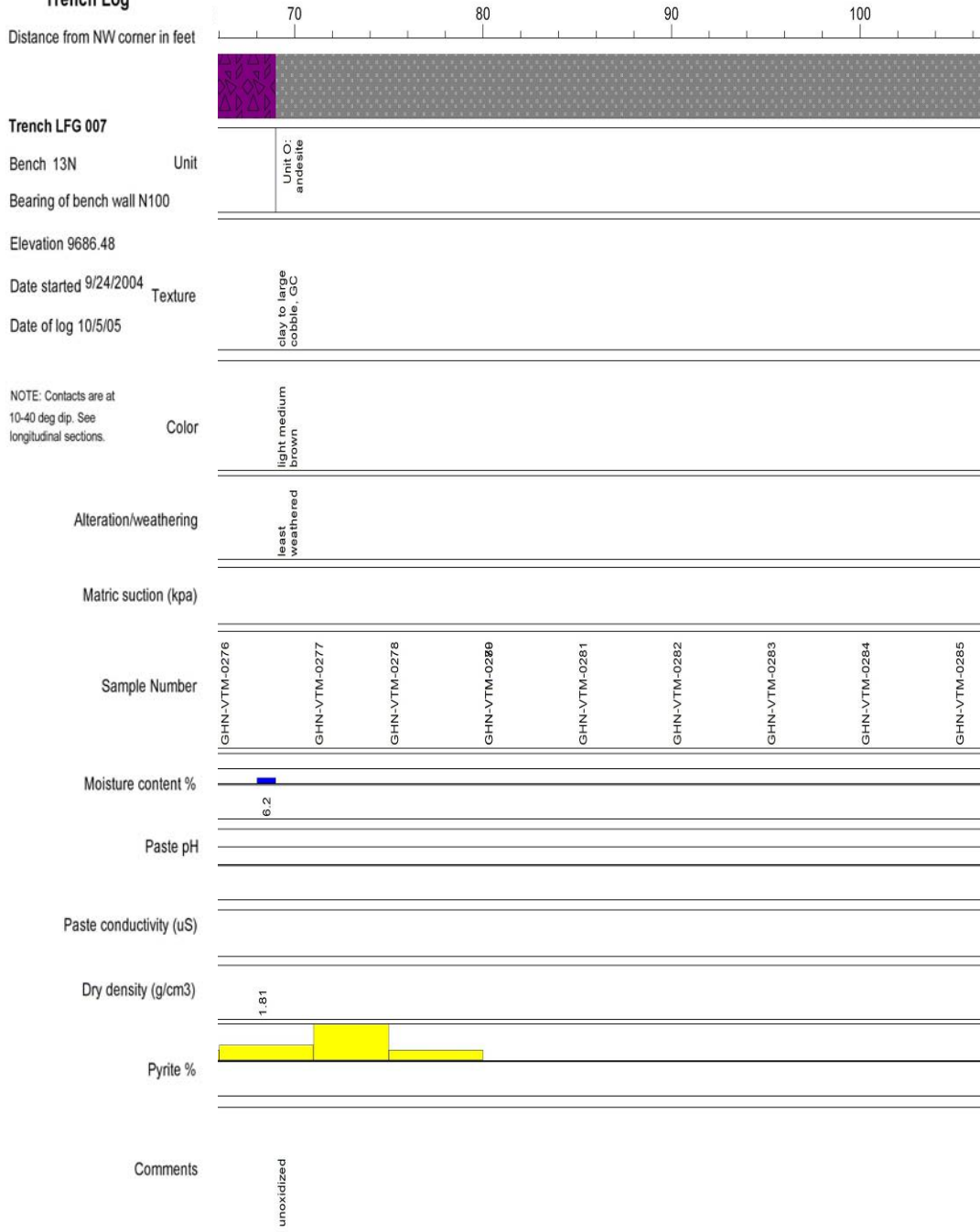
Unit C: andesite, Amalia	Unit I: andesite, Amalia	Unit J: andesite
clay to large cobbles, GC	clay to large cobbles, GC	clay to cobble, GC
light yellow	orange yellow with gray	brown
weathered	weathered	weathered
GHN-VTM-0261	GHN-VTM-0262	GHN-KMD-0059 GHN-VTM-0263
		GHN-KMD-0058
		GHN-VTM-0264
		GHN-VTM-0265
		GHN-VTM-0266
oxidized	oxidized	oxidized

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-007 Bench 13N, 2 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-007 Bench 13N, 3 of 4

