APPENDIX B1.3

ASBESTOS ANALYTICAL TEST RESULTS

ASSAIGAI ANALYTICAL LABORATORIES, INC.

ASSAIGAI ANALYTICAL LABORATORIES, INC.
P.O. Box 90430 • Albuquerque, New Mexico 87199 • (505) 345-8964 • FAX (505) 345-7259

BULK ASBESTOS ANALYSIS REPORT

To: MWH AMERICAS INC

Fax:

Attn: Toby Leeson

Date Received: 12/4/2013
Date Completed: 12/9/2013
Workorder: BB33139
No. of Analyses: 04
No. of Samples: 02

Methods: EPA Interim Method of the Determination of Asbestos in Bulk Insulation Samples (EPA-600/M4-82-020) And as cited in 40 CFR Part 763, Subp. F, Appendix A, Section 1, visual estimate comparing the quantity of non-asbestos material to asbestos fibers. The EPA Preferred Method is the Determination of Asbestos in Bulk Building Materials (EPA-600/R-93/116 July 1993). Detection Limit: 1% of the portion of the sample examined. Analyses completed at 4301 Masthead NE, Albuquerque, NM.

Sampling Site **NECR - PDS**

Sample ID	Description	Asbestos Type	Percent Asbestos	Other Fibers	Percent Content	Matrix
P1-PACM-Pit1-001	White Floor Tile	Chrysotile	2	None	----	Clays, Calcite, Binder
	Black Mastic	Chrysotile	3	None	----	Tar, Clays
P1-PACM-Pit1-002	White Floor Tile	Chrysotile	2	None	----	Clays, Calcite, Binder
	Black Mastic	Chrysotile	3	None	----	

Pursuant to the Asbestos NESHAP Clarification Regarding Analysis of Multi-layered Systems (Federal Register/Vol. 50, No. 3, Wednesday, January 5, 1994), each layer, in a sample containing one or more distinct layers, has been individually analyzed and reported. These results relate only to the above samples as submitted unless otherwise noted. Reproduction of this report in less than full requires the written consent of AAL.

We Appreciate the opportunity to perform analytical work for you. If you have any questions, please call.

Analyst: Mario Roybal

Respectfully submitted, William P. Biava, Asbestos Laboratory Manager

NVLAP LAB CODE 101457-0

APPENDIX B1.4

ANALYTICAL TEST RESULTS VALIDATION REPORT

NECR MINE AND CHURCH ROCK MILL SITE

MWH

APPENDIX B1.4

DATA VERIFICATION
SOIL 2013 SOIL SAMPLING

Introduction. Soil samples were collected at the Northeast Church Rock Mine Site October 29 through December 12, 2013. The following paragraphs summarize the results of the data verification. Radium-226 and Uranium analyses had 10% Level IV verification performed. All other analytes had Level II or III verification.

Analytical Procedures and Detection Limits. All samples were analyzed in accordance with the methodology, detection limits, and quality control (QC) criteria specified in the project *Quality Assurance Project Plan,* United Nuclear Corporation, Northeast Church Rock Site (QAPP; MWH, 2013). Energy Laboratories of Casper, Wyoming provided analytical services.

A summary of qualified data is presented in Table B1.4-1. Table B1.4-2 summarizes data with QC outside acceptance criteria that did not result in data qualification.

Holding times were evaluated. All holding times met method criteria with the exceptions listed in Table B1.4-1 with "HT" as the QC type.

Initial calibration, initial calibration verification (ICV), and continuing calibration criteria were evaluated for uranium. All calibration criteria were met. Calibration data were reproducible for uranium. There is no calibration for EPA method 901.1 for radium-226.

All metals ICV, interference check samples and serial dilutions met acceptance criteria.

Laboratory control samples (LCS) and laboratory fortified blank samples (LFB) (where applicable) met acceptance criteria with the exceptions listed in Table B1.4-1 with "LCS" as the QC type.

Method blanks met acceptance criteria with the exceptions listed in Table B1.4-2 with "MB" as the QC type.

Six field duplicate (FD) samples were collected. All FD criteria were met with the exceptions listed in Table B1.4-1 with "FD" as the QC type.

Laboratory selected batch replicates and matrix spike (MS) and or MS/matrix spike duplicate (MSD) analyses met acceptance criteria with the exceptions listed in Table B1.4-2 with "MS" and/or "MSD" as the QC type.

All uranium and radium-226 results were reproducible and matched the laboratory report.

Dilutions were required during metals and uranium analyses due to the high concentrations of analyte(s). The affected sample results are flagged with a "D" to indicate sample dilution.

Conclusions. Based on the results of the data verification, the data are considered precise, accurate, and representative, as qualified. Analytical completeness for this sampling round is 100 percent.

TABLE B1.4-1
SUMMARY OF QUALIFIED DATA
NORTHEAST CHURCH SITE
(Page 1 of 2)

Location Identification	Field Identification	Sample Date	Analysis	Analyte	Sample Result	Sample Units	QC Type	QC Result	Qualifier	Bias	Comment
P1-CC04-002	P1-CC04-002	11-Nov-13	SW6020	Uranium	2110	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC04-003	P1-CC04-003	11-Nov-13	SW6020	Uranium	176	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC05-003	P1-CC05-003	11-Nov-13	SW6020	Uranium	174	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC07-002	P1-CC07-002	12-Nov-13	SW6020	Uranium	209	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC07-003	P1-CC07-003	12-Nov-13	SW6020	Uranium	183	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC08-001	P1-CC08-001	12-Nov-13	SW6020	Uranium	434	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC08-002	P1-CC08-002	12-Nov-13	SW6020	Uranium	70.7	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC10-003	P1-CC10-003	12-Nov-13	SW6020	Uranium	1220	mg/kg	FD	144%	J	None	Datum is estimated; bias unknown. Field dupilcate RPD outside acceptance criteria.
P1-CC11-004	P1-CC11-004	12-Nov-13	SW6020	Uranium	3190	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC12-004	P1-CC12-004	12-Nov-13	SW6020	Uranium	393	mg/kg	FD	138%	J	None	Datum is estimated; bias unknown. Field dupilcate RPD outside acceptance criteria.
P1-CC13-002	P1-CC13-002	12-Nov-13	SW6020	Uranium	1330	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
SP-CC04-004	SP-CC04-004	1-Nov-13	SW6020	Uranium	108	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
SP-CC08-001	SP-CC08-001	4-Nov-13	SW6020	Uranium	231	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
SP-CC08-002	SP-CC08-002	4-Nov-13	SW6020	Uranium	184	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
SP-CC10-003 Dup	SP-CC10-203	4-Nov-13	SW6020	Uranium	104	mg/kg	LCS	126%	J+	High	Datum is estimated; potential high bias.
SP-CC11-002	SP-CC11-002	4-Nov-13	SW6020	Uranium	206	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
TPH-01	TPH-01	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	<20	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
TPH-02	TPH-02	13-Nov-13	SW846 Ch 7	Sulfide, Reactive	<20	mg/kg	HT	9 days	J-	Low	Potential false negative. Holding time exceeded.

TABLE B1.4-1
SUMMARY OF QUALIFIED DATA
NORTHEAST CHURCH SITE
(Page 2 of 2)

Location Identification	Field Identification	Sample Date	Analysis	Analyte	Sample Result	Sample Units	QC Type	QC Result	Qualifier	Bias	Comment
P1-CC10-003	TPH-P1-CC10-003	12-Nov-13	SW6020	Uranium	197	mg/kg	LCS	126%	J+	High	Datum is estimated; potential high bias.
P1-CC10-003	TPH-P1-CC10-003	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	<20	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
P1-CC11-004	TPH-P1-CC11-004	12-Nov-13	SW6020	Uranium	2940	mg/kg	LCS	126%	J+	High	Datum is estimated; potential high bias.
P1-CC11-004	TPH-P1-CC11-004	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	<20	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
TPH-P1-CC11-005	TPH-P1-CC11-005	12-Nov-13	SW6020	Uranium	1310	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
TPH-P1-CC11-005	TPH-P1-CC11-005	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	22	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
P1-CC12-004	TPH-P1-CC12-004	12-Nov-13	SW6020	Uranium	72.7	mg/kg	LCS	121%	J+	High	Datum is estimated; potential high bias.
P1-CC12-004	TPH-P1-CC12-004	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	26	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
TPH-P1-CC13-003	TPH-P1-CC13-003	12-Nov-13	SW6020	Uranium	1090	mg/kg	LCS	126%	J+	High	Datum is estimated; potential high bias.
TPH-P1-CC13-003	TPH-P1-CC13-003	12-Nov-13	SW846 Ch 7	Sulfide, Reactive	30	mg/kg	HT	10 days	J-	Low	Potential false negative. Holding time exceeded.
TOPSOIL STOCKPILE	Topsoil Stockpile	21-Nov-13	E901.1	Radium-226	1	pci/g	FD	35%	J	None	Datum is estimated; bias unknown.

mg/kg	milligrams per kilogram
pCi/g	picocurries per gram
D	Sample dilution required for analysis; reported values reflect the dilution.
FD	field duplicate
HT	holding time
LCS	laboratory control standard
QC	quality control

TABLE B1.4-2
SUMMARY OF NON-CONFORMING DATA
NORTHEAST CHURCH SITE
(Page 1 of 1)

Location Identification	Field Identification	Sample Date	Analysis	Analyte	Sample Result	Sample Units	QC Type	QC Result	Bias	Comment
P1-CC12-004	P1-CC12-004	12-Nov-13	SW6020	Uranium	393	mg/kg	MS/MSD	NC	None	Sample concentration >4X spike concentration. Recovery not evaluated.
SP-CC11-002	SP-CC11-002	4-Nov-13	SW6020	Uranium	206	mg/kg	MS/MSD	NC	None	Sample concentration >4X spike concentration. Recovery not evaluated.
P1-CC12-004	TPH-P1-CC12-004	12-Nov-13	SW6010B	Barium	2	mg/l	MB/MS	0.2 mg/l/NC	None	Analyte detected in an associated blank. Sample concentration > 50X blank concentration. Sample concentration >4X spike concentration; MS not evaluated.

mg/kg	milligrams per kilogram
mg/l	milligrams per liter
NC	not calculated
MB	method blank
MS	matrix spike
MSD	matrix spike duplicate
QC	quality control