NEW MEXICO TECH
WEATHERING STUDY

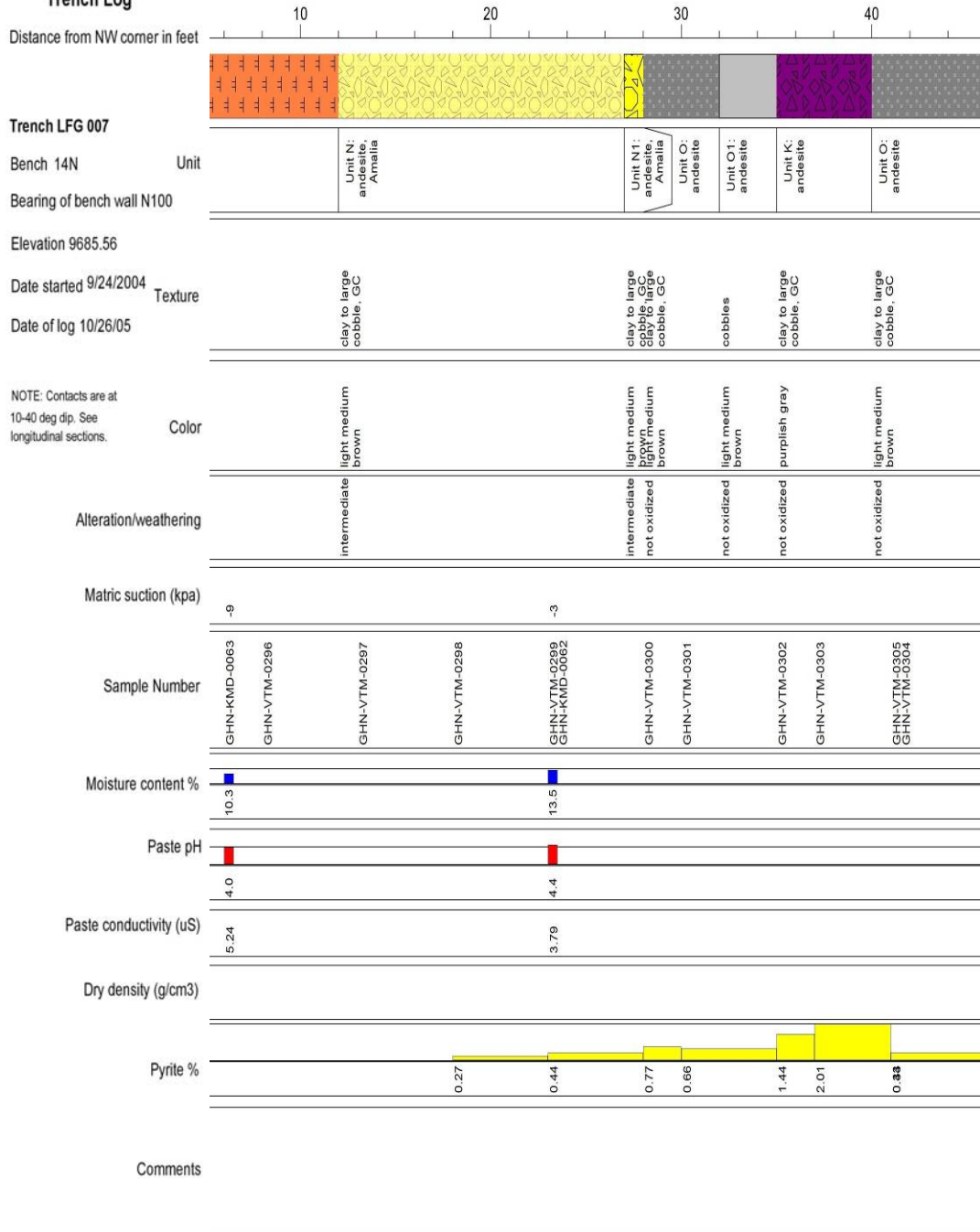
Goathill North Rock Pile
Trench Log

Distance from NW corner in feet		110	120	130
Trench LFG 007				
Bench 13N	Unit	Unit M: andesite, Analla		
Bearing of bench wall N100				
Elevation 9686.48		GC		
Date started 9/24/2004	Texture	clay to cobble		
Date of log 10/5/05				
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color	light brown		
Alteration/weathering		least weathered		
Matric suction (kpa)				
Sample Number		GHN-VTM-0286	GHN-VTM-0287	GHN-VTM-0288
				GHN-VTM-0289
				GHN-VTM-0290
Moisture content %				
Paste pH				
Paste conductivity (uS)				
Dry density (g/cm3)				
Pyrite %				
Comments		unoxidized		

4 of 4

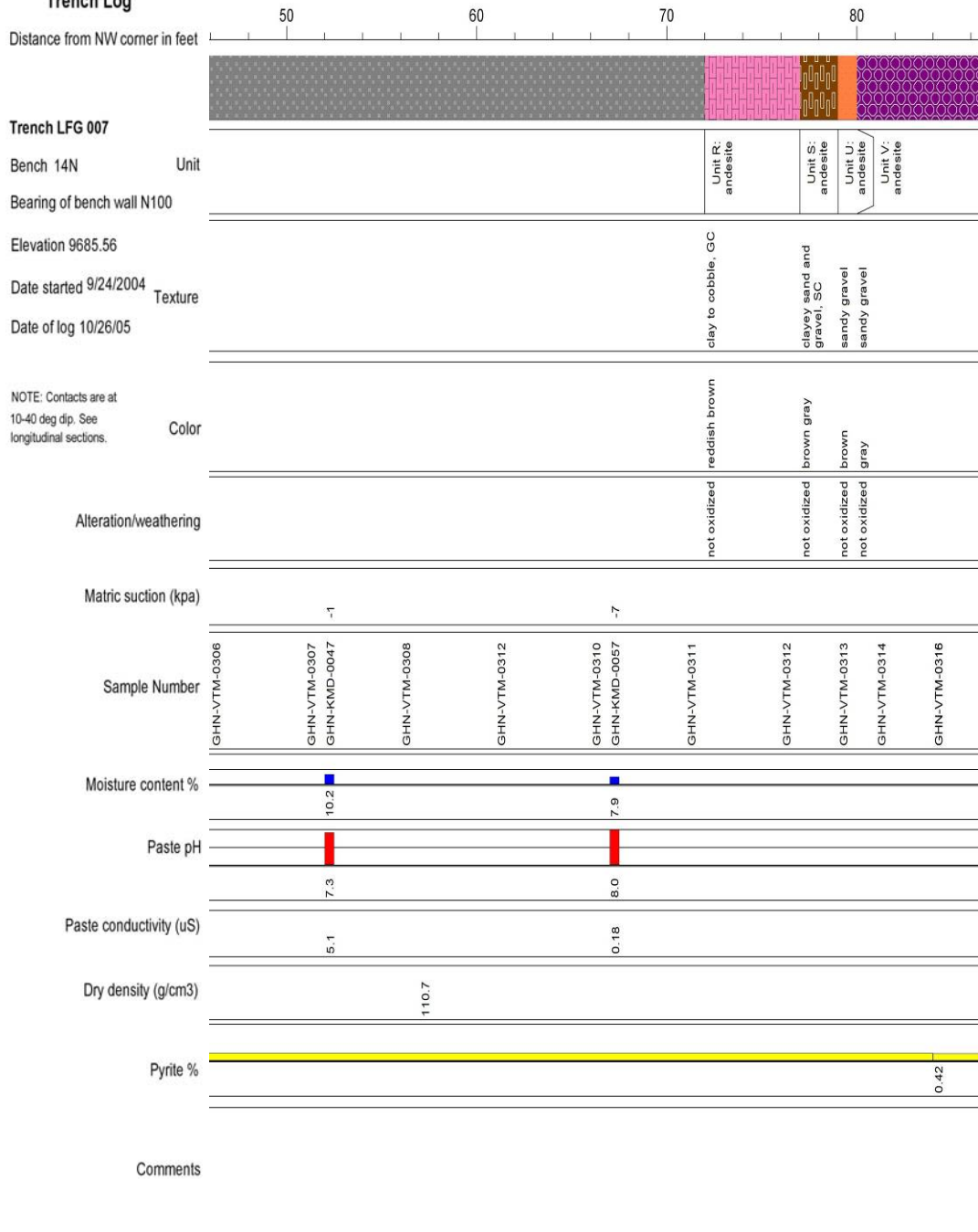
Trench LFG-007 Bench 13N, 4 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-007 Bench 14N, 2 of 5

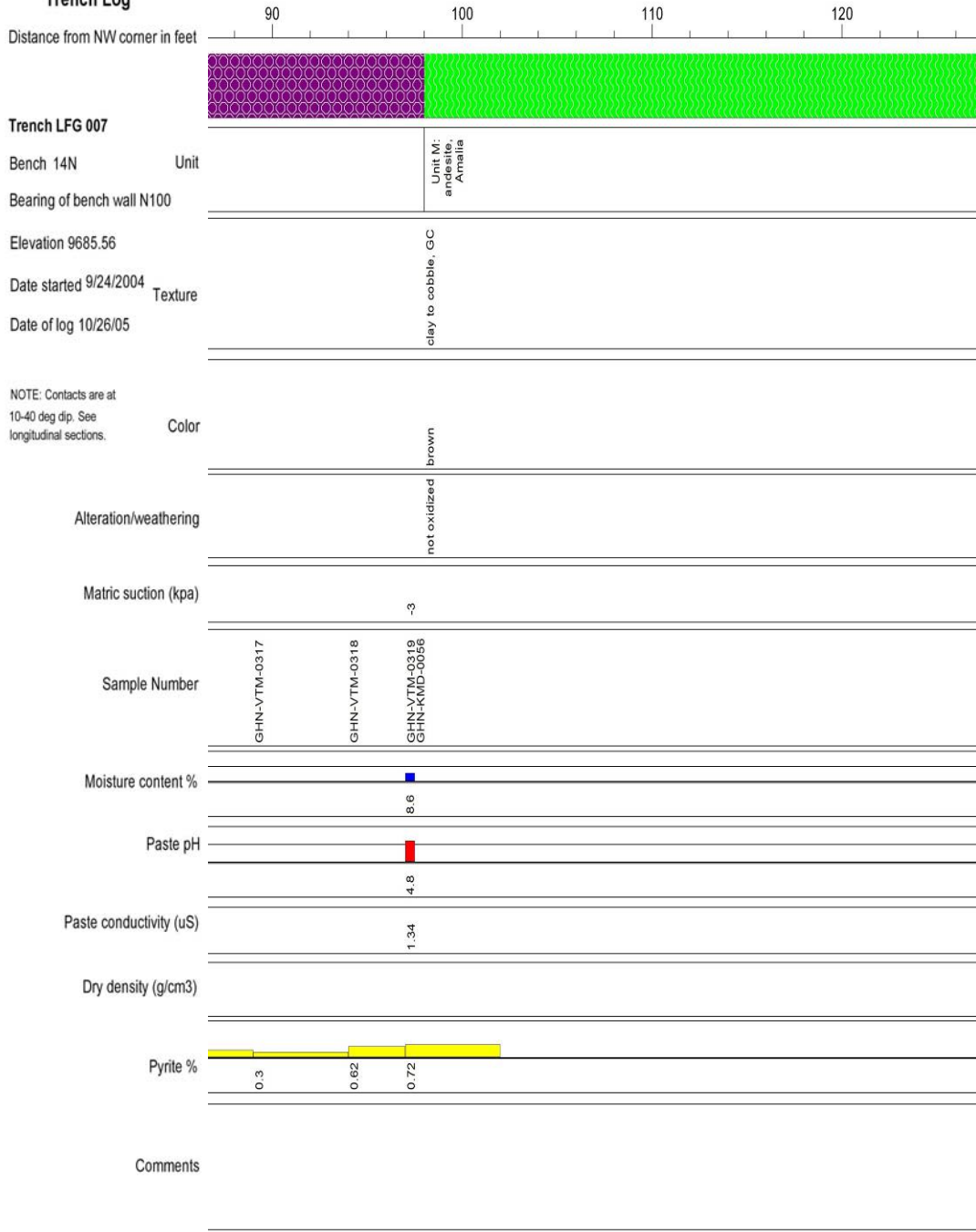
NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-007 Bench 14N, 3 of 5

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



Trench LFG-007 Bench 14N, 4 of 5

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet 130



Trench LFG 007

Bench 14N Unit

Bearing of bench wall N100

Elevation 9685.56

Date started 9/24/2004 Texture

Date of log 10/26/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number 5 of 5

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

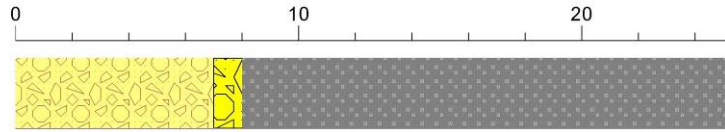
Comments

Trench LFG-007 Bench 14N, 5 of 5

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG 007

Bench 15N Unit

Bearing of bench wall N95

Elevation 9681.93

Date started 9/24/2004 Texture

Date of log 10/30/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

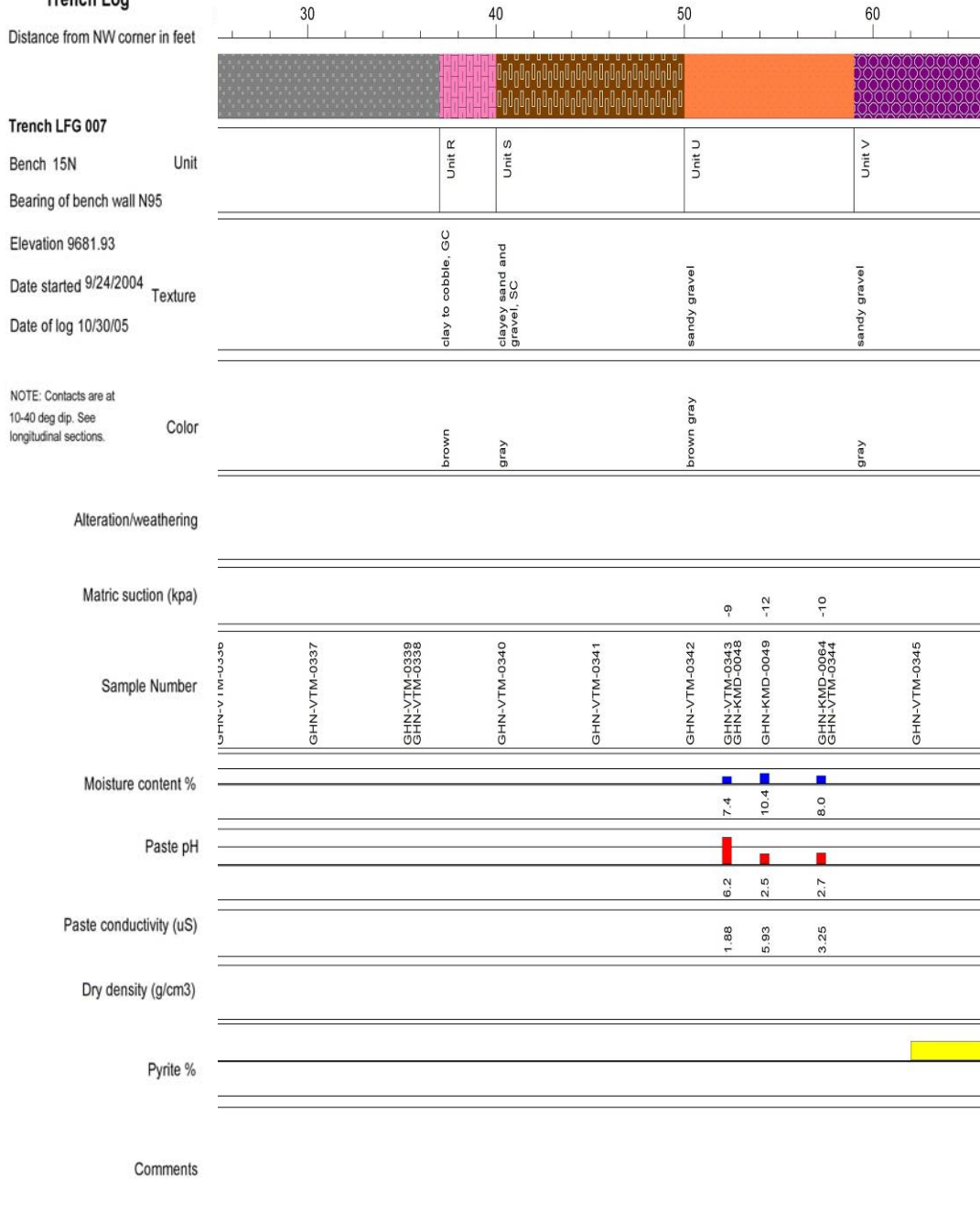
Pyrite %

Comments

Unit N	Unit N1	Unit O																	
clay to large cobbles, GC	clay to large cobble, GC	clay to large cobble, GC																	
gray brown	gray brown	brown gray																	
GHN-VTM-0330	GHN-VTM-0331	GHN-VTM-0332 GHN-VTM-0333	GHN-VTM-0334	GHN-VTM-0335															