APPENDIX B2

FIELD LOGS AND PHOTOGRAPHS

APPENDIX B2.1

DRILLING LOGS

APPENDIX B2.1A

DRILLING LOGS

GEO

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **N2D-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7130.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 11.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	15"	4				(0' - 2.5') SOIL - Dark brown, moist, fine- to coarse-grained soil.						115.6	13.4	
1						(1' - 1.5') Light to dark brown, very loose, slightly moist, fine- to very fine-grained, low plasticity silty sand.								
2	21"		CA		4	(2.5' - 5') SILTY SAND - Medium brown, some tan, very loose, slightly moist, fine- to very fine-grained, silty sand, low plasticity.								
3				1B	4									
				1A	4				8.6	91.2				
4														
5	28"		CA		3	(5' - 10') SILTY SAND - Light brown, loose, dry, fine- to very fine-grained, silty sand, low plasticity.								
				2B	4									
6				2A	6				4.7	87.2				
7														
8														
9														
10			CA		4	E.O.B. = 10', backfilled with cuttings and ground								
				3B	6	Moved 2' over to obtain bulk sample due to lack of cuttings.								
11				3A	9				4.0	91.8				
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START:	FINISH:
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7096.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 20.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	48"	3				(0' - 4.5') SILTY SAND - Light-medium brown, very loose, fine- to very fine-grained silty sand, low plasticity.					2.68	120.7	11.9	
1														
2														
3														
4						Same as above, 3"								
5	32"		CA 17"		10	(4.5' - 14.5') SAND - Dark brown, loose, slightly moist, fine- to medium-grained sand, lenses of medium-grained red sand, white clasts (1" - 2.5"), low plasticity.								
6				1A	10									
7					10									
8														
9														
10	33"					Clasts size is 0.5" to 1"								
11			CA 15"	2B	4									
				2A	9									
12					50/5"									
13														

LEGEND:
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- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC01**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	33"					(4.5' - 14.5') SAND - Dark brown, loose, slightly moist, fine- to medium-grained sand, lenses of medium-grained red sand, white clasts (1" - 2.5"), low plasticity.								
15	60"		CA 5"		50/ 5"	(14.5' - 15') SILTY SAND - Light tan, very dense, hard, dry, fine-grained silty sand, low plasticity.								
16						(15' - 20') SAND - Light gray to white with dark brown areas, very dense, fine- to very fine-grained sand, layered, possible placed NECR-1 material.									
17														
18														
19														
20						E.O.B. = 20', backfilled with two bags of bentonite, backfilled with cuttings to surface.									
21														
22														
23														
24														
25														
26														
27														

LEGEND:
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- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

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PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC17**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7096.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 21.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	54"	5				(0' - 1') SOIL - Dark brown, loose, moist soil.						120.3	11.3	
1						(1' - 4') SILTY SAND - Light tan, loose, dry, very fine silty sand.								
2														
3														
4						(4' - 6.5') SILTY SAND - Gray and brown, loose, dry, very fine silty sand, no plasticity.								
5	44"		CA 20"		5									
6				1B	5				4.9	92.3				
				1A	5									
7						(6.5' - 10') SAND - Gray, loose, dry, medium-grained sand, probably mine waste.								
8														
9														
10	45"	6	CA 18"		4	(10' - 15') SAND - Same as above, very stiff clay lens at 13', trace green for the last 6", no plasticity.						125.1	10.0	
				2B	3				6.2	96.5				
11				2A	4									
12														
13														

LEGEND:
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- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC17**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	45"	6				(10' - 15') SAND - Same as above, very stiff clay lens at 13', trace green for the last 6", no plasticity.								
15	32"		CA 18"		3	(15' - 21.5') SAND - Same as above, red streaks dominate most material.								
16				3B	3				2.0	106.7				
17				3A	3									
18														
19														
20					2									
21				4B	4				19.1	95.8				
22				4A	10	E.O.B. = 21.5', backfilled with cuttings								
23														
24														
25														
26														
27														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START:	FINISH:
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7191.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 7.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	60"	NA	NA	NA		(0' - 8") SOIL - Light brown soil.								
1						(8" - 5') SAND - Light gray, dry, coarse sand, unconsolidated.								
2														
3														
4														
5					31	(5' - 7.5') SANDSTONE - Light brown, very dense, dry, fine to medium grained silty sand to highly weathered sandstone			7.4	99.1				
6					50/3"									
7						Gypsum at bottom 2"								
8						E.O.B. = 7.5', backfilled with cuttings									
9														
10														
11														
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC05**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/29/2013	FINISH: 10/29/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7183.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	30"	5		1		(0' - 10') SILTY SAND - Light brown, very dense, slightly moist, fine grained silty sand						118.8	11.9	(0 - 2.5') >2.0 pCi/g
1														
2						Indurated								
3	30"		CA 7"	2	50/ 6"				8.1	93.7				
4														
5	60"		CA 6"	3	45/ 6"	Slightly more clay			10	D				(5' - 8') <2.0 pCi/g
6				4										
7														
8														
9						Trace gypsum								
10						E.O.B. = 10', backfilled with cuttings									
11														
12						Backfilled with chips at bottom, cuttings above									
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
- >2.0 = rad readings above 2.0 pCi/g.
- <2.0 = rad readings below 2.0 pCi/g. (aka clean material).

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC06**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7177.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 4.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	27"	2				(0 - 4.5') SILTY SAND - Light reddish brown, dry, medium dense, fine grained silty sand, gray spots, minor gravel 1" - 1.5"								
3	NR		CA 16"	1B	8 9	Slightly more gray material			5.0	103.4				(0 - 2.5') <2.0 pCi/g
4				1A	24				4.7	101.1				
5						E.O.B. = 4.5'. Auger refusal due to steel plate or pipe, re-drill 10' down as NECR2-CC07, backfilled with NECR2-CC06 cuttings								

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
- <2.0 = rad readings below 2.0 pCi/G (aka clean material).

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC07**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 0.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.5	

DEPTH (FT)	CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR MAX. DD (LB/FT)	PROCTOR OPT. W.C. (%)	ADDITIONAL COMMENTS
	FIELD SAMPLE RECOVERY DATA								LABORATORY TEST DATA					
0	50"	2				(0' - 6.5') SILTY SAND - Light reddish brown, dry, fine grained silty sand, gray lenses, 1" gravel					2.71	117.8	11.6	
1														
2														
3														
4						Indurated								
5	31"		CA		8									(5' - 9') >2.0 pCi/g
				1B	17				4.5	101.3				
6				1A	27				2.7	101.0				
7						(6.5' - 10') WEATHERED SANDSTONE - Light brown, medium dense, slightly moist, fine silty sand with gravel lenses.								
8														
9														
10		3	CA		50/6"				4.1	97.1				
11						E.O.B. = 10.5'. Backfilled with cuttings.								
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
- No gamma samples due to close proximity to CC06 (clean).
- >2.0 = rad readings above 2.0 pCi/g

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7143.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 11.5	

DEPTH (FT)	CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR MAX. DD (LB/FT)	PROCTOR OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"	NA				(0' - 1') SAND - Tan, soft, dry, medium to coarse sand.								
1						(1' - 2') CLAYEY SILT - Medium brown, slightly stiff, slightly moist clayey silt, low plasticity.								
2						(2' - 5') Gray, medium dense, dry, fine to medium sand.								
3			CA 18"	1B	11 13				8.1	110.6				
4				1A	13									
5			CA 13"		12	(5' - 10') SILTY SAND - Dark brown, medium dense, moist, very fine silty sand, low plasticity.								
6				2A	11 7				20.0	97.5				
7														
8														
9														
10			CA 18"		1	E.O.B. = 10', backfilled with cuttings								
11				3B 3A	1 1				15.0	86.6				
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7142.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 11.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"					(0' - 1.5') SILTY SAND - Red/brown, very stiff, dry, very fine silty sand.								
1														
2						(1.5' - 5') SAND - Gray, medium dense, dry, fine to medium sand, no plasticity.								
3	21"	1	CA 15"	2B	18 15									<100 pCi/g
4				2A	11									
5		4	CA	3A	4 4	(5' - 10') SAND - Green to gray, loose, slightly moist, fine to medium sand, no plasticity, trace red for the last 1'.								≥100 pCi/g
6					5									
7														
8		5												
9														
10			CA		11									
11				6B 6A	10 13									
12						E.O.B. = 11.5', backfilled with cuttings									
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7141.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	52"	1	N/A	N/A		(0' - 1.5') SILTY SAND - Brown, soft, dry, very fine silty sand.					2.66	125.2	9.8	
1						(1.5' - 14') SAND - Gray, loose to medium dense, dry, fine- to medium-grained sand, orange/green stains.								
2														
3														
4														
5	32"													
6														
7														
8														
9														
10	45"													
11														
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC04**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	45"	1	N/A	N/A		(1.5' - 14') SAND - Gray, loose to medium dense, dry, fine- to medium-grained sand, orange/green stains.								
						(14' - 15') SILTY SAND - Brown, medium hard, slightly moist, very fine silty sand, no plasticity, indurated.								
15						E.O.B. = 15', backfilled with cuttings								
16														
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC09**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 24.4	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	Bulk				(0' - 1') SILTY SAND - Light brown, loose, moist silty sand, clayey, no plasticity.								
1						(1' - 5') SILTY CLAY - Light brown to gray, soft, moist silty sand, high plasticity.								
2														
3	32"		CA 16"	1B	0									
4				1A	1									
5	17"		CA 18"	2B	2	(5' - 8') CLAY - Gray, very soft, moist clay, high plasticity.								
6				2A	0									
7					0									
8	31"				0	(8' - 10') CLAY - Dark gray, soft, moist clay, moderate plasticity.								
9														
10	38"		CA 16"	3B	2	(10' - 15') SILTY CLAY - Brown, soft, moist silty clay, high plasticity.								
11				3A	3									
12					3									
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
- NR = no recovery

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC09**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	38"	Bulk				(10' - 15') SILTY CLAY - Brown, soft, moist silty clay, high plasticity.								
15	31"	Bulk	CA 14"	4B	2	(15' - 17.5') SILTY CLAY - Same as above, gray to brown.								
16				4A	3 4									
17														
18	27"					(17.5' - 21.5') SILTY CLAY - Same as above with gravel.								
19						(19') Very wet								
20	35"		NR		1									
21					2 4									
22						(21.5' - 24.4') SILT - Brown/gray, medium hard, dry silt, no plasticity.								
23	22"													
24														
25						E.O.B. = 24.4', backfilled with cuttings								
26														
27														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
- NR = no recovery

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P2-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7100.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 3.2	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	NA	1	NA	NA		(0' - 38") - SILTY CLAY - Dark brown, moist, silty clay, high plasticity.					2.66	102.0	20.6	
3						E.O.B. = 38", auger refusal, backfilled with cuttings								

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
Hand augered due to access.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SF3-001**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7116.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 11.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	23"	4				(0' - 2.5') SAND - Light brown-tan, slightly moist, fine- to slightly coarse grained, sand, low plasticity.					2.68	121.7	11.1	
1														
2														
3	28"		CA 18"		5	(2.5' - 5') SAND - Dark brown, loose, slightly moist, medium-grained sand, with 1/2" clasts, minor clay at ~3', low plasticity.								
				1B	9									
4				1A	10				17.0	99.3				
5	35"		CA 18"		4	(5' - 11.5') SILTY SAND - Dark brown, loose, slightly moist, fine- to very fine-grained silty sand, trace clay, red oxides (1%), low plasticity.								
				2B	8									
6				2A	8				10.5	96.4				
7														
8														
9														
10			CA 17"		4									
				3B	5									
11				3A	6				8.2	83.5				
12						E.O.B. = 11.5', backfilled with cuttings									
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC13**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7097.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 16.2	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	30"	Bulk				(0' - 15') SAND - greenish gray, loose to medium dense, dry to slightly moist, fine to medium sand, no plasticity.					2.62	120.6	11.5	
1														
2	20"													
3														
4														
5	28"		CA 16"		2									
				1B	3				10.2	101.4				
6				1A	3									
						2" clay lens with red, orange, and black oxide stains								
7														
	24"					Alternating coarse and fine sand								
8														
9														
10	28"		CA 15"		3									
					6									
11				2A	11				3.5	100.8				
12														
13														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC13**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	BULK SAMPLE NO.	GEOTECH. SAMPLE	GEOTECH. SAMPLE NO.	BLOW COUNTS	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	28"	Bulk				(0' - 15') SAND - greenish gray, loose to medium dense, dry to slightly moist, fine to medium sand, no plasticity.								
15			CA 14"	3A	4 3	Last 2" - Brown, slightly hard, dry silty sand, no plasticity.			6.9	97.5				
16					4	E.O.B. = 16.2', backfilled with cuttings								
17														
18														
19														
20														
21														
22														
23														
24														
25														
26														
27														

LEGEND:
- CA = CALIFORNIA SAMPLE
- ST = SHELBY TUBE
- AC = ACRYLIC LINER
- H.S.A. = HOLLOW-STEM AUGER
- C.C. = CONTINUOUS CORE

NOTES:
None.