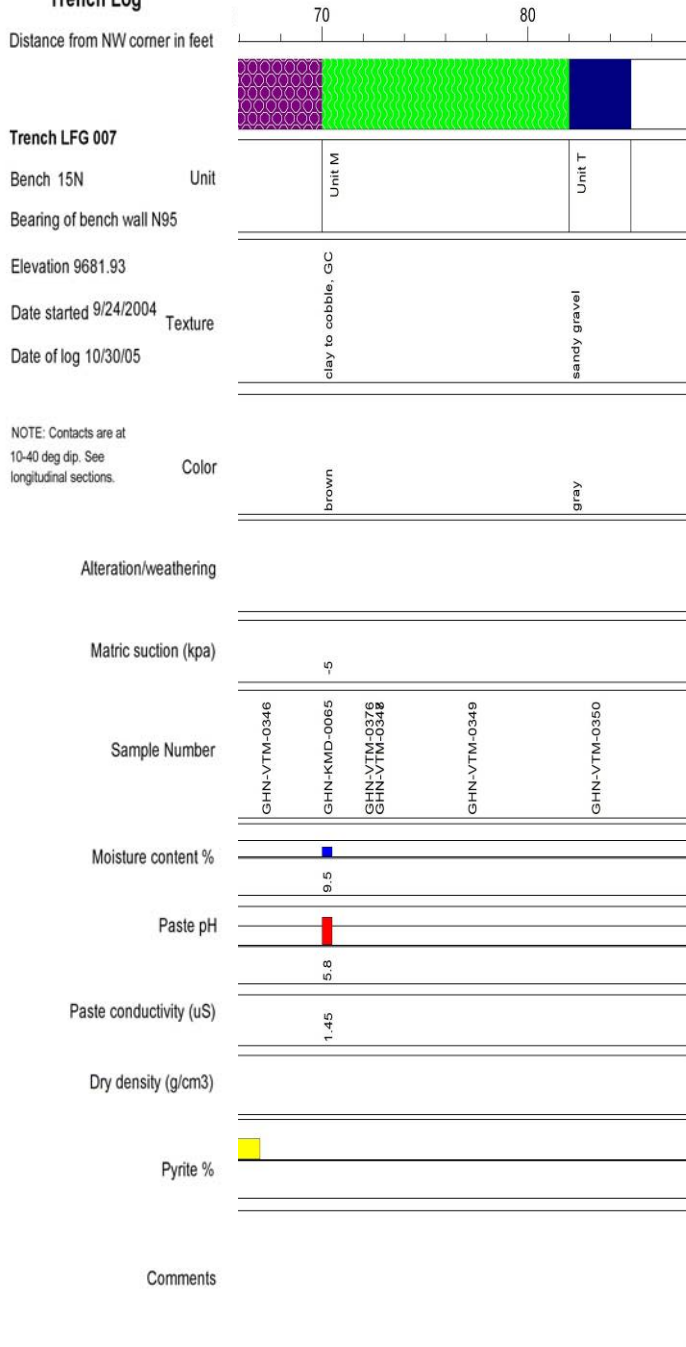
Trench LFG-007 Bench 15N, 1 of 3

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-007 Bench 15N, 2 of 3

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



3 of 3

Trench LFG-007 Bench 15N, 3 of 3

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet	0	10	20
Trench LFG 008			
Bench 17N			
Bearing of bench wall N95			
Elevation 9639.18			
Date started 10/1/2004	clay to large cobbles, GC		
Date of log 10/30/05			
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	light yellow		
Color			
Alteration/weathering	oxidized		
Matric suction (kpa)			
Sample Number			
Moisture content %			
Paste pH			
Paste conductivity (uS)			
Dry density (g/cm3)			
Pyrite %			
Comments			

Trench LFG-008 Bench 17N, 1 of 3

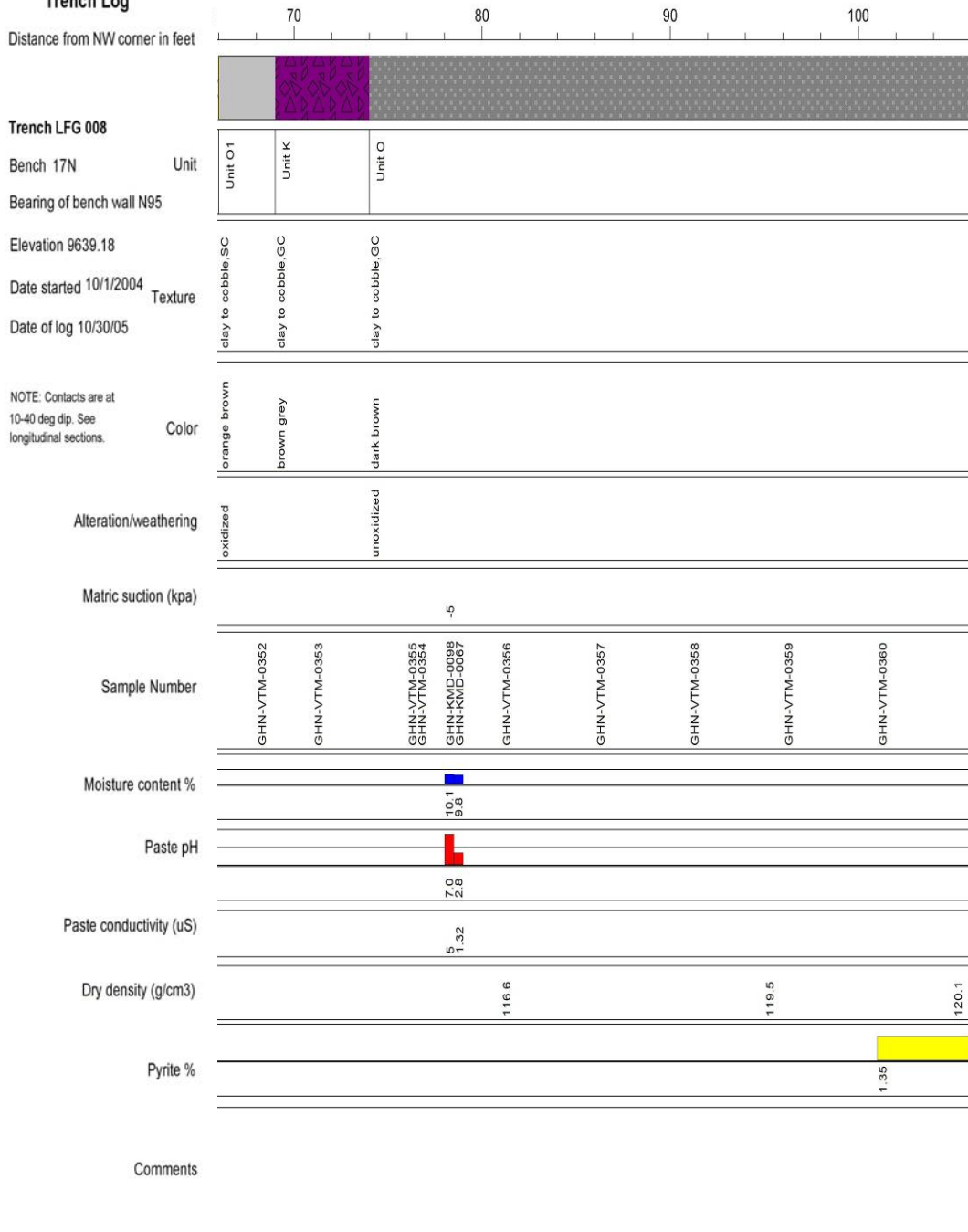
NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet		30	40	50	60
Trench LFG 008					
Bench 17N	Unit	Unit I		Unit J	Unit N1 Unit N
Bearing of bench wall N95					
Elevation 9639.18					
Date started 10/1/2004	Texture	orange yellow with gray		orange yellow with gray	clay to large cobble, GC clay to cobble, SC
Date of log 10/30/05					
NOTE: Contacts are at 10-40 deg dip. See longitudinal sections.	Color	orange yellow with gray		brown	gray brown orange brown
Alteration/weathering		oxidized			oxidized layers
Matric suction (kpa)					
Sample Number					
Moisture content %					
Paste pH					
Paste conductivity (uS)					
Dry density (g/cm3)					
Pyrite %					
Comments					

GHN-VTM-0351

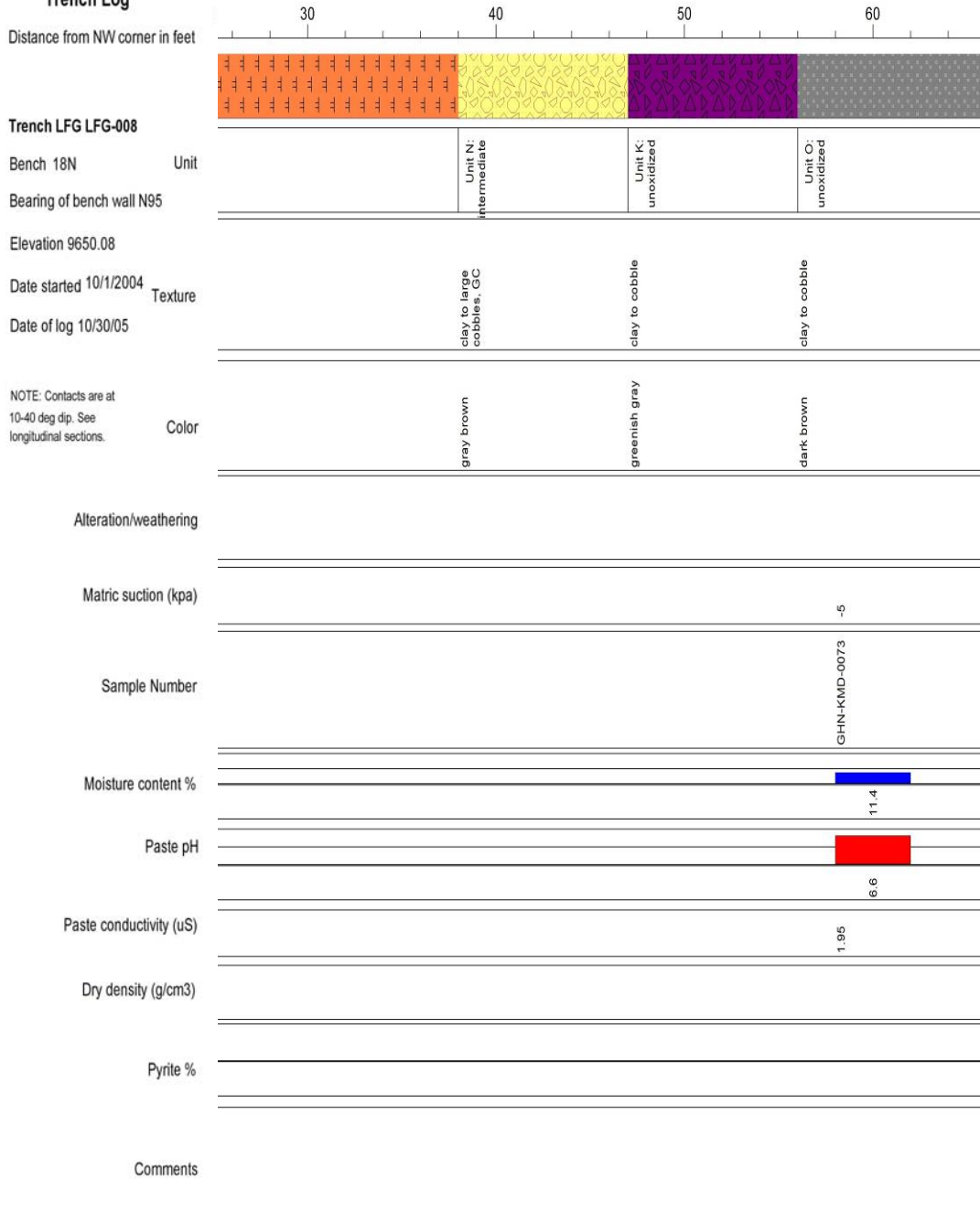
111.6

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-008 Bench 17N, 3 of 3

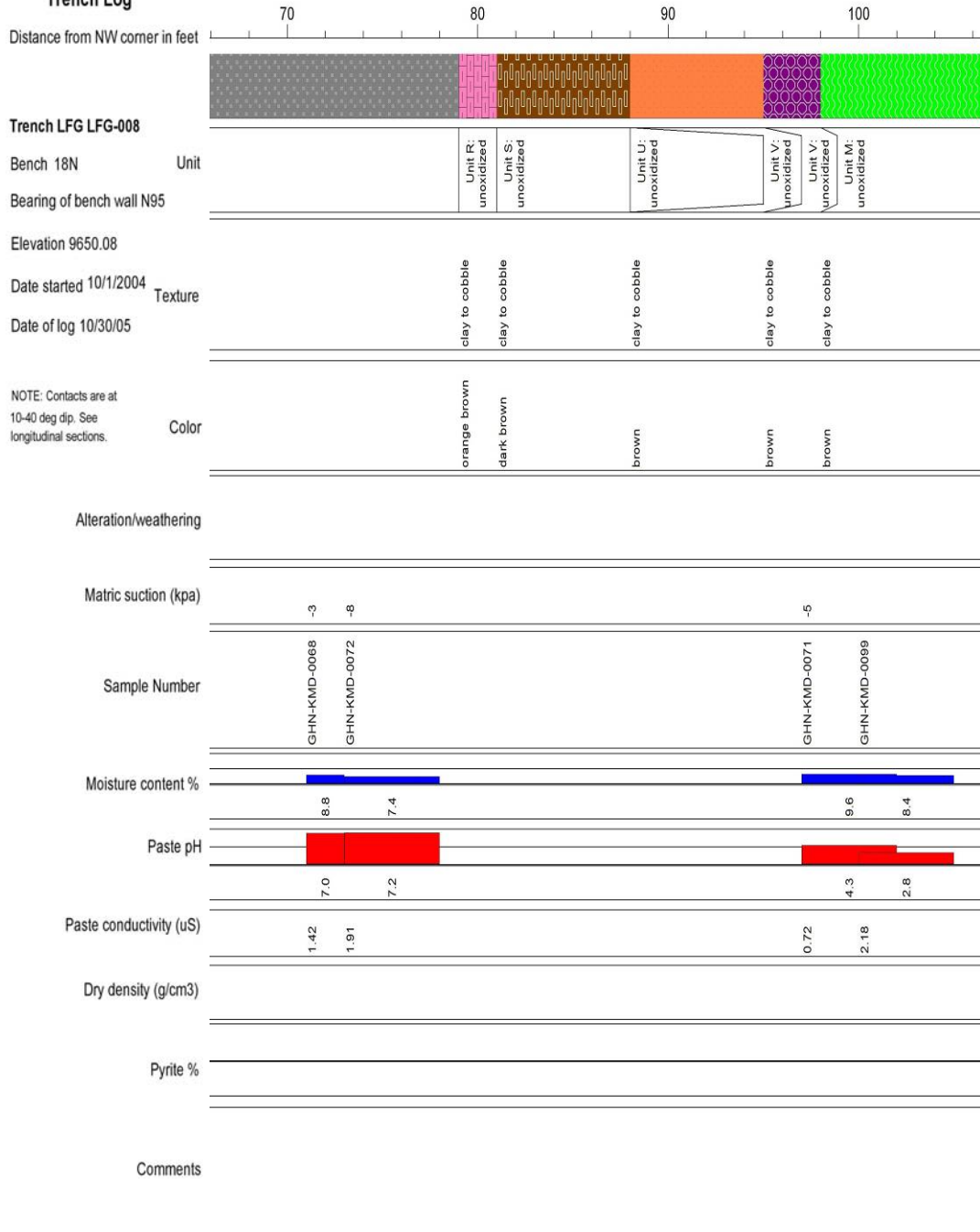
NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-008 Bench 18N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log