APPENDIX B2.1B

DRILLING LOGS

ENVIRONMENTAL

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-52A**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/13/2013	FINISH: 11/13/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: KJ	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 19.4	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0				(0' - 9.1') SILTY SAND - Medium to dark brown, moderately moist silty clay with very low clay content.								Logging the cuttings only
7.5				7.5' very hard to drill, debris including wood, rubber pieces, 1 ft. thick felt like "rotten concrete"								
9		1	>2.0	(9.1' - 9.6') CLAYEY SILT - Yellow orange, loose, moist clayey silt, high plasticity.								
9.6	18"			(9.6' - 11.6') SILT - Silt grading to very weathered mudstone								
11.6	12"			(11.6' - 12.6') CLAYEY SILT - Brown, stiff, moist clayey silt, moderate plasticity.								
12.6												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-52A**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	12"	1	>2.0	(14.1' - 17.6') SILTSTONE - Light gray brown, slightly moist siltstone interbedded with mudstone, moderately cemented, very weathered.								
		2	=2.0									
15	27"											
16												
17		3	<2.0									
	27"											
18				(17.6' - 19.1') SILTSTONE - Light gray, dry weathered siltstone, very thin beds.								
19												
20				E.O.B. = 19.4', backfilled with cuttings								
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7096.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	43"	C	>2.0	(0' - 6") SOIL - Dark-medium brown, dry, organics, low plasticity.								
				(6" - 5') SILTY SAND - Light brown-tan, very hard, dry, fine- to coarse-grained sand with silt, clasts (1/4" - 1 1/2"), clasts are white, weathered.								
5				E.O.B. = 5' This sample and four others will be composited, NECR1-CC02:06-BULK								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7097.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	37"	C	>2.0	(0' - 8") SOIL - Medium brown, soft, slightly moist, organics/roots, low plasticity.								
1				(8" - 5') Sand - Light brown-tan, soft to slightly firm, dry, gravel (millimeters - 1"), low plasticity.								
2												
3												
4												
5				E.O.B. = 5', backfilled with cuttings This sample and four others will be composited to test. NECR1-CC02:06-BULK								
6												
7												
8												
9												
10												
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7098.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	60"	C	>2.0	(0' - 1') SOIL - Dark brown, slightly firm, moist, low plasticity.								
1				(1' - 4') SAND - Dark brown, very soft, dry, fine-grained silty sand, gravel (1/2"), organics, no plasticity.								
2												
3												
4				(4' - 5') SAND - Gray material, soft, dry, medium-grained sand.								
5				E.O.B. = 5', backfilled with cuttings This sample and four others will be composited, NECR1-CC02:06-BULK								
6												
7												
8												
9												
10												
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC05**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7098.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	40"	C	>2.0	(0' - 8") SILTY SAND - Dark brown, slightly firm, moist, fine to very fine-grained silty sand, moderate plasticity.								
1				(8" - 5') SILTY SAND WITH GRAVEL - Light brown-tan, very soft, dry, very fine silty sand with gravel (1/4" - 1/2"), low plasticity.								
2												
3												
4												
5				E.O.B. = 5', backfilled with cuttings This sample and four others will be composited to test. NECR1-CC02:06-BULK								
6												
7												
8												
9												
10												
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC06**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7097.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	45"	C	>2.0	(0' - 0.5') SOIL - Dark brown, moist, moderate plasticity soil.								
1				(0.5' - 5') SILTY SAND - Light to dark brown, moderately hard, slightly moist, fine-grained silty sand, gravel (0 - 1 1/2"), trace clay, slight plasticity.								
2												
3												
4												
5				E.O.B. = 5', backfilled with cuttings This sample and four others will be composited to test. NECR1-CC02:06-BULK								
6												
7												
8												
9												
10												
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
First attempt <1' recovery, moved 1' over.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC07**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	46"			(0' - 5') SILTY SAND - Dark to light brown, very firm, moist, trace clay, moderate plasticity.								
1												
2												
3												
4				Dry and softer at 4'								
5	53"	1	>2.0	(5' - 9') SILTY SAND - Medium brown to reddish brown, slightly moist, fine to medium-grained silty sand, lense of coarse gray sand at 6', no plasticity.								
6												
7												
8												
9		2	>2.0	(9' - 10') SILT - Light tan, moderately hard, dry, fine- to very fine-grained silt, no plasticity.								
10	42"			(10' - 11') SILTY SAND - Medium brown to light tan, slightly hard, slightly moist, fine-grained silty/sand, no plasticity.								
11				(11' - 12') WHITE GRAVEL - White gravel layer, 1/2 to 1".								
12		3	=2.0	(12' - 15') SILTY SAND - Light brown, medium to very hard, dry, fine to very fine-grained silty sand, some clay, layers of white precipitate.								
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC07**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	42"	3	=2.0	(12' - 15') SILTY SAND - Light brown, medium to very hard, dry, fine to very fine-grained silty sand, some clay, layers of white precipitate.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC08**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 8.0	

FIELD SAMPLE RECOVERY DATA						LABORATORY TEST DATA					
									PROCTOR		
DEPTH (FT)	CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	MAX. DD (LB/FT)	OPT. W.C. (%)	ADDITIONAL COMMENTS
0	53"	NR	NA	(0' - 1') SILTY SAND - Dark brown, very firm, moist, fine-grained, some plasticity, silt sand, some clay.								
1				(1' - 6') SILTY SAND - Light brown to tan, moderately firm, dry, fine to very fine-grained, silty sand, no plasticity. Trace gray material with red/orange oxides at 1' to 2'								
2												
3												
4												
5	27"			Lense of coarse sand at 4.5' to 5'								
6				(6' - 8') SAND - Gray to light brown, soft, fine to medium-grained sand.								
7												
8				E.O.B. = 8', Auger refusal due to concrete								
9												
10												
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
No samples collected.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC09**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 8.8	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	39"			(0' - 1') SOIL - Light brown, very soft, dry, trace clay, low plasticity.								
1				(1' - 8.8') SILTY SAND - Light brown to tan, dry, fine to very fine-grained silty sand, small pebbles, no plasticity, red/orange oxide stains.								
2												
3												
4												
5	25"	1	>2.0									
6												
7												
8												
9				E.O.B. = 8.8', Auger refusal due to concrete								
10												
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC10**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"			(0' - 8") SILTY SAND - Red brown, moist silty sand, gravel.								
1				(2' - 28") SILTY SAND - Red brown, medium firm, slightly moist silty sand, trace clay, some plasticity.								
2				No recovery, assumed silty sand								
3												
4												
5	30"			(5' - 10') SILTY SAND - Dark brown, very soft, wet, very fine grained silty sand, moderate plasticity.								
6				Very moist to wet at 6' to 7'								
7												
8												
9												
10		1	>2.0									
	14"			(10' - 15') CLAYEY SILT - Dark brown to tan to red/brown, moderately hard, slightly moist, 20 - 30% clay, moderate plasticity.								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC10**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	14"	1	>2.0	(10' - 15') CLAYEY SILT - Dark brown to tan to red/brown, moderately hard, slightly moist, 20 - 30% clay, moderate plasticity.								
15				E.O.B. at 15', poor recovery, material consistent with other elevated radiation level material								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC11**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7091.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"			(0' - 3') SILTY SAND - Brown, loose, very soft, dry silty sand, trace gravel.								
3	26"	1	<200	(3' - 5.2') SAND - Light tan to white, loose, soft, dry, fine to medium sand, trace clay.								
5	29"	2	<100	(5.2' - 7.5') Silty Clay - Black with tan, stiff, slightly moist, trace black gravel, white precipitate, low plasticity.								
8	20"	3	<100	(7.5' - 10') SILTY CLAY - Brown, stiff, moist silty clay, gray gravel (10-15%), moderate plasticity.								
10	55"			(10' - 14.25') SILTY CLAY - Red/brown, slightly to very stiff, slightly moist to moist silty clay, moderate plasticity.								
13		4	<100									

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC11**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	55"	4	<100	(10' - 14.25') SILTY CLAY - Red/brown, slightly to very stiff, slightly moist to moist silty clay, moderate plasticity.								
				(14.25' - 15') SANDSTONE - Gray, fine- to medium-grained weathered sandstone.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC12**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7091.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	23"	1	<100	(0' - 2.5') SILTY SAND - Brown, soft to slightly firm, slightly moist silty sand, fine to very fine organics, no plasticity.								
3	29"	2	<200	(2.5' - 5.5') SAND - Gray, soft to slightly firm, dry, fine- to medium-grained sand.								
5	42"	3	<100									
6				(5.5' - 10') CLAYEY SILT - Reddish brown, stiff to very stiff, slightly moist clayey silt, dark gravel (20-30%), moderate plasticity.								
8	32"	4	<100									
10				E.O.B. = 10', backfilled with bentonite chips								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC13**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	26"			(0' - 5') SILTY SAND - Brown to light brown, soft, dry to slightly moist, fine silty sand.								
3	24"	1	<100									
5	29"	2	<100	(5' - 15') SAND - Gray to light brown, soft, dry to slightly moist fine sand, no plasticity.								
8	25"	3	<100	Various stains of orange, white black, and red								
10	29"	4	<100									
13	21"	5	<100									

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

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PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC13**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	21"	5	<100	(5' - 15') SAND - Gray to light brown, soft, dry to slightly moist fine sand, no plasticity. No stains								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC14**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 20.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	29"			(0' - 7') SILTY SAND - Light brown, soft, dry, fine to very fine silty sand, gravel (5%).								
1		1	<100	Small sample due to recovery								
2	16"											
3												
4												
5	29"											
6												
7				(7' - 7.5') CLAY - Dark gray, dry clay and claystone fragments.								
8	26"	2	<100	(7.5' - 10') CLAYEY SILT - Stiff to very stiff, slightly moist clayey silt with clay lense, low plasticity.								
9												
10	34"			(10' - 15') SILTY SAND - Red brown, very stiff, slightly moist silty sand, trace clay, no plasticity, white/black/orange staining.								
11												
12		3	<100									
13	20"											

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC14**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	20"	3	<100	(10' - 15') SILTY SAND - Red brown, very stiff, slightly moist silty sand, trace clay, no plasticity, white/black/orange staining.								
15	35"	4	<100	(15' - 17.5) CLAYEY SILTY SAND - Light orange brown, very stiff to moderately hard, slightly to moderately moist clayey silty sand, low to medium plasticity, orange oxide.								
18		5	<100	Construction wood and debris								
20				E.O.B. = 20', backfilled with cuttings								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC15**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7098.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 22.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	25"			(0' - 1') SILTY SAND - Red/brown, soft, slightly moist, low plasticity.								
1				(1' - 13') SILTY SAND - Light tan, slightly hard, dry, very fine-grained sandy silt.								
2	20"											
3												
4												
5	31"	1	<100									
6												
7												
8	21"											
9												
10	21"	2	<100	Trace white gravel								
11												
12				11.8' - hit concrete (4" thick)								
13	26"											

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC15**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	26"			(13' - 15') SANDSTONE - White, dry sandstone grading to red/brown, dry, very fine silty sand.								
15	33"	3	<100	(15' - 18') SILTY SAND - Red/brown to light gray, soft to slightly hard, dry, very fine silty sand, lenses of gray clay.								
16												
17												
18	17"			(18' - 22.5') SILTY SAND - Dark brown, slightly hard, slightly moist, fine silty sand.								
19												
20	32"	4	<100									
21												
22												
23				E.O.B. = 22.5', backfilled with cuttings								
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC16**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7096.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 20.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	24"			(0' - 6") SOIL - Brown soil.								
1				(6" - 1') CLAY - Brown/green, medium stiff, slightly moist clay, moderate plasticity.								
2				(1' - 10') SILTY SAND - Light tan/brown, very soft, dry, very fine silty sand.								
3	18"	1	<100									
4												
5	31"											
6												
7												
8	19"	2	<100									
9												
10	32"	3	<100	(10' - 16') SILTY SAND - Light brown, soft to slightly hard, dry silty sand, 5% gravel, white and orange stains. Gravel layer (2")								
11												
12												
13	20"											

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR1-CC16**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	20"	3	<100	(10' - 16') SILTY SAND - Light brown, soft to slightly hard, dry silty sand, 5% gravel, white and orange stains.								
15	39"											
16		4	<100	(16' - 20') SANDY SILT - Light brown, slightly hard, dry silt to medium sand.								
17												
18		5										
19	20"											
20				E.O.B. = 20', backfilled with cuttings								
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/29/2013	FINISH: 10/29/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7188.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): 4.5'	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 9.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	60"	1	>2.0	(0' - ~4.5') SILTY SAND - Light brown, dry, low plasticity silty sand, 1" gravel.								
2		2	--	Increase in clay content at 2.5'								
4		3	<2.0									
5	48"			(~4.5' - ~9') SILTY SAND - Gray-brown with green, dry, fine-grained silty sand, no gravel, weathered bedrock.								
9				E.O.B. = 9', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Moved ~20' due to access.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/29/2013	FINISH: 10/29/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7200.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 24.3	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	60"	1	>2.0	(0' - 1') SAND - Gray-brown, slightly moist, medium-grained, loose (possible fill).								
1				(1' - 4') SILTY SAND - Brown-gray, loose to medium dense, dry silty sand, 1" clasts, contains multiple 2" gray sand lense, coarse-grained, dry, non-consolidated (possible fill or disturbed).								
2												
3												
4		2	>2.0	(4' - 5') SAND - Light brown, medium dense to dense, fine to silty sand, massive structure.								
5	36"	3	>2.0	(5' - 7') SILTY SAND - Light brown, dense, dry, fine grained silty sand, 1/2" - 3" clasts, massive structure.								
6												
7				(7' - 11') No recovery, assumed silty sand.								
8												
9												
10	48"			[Small lense of friable gray, weathered rock]								
11				(11' - 13.5') SILTY SAND - Light brown, slightly moist, fine- to medium-grained silty sand, 1" clasts.								
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Backfilled with cuttings.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC03**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
13	48"			(11' - 13.5') SILTY SAND - Light brown, slightly moist, fine- to medium-grained silty sand, 1" clasts.								
14		4	>2.0	(13.5' - 24') SANDY CLAY - Dark greenish gray, very moist, consolidated, high plasticity, 1" dark gray clasts								
15	60"	5	>2.0									
16				~15' cuttings become light greenish gray , stiff, dry to slightly moist sandy claystone.								
17												
18												
19												
20		6	<2.0	~20' cuttings become light brown to gray, dry with red stains								
21												
22												
23		7										
24				Trace roots/organics at 24'.								
				(24' - 24.3') SILTY CLAY - Dark brown, slightly moist, low plasticity, no oxidation, sandstone gypsum last inch.								
25				E.O.B. = 24.3'								
26												
27												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Backfilled with cuttings.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NECR2-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/29/2013	FINISH: 10/29/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7182.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): 7.0'	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

FIELD SAMPLE RECOVERY DATA						LABORATORY TEST DATA					
									PROCTOR		
DEPTH (FT)	CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	MAX. DD (LB/FT)	OPT. W.C. (%)	ADDITIONAL COMMENTS
0	43"	1	~2.0	(0' - 5') SAND - Light reddish-brown, dry, fine- to very fine-grained sand, clasts ranging from up to 1".								
1												
2												
3												
4												
5		2										
6												
7				(~7' - 10') SANDSTONE - Light gray, dry, hard, fine-grained weathered sandstone. ~7' Red oxidized lense (2"), dry, hard claystone.								
8												
9												
10				E.O.B. = 10.0', backfilled with cuttings								
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7142.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 25.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	27"			(0' - 1.5') SAND - Medium brown, loose, slightly moist, medium-grained sand.								
1												
2		1	<100	(1.5' - 5.5') SAND - Gray with purple and green, soft, slightly moist, medium-grained sand.								
3	27"											
4												
5	33"											
6		2	<100	(5.5' - 11') SILTY SAND - Brown, slightly firm, moist, very fine silty sand, trace clay.								
7												
8	27"	3	<100									
9												
10	32"											
11		4	<100	(11' - 12.5') CLAY - Dark brown, soft, moist clay, medium plasticity.								
12												
13	25"			(12.5' - 16.5') SILT WITH SAND LENSES - Medium brown, slightly stiff, slightly moist silt with sand lenses, low plasticity.								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **NMSA-CC01**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	25"			(12.5' - 16.5') SILT WITH SAND LENSES - Medium brown, slightly stiff, slightly moist silt with sand lenses, low plasticity.								
15	54"											
16				Brief increase in drilling resistance								
17		5	<100	(16.5' - 20') SILTY CLAY - Dark brown, stiff, moist silty clay, trace gravel, medium plasticity. 2" gray sandstone, medium grained								
18												
19				Hard drilling								
20				Gray sandstone in shoe								
21	54"	6	<100	(20' - 25') LAYERED CLAY AND CLAYSTONE - Dark brown to gray, soft to very hard, moist, layered clay and claystone, gypsum precipitate.								
22												
23				Hard drilling								
24												
25				E.O.B. = 25', backfilled with cuttings								
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7120.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	1	>2.0	(0' - 3') SILTY SAND - Light brown with white/gray fragments, soft, dry, trace gravel, indurated.								
3	22"			(3' - 5') SILTY SAND - Light tan to white, slightly hard to moderately hard, slightly moist, silty sand, indurated.								
5	53"	2	>2.0	(5' - 10') SILTY SAND - Light brown with orange stains, slightly hard, dry to slightly moist, gravel (5%), indurated.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 0.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	25"	1	NA	(0' - 4.9') SAND WITH GRAVEL - Tan, soft, sand with gravel, loose.								
1												
2												
3	18"			Pink hue								
4												
5	58"	2		(4.9' - 5.0') SILTY SAND - Brown, slightly moist, silty sand, indurated.								
6				(5.0' - 8.0') SAND - White with some pink, dry, fine to coarse grained sand, soft.								
7												
8		3		(8.0' - 15.0') Brown, slightly moist, clayey silt, trace gravel, moderate plasticity, moderately to very hard.								
9												
10	14"											
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC02**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	14"	3	NA	(8.0' - 15.0') Brown, slightly moist, clayey silt, trace gravel, moderate plasticity, moderately to very hard.								
15				Weathered sandstone, grey, trace gypsum E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7108.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	26"	1	PTW	(0' - 6") CLAYEY SAND - Light brown, soft, dry clayey sand, low plasticity.								
1				(6" - 2.5') CLAY - Gray to red, stiff, slightly moist clay, high plasticity.								
2												
3	32"	2	<100	(2.5' - 5') SILTY SAND - Light brown with gray, soft, dry silty sand, no plasticity.								
4												
5	30"	3	<100	(5' - 10') SILTY SAND - Light brown, soft to slightly hard, dry silty sand with gravel.								
6												
7												
8	27"			Gravel is 1/4" - 1/2", red and black stains in sand								
9												
10				E.O.B. = 10', backfilled with cuttings								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	30"	1	PTW	(0' - 4') CLAY - Gray and red, firm, moist clay, high plasticity.								
3	38"	2	PTW									
4				(4' - 5') SILTY SAND - Brown, slightly firm, slightly moist silty sand, low plasticity.								
5	36"	3	<100	(5' - 10') SILTY CLAY WITH GRAVEL - Brown with orange and white stains, firm, moist silty clay with gravel, moderate plasticity. Decreasing moisture content with depth.								
8	37"	4	<100									
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC05**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	36"	1	PTW	(0' - 7') CLAY - Brown, very firm, moist clay, organics, trace gravel, high plasticity.								
3	16"	2	PTW									
5	58"	3	<100	Purple hue present								
7	32"	4	<100	(7' - 10') CLAYEY SILT - Brown and gray, very firm, dry clayey silt, no plasticity.								
10	NR			(10' - 15') No Recovery - Assume clayey silt								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC05**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	NR			(10' - 15') No Recovery - Assume clayey silt								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC06**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/11/2013	FINISH: 11/11/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"	1	PTW	(0' - 6') CLAY - Brown and gray, stiff, moist clay, high plasticity.								
3	25"	2	PTW	More gray, red stains								
5	38"	3	<100									
6				(6' - 10') SILTY CLAY - Brown, very firm, dry silty clay, low plasticity.								
8	32"	4	<100									
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC07**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	34"	1	<100	(0' - 2.5') CLAYEY SILT TO CLAY - Brown, very firm, moist clayey silt clay, moderate plasticity.								
3	25"	2	PTW	(2.5' - 6') CLAY - Brown, slightly firm, moist clay, grades to gray, moderate plasticity.								
5	22"	3	<200									
6				(6' - 7.5') SAND - Light brown, soft, moist, medium- to coarse-grained sand.								
8	23"	4	<100	(7.5' - 10') SILTY CLAY - Dark brown, slightly firm, moist silty clay with 1/2" - 1" gravel, high plasticity.								
10				E.O.B. = 10', backfilled with cuttings, wet cuttings placed at bottom								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC08**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	27"	1	PTW	(0' - 2.5') CLAY - Gray/red brown, slightly firm, moist clay, high plasticity.								
3	30"	2	<100	(2.5' - 3') SAND - Light brown, slightly moist, coarse sand.								
				(3' - 6') SAND AND CLAY - Gray, slightly firm, moist interlayered fine-medium sand and clay, high plasticity.								
5	37"	3	<100									
6				(6' - 10') SILT WITH GRAVEL - Gray brown, firm, dry silt with gravel, gravel < 1/2", no plasticity.								
7	28"			Grades to red-brown								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC10**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7106.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 9.6	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	43"	1	PTW	(0" - 7.3') SILTY CLAY - Yellow-orange, soft, moist silty clay, high plasticity.								
3	40"	2	PTW									
5	47"	3	PTW									
7	20"	4	<100	(7.3' - 9.6') SILTY SAND - Gray, moderately hard, moist silty sand, no plasticity.								
10				E.O.B. = 9.6', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC11**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7113.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	27"	1	<100	(0' - 5') SILTY SAND - Light brown, slightly firm, dry, silty sand, no plasticity.								
3	15"	2	<200	Gray stringers								
5	60"	3	PTW	(5' - 12') CLAY - Brown and gray, soft, slightly moist clay, high plasticity.								
8	50"	4	PTW	Strong diesel smell								
10	45"	5	PTW									
11				Diesel smell absent at ~12'								
12				(12' - 12.5') CLAY AND GRAVEL - Dark brown, slightly hard, slightly moist clay and gravel, moderate plasticity.								
13	28"	6	<100	(12.5' - 15') CLAY - Dark green/brown/gray, firm, slightly moist clay, no plasticity.								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC11**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	28"	6	<100	(12.5' - 15') CLAY - Dark green/brown/gray, firm, slightly moist clay, no plasticity.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
Core expanded in auger causing greater than 100% recovery.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC12**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7113.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 17.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	29"	1	<100	(0' - 5') SILTY SAND - Red-brown, soft, dry to slightly moist silty sand.								
3	24"	2	<200									
5	25"	3	<100	(5' - 11') SAND - Light tan, soft, dry, medium to coarse sand.								
8	25"											
10	31"											
11				(11' - 15') CLAY - Dark gray, very soft, moist clay, high plasticity, strong diesel smell.								
12				Strong diesel smell								
13	58"	4	PTW									