Trench LFG-008 Bench 18N, 3 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet 110



Trench LFG LFG-008

Bench 18N Unit

Bearing of bench wall N95

Elevation 9650.08

Date started 10/1/2004 Texture

Date of log 10/30/05

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

4 of 4

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

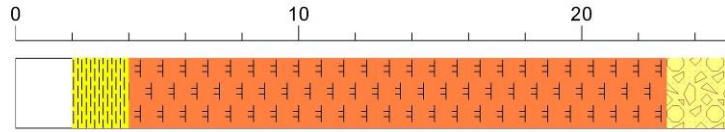
Comments

Trench LFG-008 Bench 18N, 4 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-008

Bench 19N Unit

Bearing of bench wall N100

Elevation 9645.78

Date started 10/1/04 Texture

Date of log 10/30/05

	Unit I		Unit N
--	--------	--	--------

	clay to large cobbles, GC	clay to large cobbles, GC	clay to large cobbles, GC
--	---------------------------	---------------------------	---------------------------

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

	light yellow	orange yellow with gray	brown
--	--------------	-------------------------	-------

Alteration/weathering

	oxidized	oxidized	
--	----------	----------	--

Matric suction (kpa)

--	--	--	--

Sample Number

--	--	--	--

Moisture content %

--	--	--	--

Paste pH

--	--	--	--

Paste conductivity (uS)

--	--	--	--

Dry density (g/cm3)