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC12**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	58"	4	PTW	(11' - 15') CLAY - Dark gray, very soft, moist clay, high plasticity, strong diesel smell. Last 3" - gray brown, dry siltstone								
15	40"	5	<100	(15' - 17.5') CLAYSTONE/SILTSTONE - Dark brown, hard, slightly moist claystone/siltstone.								
17				E.O.B. = 17.5', backfilled with cuttings								
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC13**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/12/2013	FINISH: 11/12/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7111.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 13.9	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	40"	1	<200	(0' - 5') SILTY CLAY - Brown, very firm, dry silty clay, low plasticity.								
5	29"	2	PTW	(5' - 7.5') CLAY - Light tan to gray to black, soft, slightly moist clay, high plasticity. Diesel smell								
8	60"	3	PTW	(7.5' - 12') CLAY - Gray to brown, soft, moist to slightly wet clay, high plasticity.								
10	34"	4	PTW									
12				(12' - 12.5') SILTSTONE - Brown, very hard, dry siltstone.								
13	25"	5	<100	(12.5' - 13.9') SILTSTONE INTERBEDDED WITH SANDSTONE - Light gray to medium brown, siltstone								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC13**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	25"	5	<100	(12.5' - 13.9') SILTSTONE INTERBEDDED WITH SANDSTONE - Light gray to medium brown, siltstone interbedded with sandstone, low clay content in some areas.								
				E.O.B. = 13.9', backfilled with cuttings								
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC14**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/13/2013	FINISH: 11/13/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7124.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: KJ	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 30.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0				(0' - 15') SILTY SAND - Orange/brown, dry silty sand with ~30% gravel content, no clay content, roadfill/dam.								Logging the cuttings only
10				Moisture content increased, silty sand with clay, minimal gravel.								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC14**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14				(0' - 15') SILTY SAND - Orange/brown, dry silty sand with ~30% gravel content, no clay content, roadfill/dam.								
15	8"			(15' - 15.7') SILTY SAND WITH GRAVEL - Yellowish orange, unconsolidated, moist silty sand with gravel, weak cementation, no plasticity.								
16												
17												
18												
19												
20	45"	1	<100	(20' - 22.5') SAND - Medium brown, dry, fine-grained sand interbedded with weathered siltstone, no plasticity. Wood/small branches returning with cuttings								
21												
22												
23	21"	2	<100	(22.5' - 23.5') SILTSTONE - Light gray, dry siltstone, no plasticity, weathered.								
24				(23.5' - 24.2') MUDSTONE - Dark gray brown, stiff, dry mudstone with gypsum infilling.								
25				Difficult to drill 25' - 26.5'								
26	41"	3	<100	(25' - 27.5') SANDSTONE - Light gray to medium brown, hard, dry, fine-grained sandstone, some siltstone interbeds, weathered.								
27												
	30"	4	<100	(27.5' - 30') SANDSTONE - Medium brown, very stiff, dry								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC14**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
28	30"	4	<100	(27.5' - 30') SANDSTONE - Medium brown, very stiff, dry sandstone grading to mudstone, gypsum infilling, no plasticity, weathered.								
29												
30				E.O.B. = 30', backfilled with cuttings								
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												
41												
42												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC15**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/13/2013	FINISH: 11/13/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7124.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: KJ	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 22.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	53"	1	<100	(0' - 1') SILTY SAND - Yellow orange, dry, silty sand.								
1				(1' - 5') SILTY SAND - Yellow orange, moist silty sand with gravel up to 2", some clay content in interbeds with low plasticity.								
2												
3												
4												
5	47"	2	<100	(5' - 6') SANDSTONE - Light gray, very stiff, dry sandstone, weathered, very thin bedding.								
6				(6' - 12.5') MUDSTONE - Hard, slightly moist, mudstone, gypsum and siltstone infilling, weathered thick bedding.								
7												
8												
9												
10	30"	3	<100									
11												
12												
13	28"	4	<100	(12.5' - 15') SILTSTONE - Hard, slightly moist, thinly bedded siltstone, weathered.								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC15**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	28"	4	<100	(12.5' - 15') SILTSTONE - Hard, slightly moist, thinly bedded siltstone, weathered.								
15	42"	5	<100	(15' - 22.5') SANDSTONE - Yellow gray to gray, dry sandstone interbedded with siltstone, gypsum infilling, very weathered.								
16												
17												
18	33"	6	<100									
19												
20	44"	7	<100	Moist section at 20.2 for ~4"								
21												
22												
23				E.O.B. = 22.5', backfilled with cuttings								
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC16**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/13/2013	FINISH: 11/13/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7122.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: KJ	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 17.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	40"	1	<100	(0' - 3.5') SANDSTONE - Yellowish orange, very stiff, dry sandstone grading to siltstone, very thin beds, very weathered. Recovery ends at ~3.5, assume sandstone								
5	27"	2	<100	(5' - 7.5') SILTSTONE - Yellow to gray, very stiff, dry siltstone with interbedded mudstone, low clay content, weathered.								
8	21"	3	<100	(7.5' - 8.3') SAND - Yellow brown, soft sand, grading to very stiff silt, very thin beds, no plasticity. Recovery ends at ~8.3, assume sand								
10	28"	4	<100	(10' - 12.5') SILTSTONE - Yellow brown, soft siltstone interbedded with dark brown mudstone with gypsum infilling, weak, very weathered.								
12.5	25"	5	<100	(12.5' - 17.5') SANDSTONE - Medium brown gray, slightly moist sandstone interbedded with siltstone.								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P1-CC16**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	25"	5	<100	(12.5' - 17.5') SANDSTONE - Medium brown gray, slightly moist sandstone interbedded with siltstone.								
15	30"	6	<100									
16												
17				Gypsum present								
18				E.O.B. = 17.5', backfilled with cuttings								
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P2-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7122.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	36"	1	>2.0	(0' - 6") GRAVEL WITH SILTY SAND - White gravel with brown silty sand.								
1				(6" - 2') SILTY SAND - Brown, hard, dry silty sand.								
2				(2' - 5.5') SAND - White, dry, medium to coarse sand, grades to indurated.								
3												
4												
5	41"	2	=2									
6				(5.5' - 10') SILT - Brown, slightly to moderately hard, dry, fine to slightly silt, trace clay, no plasticity.								
7												
8	22"	3	=2									
9												
10				E.O.B. = 10', backfilled with cuttings								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P2-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7124.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	15"	1	>2.0	(0' - 6") SOIL - Reddish-brown, loose, dry, with 20-30% tan gravel (1/2").								
5	28"	2	<2.0	(5' - 10') SILTY SAND - Tan to light brown, soft to slightly hard, dry fine silty sandy, white gravel (30%) (1 1/2"), indurated.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P2-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/6/2013	FINISH: 11/6/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7124.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 7.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"	1	=2	(0' - 2') SILTY SAND WITH GRAVEL - Dry to slightly moist, silty sand with gravel.								
2				(2' - 2.5') SANDSTONE BOULDER								
3	26"			(2.5' - 5.3') SAND - Light brown, very soft, dry fine sand with trace gravel.								
4				Trace gravel (1/2")								
5	32"											
6		2	<2.0	(5.3' - 7.5') SILTSTONE - White, slight to medium hard, dry siltstone, trace clay, weathered.								
7												
8				E.O.B. = 7.5', backfilled with cuttings								
9												
10												
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **P3-CC07**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/13/2013	FINISH: 11/13/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7064.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 4.8	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0		Bulk	<100	(0' - 6") SILTY SAND - Brown, very soft, slightly moist silty sand with trace clay, low plasticity.								
4.5				(4.5' - 4.75') CLAYEY SAND - clayey sand, low plasticity.								
4.8				Refusal at 57" E.O.B. = 4.8', backfilled with cuttings								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
Hand auger due to access restrictions.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7084.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.3	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	50"	1	<2.0	(0' - 6') SAND - Light brown to tan, medium hard, small gravel 2 1/2" pieces, no plasticity.								
5	60"											
8				(8' - 10') SAND - Light tan to red/brown, very hard, fine-grained silty sand, dry, low plasticity.								
10	60"			Red/brown: very fine siltstone/claystone								
11				(10.5 - 11.5') SAND - White, soft, dry, medium-grained sand.								
12		2	<2.0	(11.5' - 15') SILTSTONE/CLAYSTONE - Reddish brown to tan, slightly hard, dry to slightly moist, very fine siltstone/claystone interbedded.								
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC01**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	60"	2	<2.0	(11.5' - 15') SILTSTONE/CLAYSTONE - Reddish brown to tan, slightly hard, dry to slightly moist, very fine siltstone/claystone interbedded.								
15				Last 1" white, dry, fine to very fine silty sandstone, very hard								
				E.O.B. = 15.3', auger refusal								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7080.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 20.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	49"			(0' - 1') SILTY SAND - Red/brown, slightly hard, slightly moist, some plasticity.								
1		1	<2.0									
2												
3												
4				(4' - 10') SILTY SAND - Light brown to tan, soft to medium hard, dry, trace white clasts, some gravel.								
5	26"	2	=2.0									
6												
7												
8												
9												
10	43"			(10' - ~14.5') SILTY SAND - Light brown, very soft to medium hard, dry, fine to very fine-grained silty sand, no plasticity.								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC02**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	43"			(10' - ~14.5') SILTY SAND - Light brown, very soft to medium hard, dry, fine to very fine-grained silty sand, no plasticity.								
				(~14.5' - 15') SAND - Tan, hard, dry, fine-grained sand.								
15	32"	3	<2.0	(15' - 20') Sand - Light brown, very soft (top) to medium hard (bottom ~10'), no plasticity.								
20				E.O.B. = 20', backfilled with cuttings								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/31/2013	FINISH: 10/31/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7087.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 20.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	46"			(0' - 1') SOIL - Dark brown, moist soil.								
1		1	>2.0	(1' - 15') SILTY SAND - Light brown, soft, dry, fine-grained silty sand, white weathered sandstone fragments, no plasticity.								
5	14"											
10	14"	2	=2.0	No sandstone fragments								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC03**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	14"	2	=2.0	(1' - 15') SILTY SAND - Light brown, soft, dry, fine-grained silty sand, white weathered sandstone fragments, no plasticity.								
15	12"			(15' - 20') SAND - Light tan, medium hard, dry, trace clay, trace sandstone fragments, low plasticity.								
20				E.O.B. = 20', backfilled with cuttings								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7080.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): 22.0'	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 25.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	24"	1	<100	(0' - 6') SILTY SAND - Brown, soft, moist silty sand, clay lense at 1' (1"), no plasticity.								
1												
2												
3	28"											
4												
5	31"	2	<100									
6				(6' - 12.5') SAND - Brown, slightly moist, medium-grained sand, trace gravel (5%), grades to very fine silty sand, indurated.								
7												
8	24"											
9												
10	26"											
11												
12												
13	26"	3	<100	(12.5' - 13.5') SILT TO MEDIUM SAND - Very soft, slight moist silty to medium sand, gray gravel (40%).								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC04**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	26"	3	<100	(12.5' - 13.5') SILT TO MEDIUM SAND - Very soft, slight moist silty to medium sand, gray gravel (40%).								
				(13.5' - 15') SILT - Gray and red, slightly firm, slightly moist silt, trace clay, low plasticity.								
15	58"	4	<100	(15' - 22') SILT - Gray and orange (50/50), medium stiff, moist silt, trace clay, moderate plasticity.								
16												
17												
18												
19												
20	52"											
21												
22		5	<100	(22' - 25') CLAYEY SILTY SAND - Brown/gray, very stiff, dry clayey silty sand, low plasticity. (native soil)								
23												
24												
25				E.O.B. = 25', backfilled with cuttings								
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC05**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7080.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	34"	1	<100	(0' - 5') SILTY SAND - Medium stiff to soft, moist silty sand, trace clay, no plasticity.								
5	27"	2	<100									
7	22"	3	<100	30-40% gravel with orange/white stains								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **PND3-CC06**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/7/2013	FINISH: 11/7/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7082.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	36"	1	<100	(0' - 5') SILTY SAND - Brown, soft to slightly hard, dry, very fine silty sand, indurated.								
5	29"	2	<100	(5' - 10') SAND - Light brown, very soft, dry fine sand.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **ROAD-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7147.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): 6.2'	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	36"	1	>2.0	(0' - 3.5') GRAVELLY SAND - Medium brown, moist, large 1-2" gravel, fine- to coarse-grained sand, trace clay, moderate plasticity.								
4				(3.5' - 4.8') SILTY SAND - Light reddish brown, dry, fine silty sand, no gravel, low plasticity. Native material								
5	28"	2	<2.0	(~4.8' - 6') SANDSTONE - Light tan, dry, fine-grained weathered sandstone, 1/2 - 2" pieces.								
6				(6' - 6.2') CLAY - White, loose, dry, clay-sized particles.								
6				(6.2' - E.O.B.) SANDSTONE - Light tan, dry, weathered sandstone, same as 5' - 6'.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
Backfilled with 1 bag of bentonite and cuttings.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **ROAD-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7132.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): 7.0'	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	35"	1	<2.0	(0' - ~1') SOIL - Surface soil, large clasts found on road.								
1				(~1' - 2.5') SAND - Light-dark brown, moderately stiff, slightly moist, some clay, no clasts, low plasticity.								
2												
3				(2.5' - 3') SANDSTONE - Light tan, not stiff, dry, fine- to medium-grained, weathered sandstone clasts. Poor recovery, assume sandstone to 5'								
4												
5	24"	2		(5' - 6') SILTY SAND - Light brown, soft, dry, 1" layer of clay/vegetation, sandstone clasts 1/4" - 1.5", low plasticity.								
6				(6' - 7') SILTY SAND - Light tan, soft, dry, fine to very fine-grained, silty sand, possible weathered bedrock, low plasticity. Poor recovery, assume silty sand to E.O.B.								
7												
8												
9												
10				E.O.B. = 10', backfilled with cuttings								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **ROAD-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 10/30/2013	FINISH: 10/30/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7110.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	49"	1	<2.0	(0' - 1') SOIL - Dark brown, moist soil.								
1				(1' - 5') SILTY SAND - Light brown with 5% white, very soft, dry, fine to very fine-grained silty sand, low plasticity, disturbed.								
5	15"			(5' - 10') SILTY SAND - Light brown, slightly stiff, dry, fine to very fine-grained, ~5% 1" clasts, low plasticity, undisturbed. Not enough material for 2nd sample								
10				E.O.B. - 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-002**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7098.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	28"	1	<100	(0' - 2') SILTY SAND - Reddish brown, slightly to moderately stiff, dry to slightly moist, fine to very fine-grained silty sand, layered ~1 gray material, low plasticity.								
2		2	<100	(2' - 2.5') SILTY SAND - Light brown/reddish brown, soft, dry, no plasticity, orange oxide. (2.5' - 10') SILTY SAND - Light brown to tan, soft to slightly hard, dry, very fine silty sand, no plasticity.								
3	20"											
5	30"											
7		3	<100									
8	21"											
10				E.O.B. - 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-005**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7092.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 22.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	26"	1	<200	(0' - 1') SOIL - Brown, slightly moist soil.								
1				(1' - 5') SAND - Light gray, soft, dry to slightly moist, fine- to medium-grained sand, no plasticity, green/purple/red/orange stains.								
2												
3	21"	2	<200									
4												
5	24"	3	PTW	(5' - 10') SILTY SAND - Light gray, soft to slightly hard, dry to slightly moist, fine- to medium-grained, low plasticity, brown/purple/green stains.								
6												
7				~7' Dark gray rock, claystone with 2 mm clasts								
8	24"	4	<200									
9												
10	28"	5	<100	(10' - 11') SAND - Medium brown, soft, moist, fine- to very fine-grained sand, low plasticity.								
11												
12												
13	28"	6	<100	(12.5' - 19.5') SILT WITH CLAY - Dark brown, slightly to moderately stiff, moist, fine silt with clay, moderate plasticity.								

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-005**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	28"	6	<100	(12.5' - 19.5') SILT WITH CLAY - Dark brown, slightly to moderately stiff, moist, fine silt with clay, moderate plasticity.								
15	40"	7	<100									
16												
17												
18				Harder drilling								
19												
20				(19.5' - 20') SAND - Brown, very hard, dry to slightly moist, fine-grained sand with 20% gravel (<1").								
21	30"	8	<100	(20' - 22.5') SAND - Light brown-tan, very soft, dry, clasts (1/2" - 1"), no plasticity, red/orange oxide.								
22												
23				E.O.B. = 22.5', backfilled with cuttings								
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7097.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	1	<200	(0' - 5') SAND - Light brown to tan, slightly hard, dry, fine to medium-grained sand, clay lenses, low/no plasticity, brown red/orange oxide stains.								
1												
2				Sample interval due to recovery.								
3												
4				Light tan sand lense at ~5'								
5	22"	2	<100	(5' - 10') CLAYEY SILT - Red/brown, slightly to moderately stiff, slightly to moderately moist, clayey silt, moderate plasticity.								
6												
7				Sample interval due to recovery.								
8												
9												
10				E.O.B. = 10', backfilled with cuttings								
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
Mine debri in hole.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC03**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7096.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	1	<100	(0' - 2') SAND - Light brown, soft to slightly hard, dry, gray coarse sand, lenses of gray and white material, orange/red oxide.								
2				(2' - 2.5') SILTY SAND - Light to medium brown, slightly hard, dry, very fine-grained silty sand, no plasticity.								
	25"	2	<100	(2.5' - 5') SILTY SAND - Light brown, soft to slightly hard, dry, no plasticity, gray stringers, red/orange oxide stains (trace).								
5	37"	3	<100	(5' - 10') SILTY SAND - Light brown, very soft to soft, dry, fine to very fine-grained silty sand, no plasticity, uniform.								
10				E.O.B. = 10', backfilled with 1 bag bentonite and cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC04**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 17.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	1	<200	(0' - 13') SAND - Light tan, soft to slightly hard, dry to slightly moist, fine to coarse-grained sand, trace red clay, no plasticity, red/orange oxide stains.								
3	25"	2	<200									
5	23"	3	<200									
8	20"	4	PTW									
10	24"	5	<200									
13	21"											

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

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BORING LOG

BOREHOLE ID: **SP-CC04**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	21"			(13' - 17.5') SAND - Light tan, very soft, slightly moist, medium to coarse-grained sand, well sorted.								
15	22"	6	<200									
16												
17												
18				E.O.B. = 17.5', backfilled with cuttings								
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC06**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7091.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	31"	1	<100	(0' - 2.5') SILTY SAND - Medium brown, slightly firm, dry to slightly moist, fine to very fine silty sand, trace organics, trace clay, low plasticity.								
3	23"	2	<100	(2.5' - 7') SILTY SAND - Medium brown, slightly firm, slightly moist, fine to very fine silty sand, trace clay, medium plasticity, orange and black staining.								
5	26"	3	<100	Driller notes harder at 6.5' - 7'								
7	15"	4	<100	(7' - 10') SANDSTONE - Light brown, hard, dry, fine- to medium-grained weathered sandstone, indurated.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC07**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/1/2013	FINISH: 11/1/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7093.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	30"	1	<100	(0' - 2.5') SILTY SAND - Medium to light brown, soft to slightly hard, dry to slightly moist, fine to very fine silty sand, trace gravel (2 1/2"), trace gray.								
3	32"	2	<200	(2.5' - 5') SILTY SAND - Red/brown with white lense, moderately to very firm, dry to slightly moist, fine to very fine silty sand, trace to minor clay, no plasticity.								
5	33"	3	<100	(5' - 7.5') SILTY SAND - Brown to dark brown, firm to very firm, slightly moist, very fine silty sand with clay, moderate plasticity.								
8	31"	4	<100	(7.5' - 10') SILTY SAND - Light brown, soft to slightly firm, dry to slightly moist, very fine silty sand, no plasticity.								
10				E.O.B. = 10', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