--	--	--	--

Pyrite %

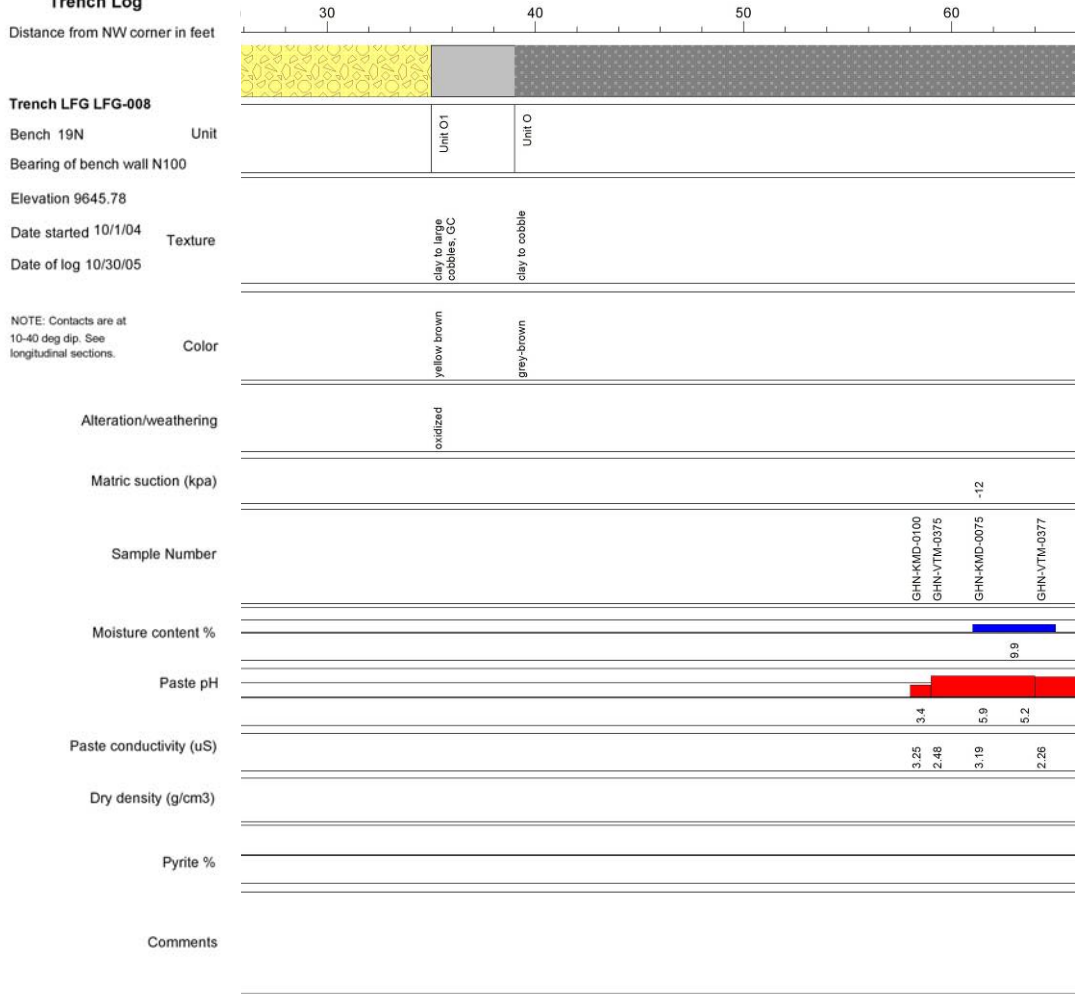
--	--	--	--

Comments

--	--	--	--

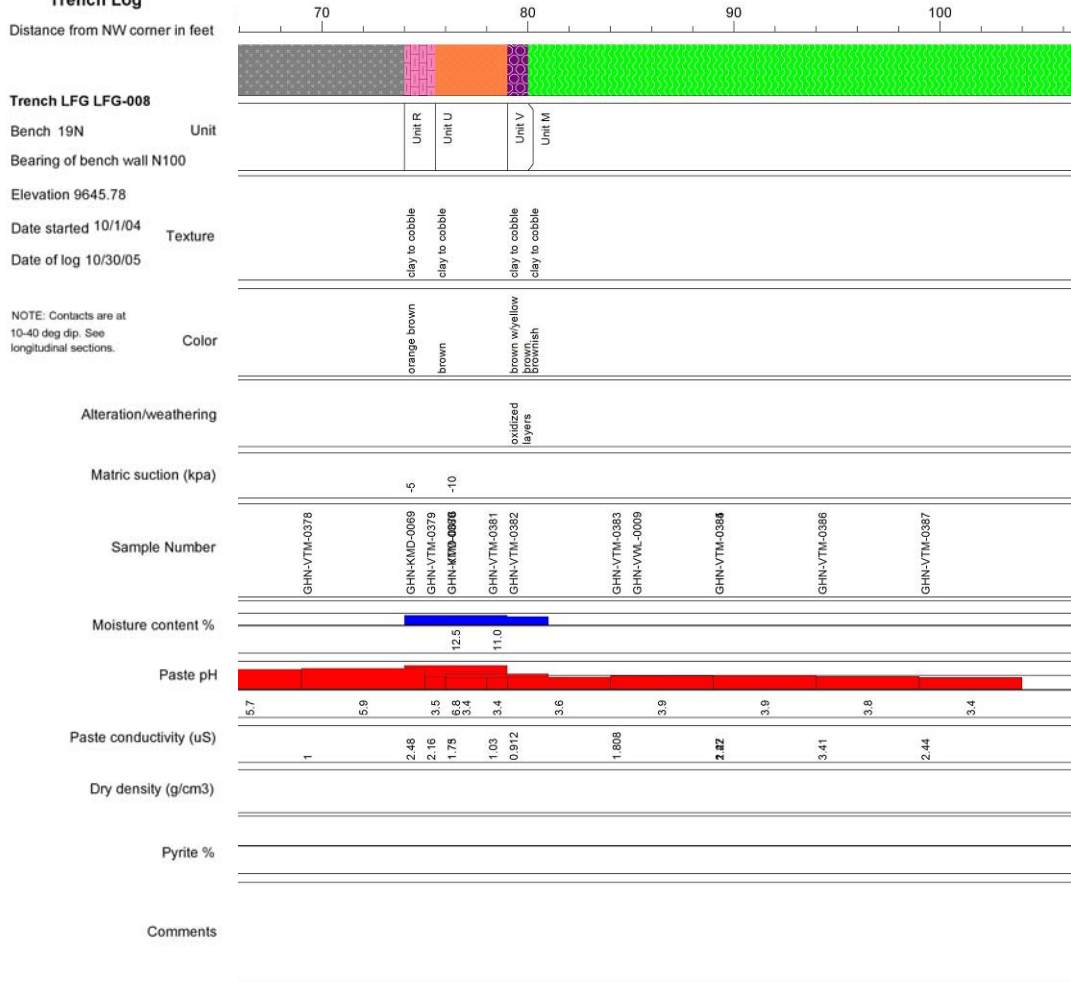
Trench LFG-008 Bench 19N, 1 of 4

**NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log**



Trench LFG-008 Bench 19N, 2 of 4

NEW MEXICO TECH
WEATHERING STUDY
Goathill North Rock Pile
Trench Log



Trench LFG-008 Bench 19N, 3 of 4

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log

Distance from NW corner in feet

110



Trench LFG LFG-008

Bench 19N Unit

Bearing of bench wall N100

Elevation 9645.78

Date started 10/1/04 Texture

Date of log 10/30/05

NOTE: Contacts are at
 10-40 deg dip. See
 longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

4 of 4

Moisture content %

Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments

Trench LFG-008 Bench 19N, 4 of 4

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-008

Bench 19N Unit

Bearing of bench wall 95

Elevation 9645.8

Date started 10/1/2004 Texture

Date of log 4/23/06

NOTE: Contacts are at
10-40 deg dip. See
longitudinal sections. Color

Unit C	Unit I	Unit J	Unit N1	Unit N
--------	--------	--------	---------	--------

--	--	--	--	--

orange brown	orange brown	orange brown	orange brown	orange brown
--------------	--------------	--------------	--------------	--------------

Alteration/weathering

--	--	--	--	--

Matric suction (kpa)

--	--	--	--	--

Sample Number

--	--	--	--	--

Moisture content %

--	--	--	--	--

Paste pH

--	--	--	--	--

Paste conductivity (uS)

--	--	--	--	--

Dry density (g/cm3)