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BORING LOG

BOREHOLE ID: **SP-CC08**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/4/2013	FINISH: 11/4/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7097.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	32"	1	PTW	(0' - 6') SAND - Gray with orange blue stains, soft to slightly firm, dry, fine to medium-grained sand, no plasticity.								
1												
2												
3	22"	2	<200									
4												
5	32"											
6		3	<100	(6' - 10') SILTY SAND - Brown to dark brown, slightly hard, dry to slightly moist, very fine silty sand, no plasticity.								
7												
8	23"											
9												
10	32"			(10' - 15') SILTY SAND - Brown with grey lense, Soft to slightly stiff, dry to slightly moist, fine to very fine-grained silty sand, trace clay, no plasticity.								
11												
12				12.5' - gray material lense (1")								
13	22"	4	<100									

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC08**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	22"	4	<100	(10' - 15') SILTY SAND - Brown with grey lense, Soft to slightly stiff, dry to slightly moist, fine to very fine-grained silty sand, trace clay, no plasticity.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC09**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/4/2013	FINISH: 11/4/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 12.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	26"	1	<200	(0' - 0.5') SOIL - Brown soil.								
1				(0.5' - 10.5') SAND - Gray, soft, slightly moist, fine to medium-grained sand, white and orange stains.								
2												
3	14"	2	<200									
4				at 4': medium to coarse-grained, well cemented sandstone								
5	30"	3	PTW									
6												
7												
8	18"	4	<200									
9												
10				Sand becomes coarse-grained, green streaks.								
	25"											
11		5	<100	(10.5' - 12.5') SILTY SAND - Brown, soft to slightly firm, slightly moist, fine to very fine-grained silty sand, gravel (<1/2"), low to medium plasticity.								
12												
13				E.O.B. -= 12.5', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC10**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/4/2013	FINISH: 11/4/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 17.5	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	29"	1	PTW	(0' - 7') SAND - Light gray, soft, slightly moist, fine to medium-grained sand, trace clay, trace gravel, no plasticity.								
3	22"	2	<200									
5	24"	3	PTW	Sand becomes dry								
7	10"			(7' - 10.5') SAND - Gray, slightly moist, coarse sand, indurated, trace gold/red/brown.								
10	14"											
11		4	<100	(10.5' - 15') SILTY SAND - Dark brown, slightly firm, slightly moist to moist, fine to very fine silty sand, low to medium plasticity.								
13	10"											

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC10**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	10"	4	<100	(10.5' - 15') SILTY SAND - Dark brown, slightly firm, slightly moist to moist, fine to very fine silty sand, low to medium plasticity.								
15	28"	5	<100	(15' - 17.5') CLAYEY SILT - Brown, stiff, moist, clayey silt, high plasticity.								
17				E.O.B. = 17.5', backfilled with cuttings								
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC11**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/4/2013	FINISH: 11/4/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7095.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 10.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	36"	1	PTW	(0' - 8") SOIL - Dark brown soil.								
1				(8" - 4.5') SAND - Dark gray, soft, dry, no plasticity.								
2		2	<200									
3	28"											
4												
5				(4.5' - 10') SILTY SAND - Slightly hard, dry to slightly moist, fine to very fine silty sand, no plasticity.								
	32"	3	<200									
6												
7				Trace gravel, ~1"								
	28"											
8												
9												
10				E.O.B. = 10', backfilled with cuttings								
11												
12												
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **SP-CC12**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/4/2013	FINISH: 11/4/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7094.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 5.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	31"	1	<200	(0' - 2') GRAVELLY SAND - Light gray, soft, dry, angular dark gray gravel, no plasticity.								
2	25"	2	<100	(2' - 5') SAND - Red/brown, slightly stiff, dry, trace clay, no plasticity.								
5				E.O.B. = 5', backfilled with cuttings								

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **YARD-CC01**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7156.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	26"	1	<2.0	(0' - 4.5') SILTY SAND - Light brown, very soft, dry gravelly silty sand.								
1												
2												
3	29"			Slightly hard sand lenses								
4												
5				(4.5' - 6') WEATHERED SANDSTONE - Light tan, dry, weathered sandstone, silty sand, fractured.								
6	38"	2	<2.0	(6' - 10') SILTY SAND WITH GRAVEL - Light tan, very soft, dry silty sand with gravel (1/4").								
7												
8	18"											
9												
10	57"	3	<2.0	(10' - 12') WEATHERED SANDSTONE - Slightly hard, weathered sandstone, fine to very fine sand.								
11												
12				(12' - 15') LAYERED CLAYSTONE AND SILTSTONE - Dark gray, medium stiff, dry claystone layered with siltstone.								
13												

LEGEND:
- PTW = RAD READINGS ABOVE 200 pCi/g
- <200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
- <100 = RAD READINGS BELOW 100 pCi/g
- >2.0 = RAD READINGS ABOVE 2.0 pCi/g
- <2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
- C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **YARD-CC01**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	57"	3	<2.0	(12' - 15') LAYERED CLAYSTONE AND SILTSTONE - Dark gray, medium stiff, dry claystone layered with siltstone.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **YARD-CC02**

CONTRACTOR INFORMATION	DRILL RIG INFORMATION		BOREHOLE INFORMATION	
DRILLING COMPANY: NATIONAL	DRILLING RIG: CME 85 HD	BIT TYPE: N/A	START: 11/8/2013	FINISH: 11/8/2013
DRILLER: M. CAIN	DRILLING METHOD: H.S.A.	HOLE DIAM.: 8.25"	SURFACE ELEV. (FT): 7148.0	
DRILLER'S HELPER: J. RAMIREZ	HAMMER TYPE: AUTO	AUGER ID: 5.25"	DEPTH TO BEDROCK (FT): N/A	
LOGGED BY: CME	HAMMER WT: 140 lb	CORE DIAM.: 3.0"	TOTAL DEPTH (FT): 15.0	

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
0	33"	1	<2.0	(0' - 15') SILTY SAND WITH GRAVEL - Light brown, very soft, dry silty sand with gravel, gravel is 1/4" to 1" large, 5%.								
1												
2												
3	25"											
4												
5	45"	2	<2.0									
6												
7												
8												
9												
10	35"	3	<2.0	Trace white gravel								
11												
12												
13												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

MWH

PROJ. LOC.: GALLUP, NM

CLIENT:

NECR - PRE DESIGN STUDY INVESTIGATION

BORING LOG

BOREHOLE ID: **YARD-CC02**

DEPTH (FT)	FIELD SAMPLE RECOVERY DATA: CORE RECOV. (IN)	SAMPLE NO.	RAD FIELD SCREENING (pCi/g)	MATERIAL DESCRIPTION	USCS CLASS	GRAPHIC	LABORATORY TEST DATA: WATER CONT. (%)	DRY DENSITY (PCF)	SPECIFIC GRAVITY	PROCTOR: MAX. DD (LB/FT)	PROCTOR: OPT. W.C. (%)	ADDITIONAL COMMENTS
14	35"	3	<2.0	(0' - 15') SILTY SAND WITH GRAVEL - Light brown, very soft, dry silty sand with gravel, gravel is 1/4" to 1" large, 5%.								
15				E.O.B. = 15', backfilled with cuttings								
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												

LEGEND:
PTW = RAD READINGS ABOVE 200 pCi/g
<200 = RAD READINGS BELOW 200 pCi/g AND ABOVE 100 pCi/g
<100 = RAD READINGS BELOW 100 pCi/g
>2.0 = RAD READINGS ABOVE 2.0 pCi/g
<2.0 = RAD READINGS BELOW 2.0 pCi/g (AKA CLEAN MATERIAL)
C = COMPOSITE SAMPLE

NOTES:
None.

RAD SCREENING NOTE:
ALL FIELD SCREENINGS CONDUCTED BY AVM

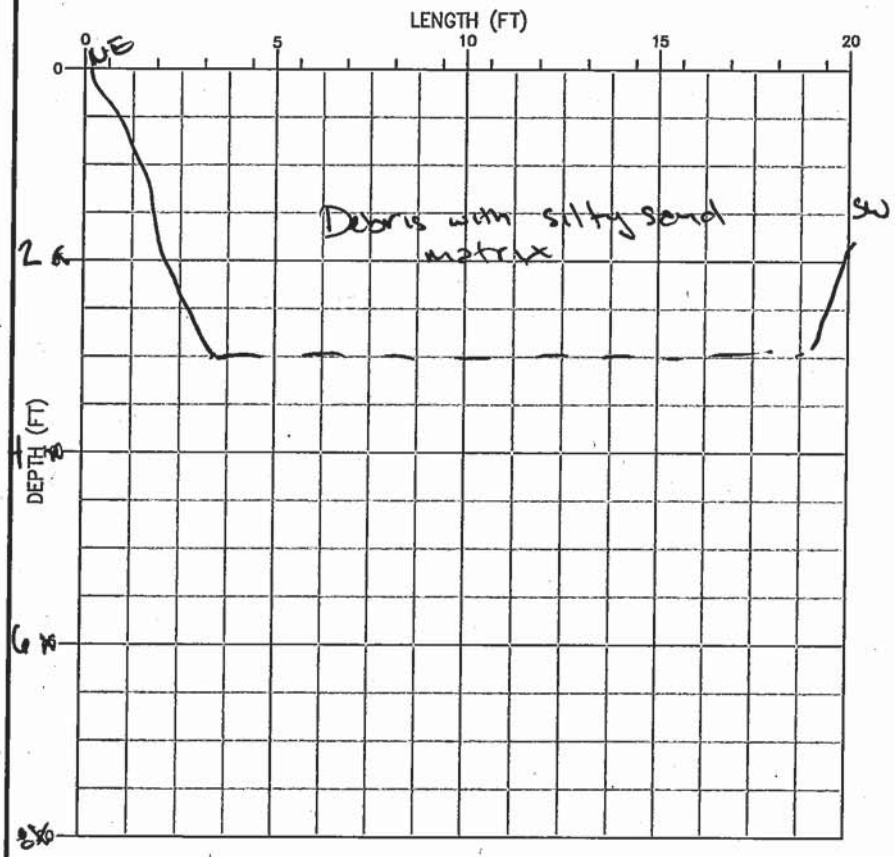
APPENDIX B2.1C

ASBESTOS PIT

LOGS

PIT NAME: PACM-Pit 1
GENERAL LOCATION: Pond 1
PIT TREND: NE-SW
PIT FACED LOGGED: SE

DATE: Nov 14, 2013
FIELD ENGINEER: K. Johnson
EXCAVATOR: Bebe
CONTRACTOR: AMEC



TEST PIT LOG

LEGEND

—— CONTACT

▽ GROUNDWATER LEVEL

SAMPLE No.	DEPTH	TIME
PACM-Pit1-001	0-1'	13:29
PACM-Pit1-002	0-1'	13:29

PIT WIDTH: 4 ft
PIT LENGTH: 22 ft
PIT DEPTH: 3 ft

SOIL UNIT	SOIL DESCRIPTION AND EXCAVATION NOTES
	Matrix - silty sand, sl. moist. Yellow orange. Potential bedrock at NE end Debris to the surface → Rotten wood, concrete chunks, cinder blocks, T posts, Prisco pipe, plastic bottles. floor tile. Debris very close to surface.