--	--	--	--	--

Pyrite %

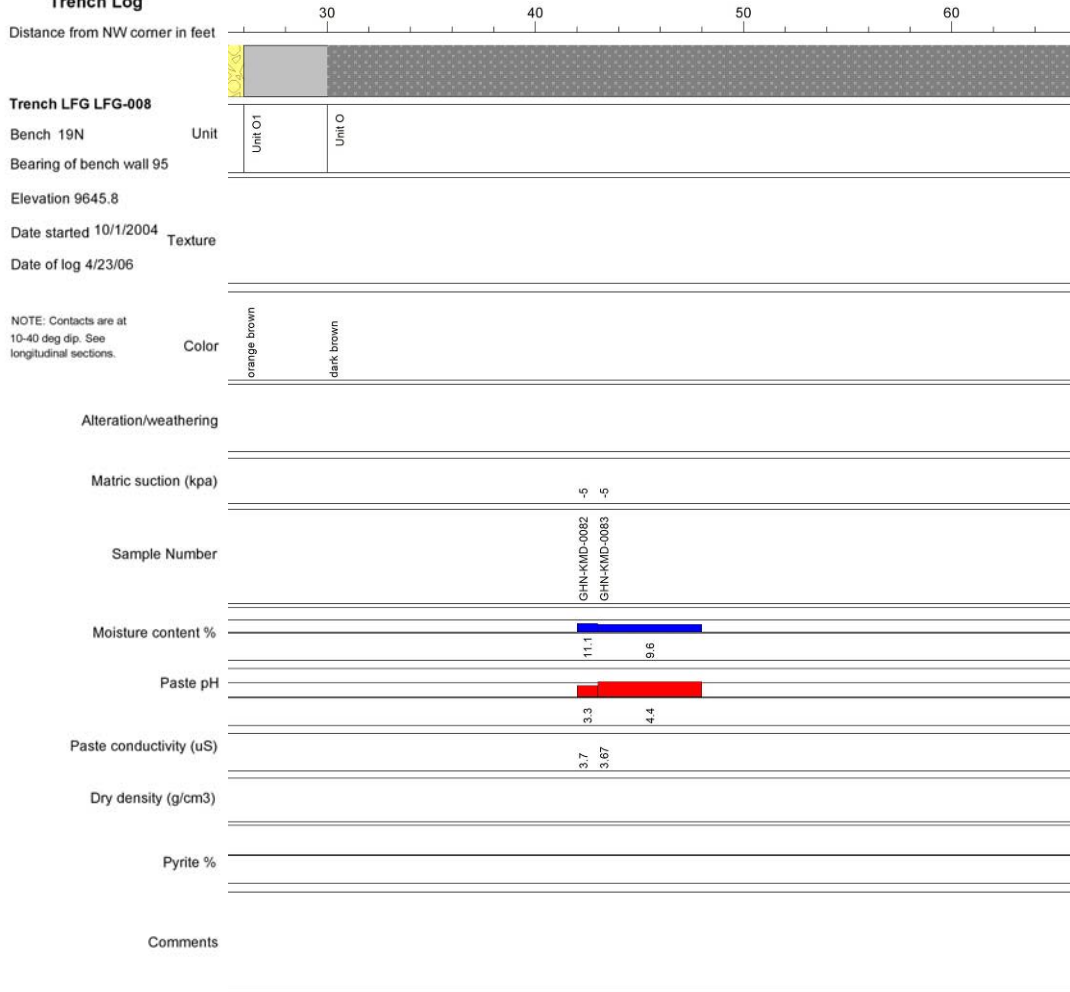
--	--	--	--	--

Comments

--	--	--	--	--

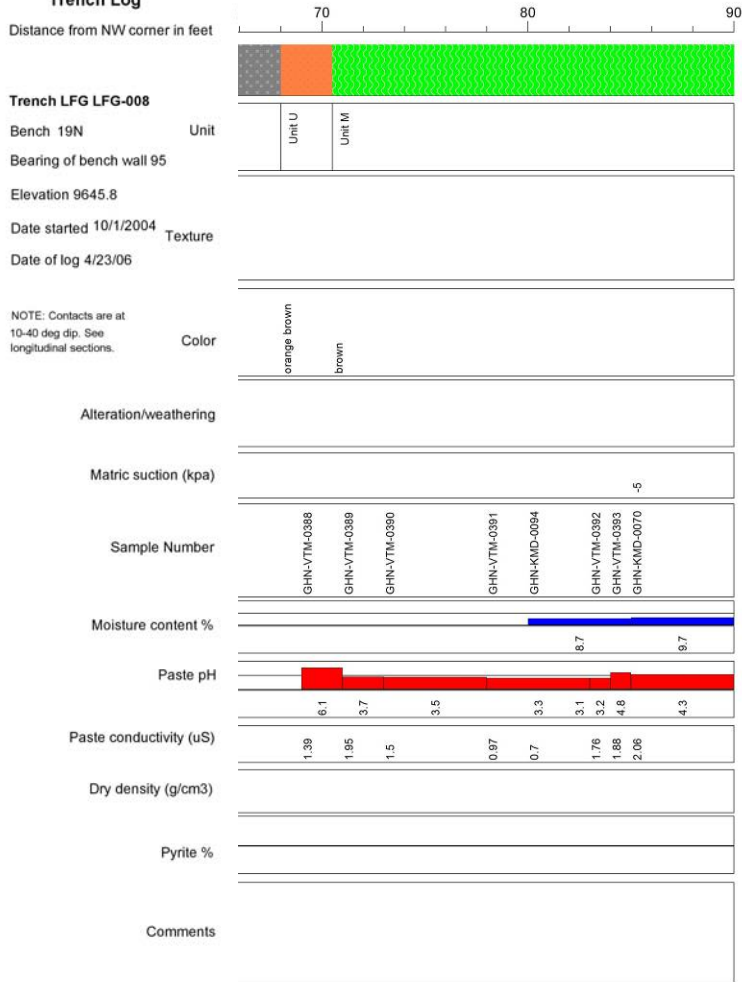
Trench LFG-008 Bench 20N, 1 of 3

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



Trench LFG-008 Bench 20N, 2 of 3

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



3 of 3

Trench LFG-008 Bench 20N, 3 of 3

NEW MEXICO TECH
WEATHERING STUDY

Goathill North Rock Pile
Trench Log

Distance from NW corner in feet



Trench LFG LFG-009

Bench 22N Unit

Bearing of bench wall 90

Elevation 9604.6

Date started 10/8/2004 Texture

Date of log 4/23/06

NOTE: Contacts are at 10-40 deg dip. See longitudinal sections. Color

Alteration/weathering

Matric suction (kpa)

Sample Number

Moisture content %

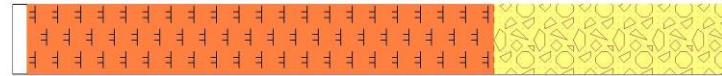
Paste pH

Paste conductivity (uS)

Dry density (g/cm3)

Pyrite %

Comments



Unit C-I Unit J	Unit N
--------------------	--------

sandy gravel clayey gravel	sandy gravel
-------------------------------	--------------

gray to white orange to gray with orange spots	brown to light brown to dark brown
---	--

Alteration/weathering	
-----------------------	--

Matric suction (kpa)	
----------------------	--

Sample Number	GHN-VTM-0404	GHN-JRM-0021	GHN-JRM-0029	GHN-VTM-0405	GHN-VTM-0406	GHN-VTM-0407	GHN-VTM-0428	GHN-JRM-0001	GHN-JRM-0002	GHN-VTM-0408
---------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------	--------------

Moisture content %		12.3						12.0	9.8	
--------------------	--	------	--	--	--	--	--	------	-----	--

Paste pH	3.1	2.8	5.2	2.9	3.3	3.0	2.9	2.2		
----------	-----	-----	-----	-----	-----	-----	-----	-----	--	--

Paste conductivity (uS)	1.494	4.3	3.22	1.518	1.708	2.45	2.28	6.31	5.46	1.861
-------------------------	-------	-----	------	-------	-------	------	------	------	------	-------

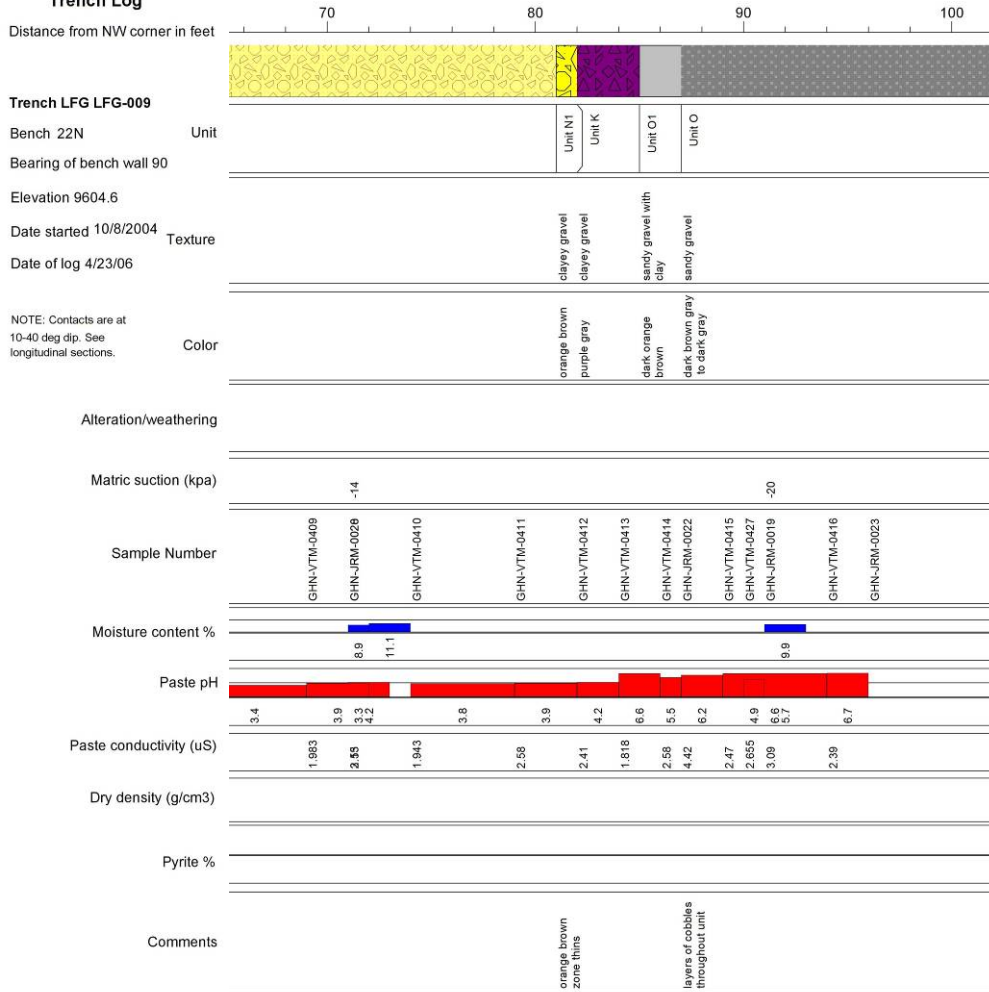
Dry density (g/cm3)										
---------------------	--	--	--	--	--	--	--	--	--	--

Pyrite %										
----------	--	--	--	--	--	--	--	--	--	--

Comments	thin, fine-grained crust					base is less cobbles and more sand-silt than throughout the unit. 3 to 6 inch thick coarse layers				
----------	-----------------------------	--	--	--	--	---	--	--	--	--

Trench LFG-008 Bench 22N, 1 of 2

NEW MEXICO TECH
 WEATHERING STUDY
 Goathill North Rock Pile
 Trench Log



2 of 2

Trench LFG-008 Bench 22N, 2 of 2