SPECIAL NOTES:

Larry Bush on site to advise where vermiculite insulation may be located.
-Per LB - Debris was pushed off the road in the NE corner of Pond 1 & then buried.

REV	REVISIONS	DATE	DES BY	DWN BY	REVIEWED AND SIGNED BY

MWH

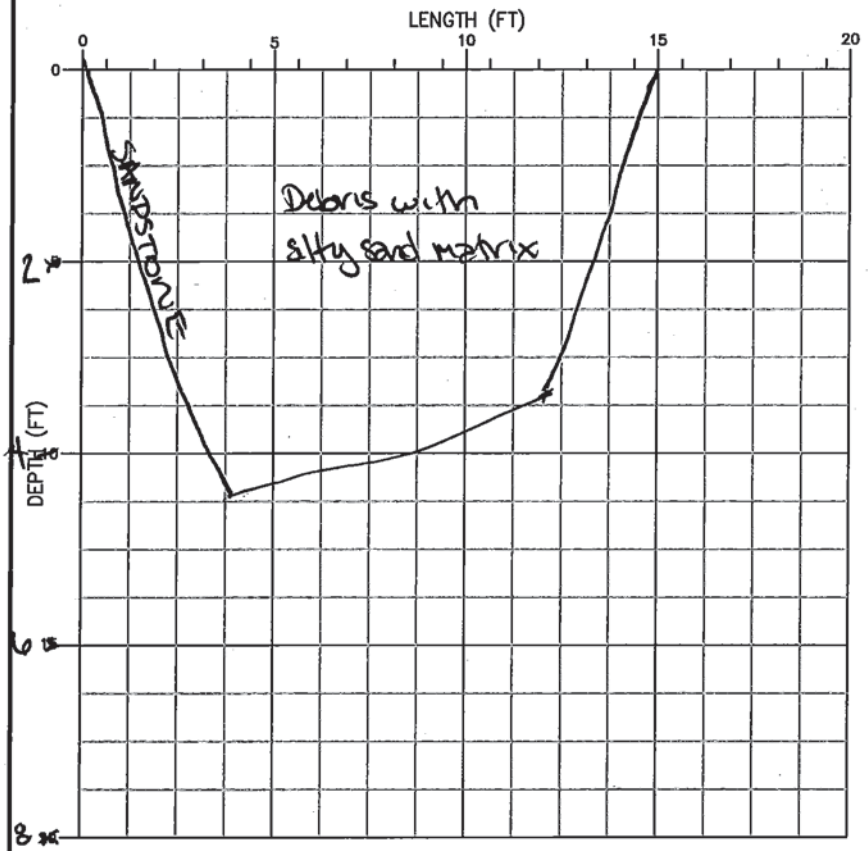
PROJECT No
FILENAME:
SCALE NOT TO SCALE
FIGURE No

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

PIT NAME: PACM-Pit 2
GENERAL LOCATION: Pond 1
PIT TREND: NE-SW
PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
FIELD ENGINEER: K. Johnson
EXCAVATOR: Bobc
CONTRACTOR: AMEC

TEST PIT LOG



LEGEND

—— CONTACT

▽ GROUNDWATER LEVEL

SAMPLE No.	DEPTH	TIME

PIT WIDTH: 4.5'
PIT LENGTH: 15'
PIT DEPTH: 4.5'

SOIL UNIT	SOIL DESCRIPTION AND EXCAVATION NOTES
	Matrix - silty sand, slightly moist, yellow orange. Sandstone bedrock on NE end of the pit. Debris included: cinder blocks, Orisco pipe, fiberglass insulation, sheetrock, etc.

SPECIAL NOTES:

SEE PACM-Pit 1
-Pit 2 contained the most debris of the 5 pits.

REV	REVISIONS	DATE	DES BY	DWN BY	REVIEWED AND SIGNED BY

MWH

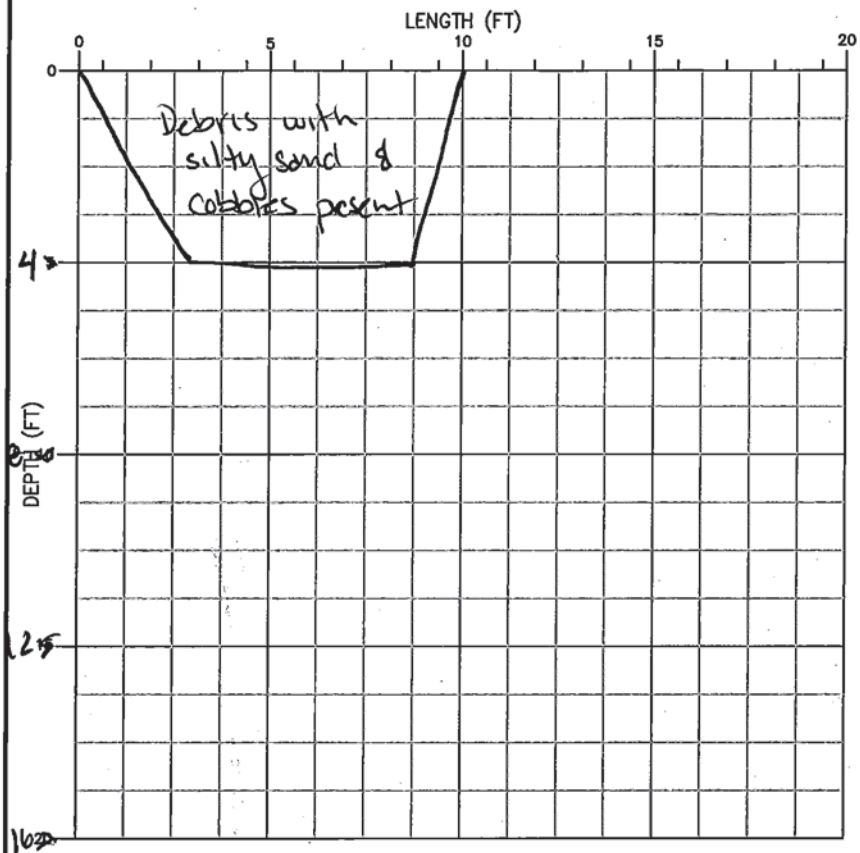
PROJECT No
FILENAME:
SCALE NOT TO SCALE
FIGURE No

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

PIT NAME: PACM-Pit 3
GENERAL LOCATION: Pond 1
PIT TREND: NE-SW
PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
FIELD ENGINEER: K. Johnson
EXCAVATOR: Bebe
CONTRACTOR: KMEC

TEST PIT LOG



LEGEND

—— CONTACT

▽ GROUNDWATER LEVEL

SAMPLE No.	DEPTH	TIME

PIT WIDTH: 4 ft
PIT LENGTH: 3.5 ft
PIT DEPTH: 10 ft

SOIL UNIT	SOIL DESCRIPTION AND EXCAVATION NOTES
	Pit generally contained a matrix of silty sand w/gravel/cobbles. Sl. moist. Debris comprised of cinder blocks & Drisco® pipe.

SPECIAL NOTES:

SEE PACM-Pit 1

REV	REVISIONS	DATE	DES BY	DWN BY	REVIEWED AND SIGNED BY

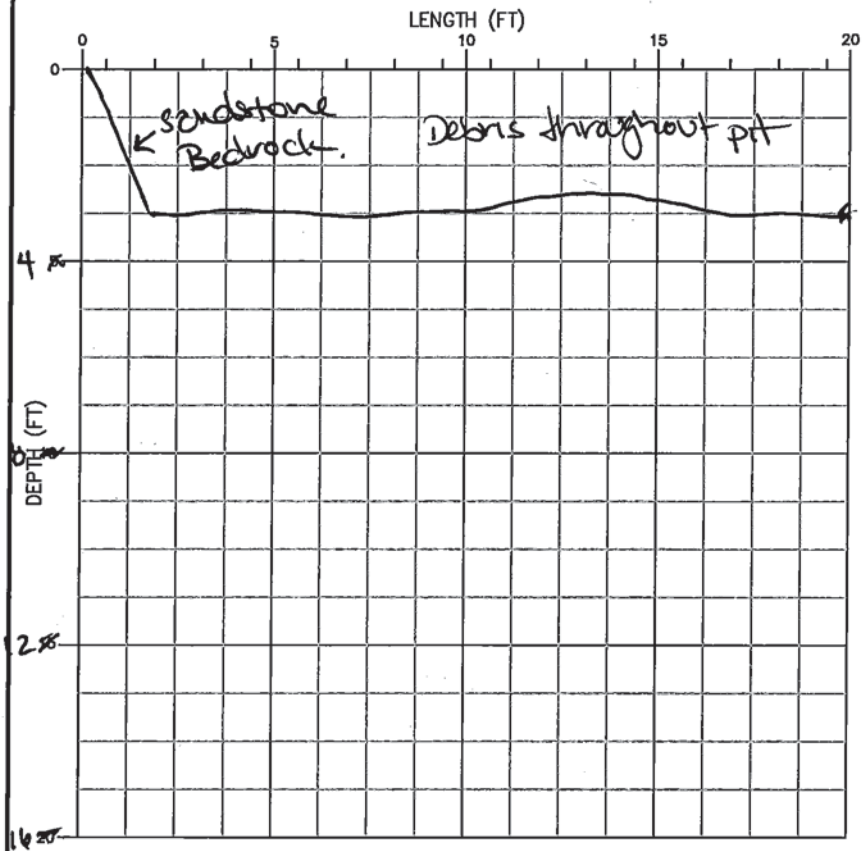
MWH

PROJECT No
FILENAME:
SCALE NOT TO SCALE
FIGURE No

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

PIT NAME: PACM - Pit 4
GENERAL LOCATION: Pond 1
PIT TREND: NE-SW
PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
FIELD ENGINEER: K. Johnson
EXCAVATOR: Bebe
CONTRACTOR: AMEC



TEST PIT LOG

LEGEND

—— CONTACT

▽ GROUNDWATER LEVEL

SAMPLE No.	DEPTH	TIME

PIT WIDTH: 4 ft
PIT LENGTH: 25 ft
PIT DEPTH: 3 ft

SOIL UNIT	SOIL DESCRIPTION AND EXCAVATION NOTES
	Matrix - silty sand, slightly moist, gravel & cobbles up to 1 ft in diameter present. Sandstone Bedrock on NE end of the pit. Debris included: Fiberglass insulation, metal, rotten/burnt wood,

SPECIAL NOTES:

SEE PACM-Pit 1

REV	REVISIONS	DATE	DES BY	DWN BY	REVIEWED AND SIGNED BY

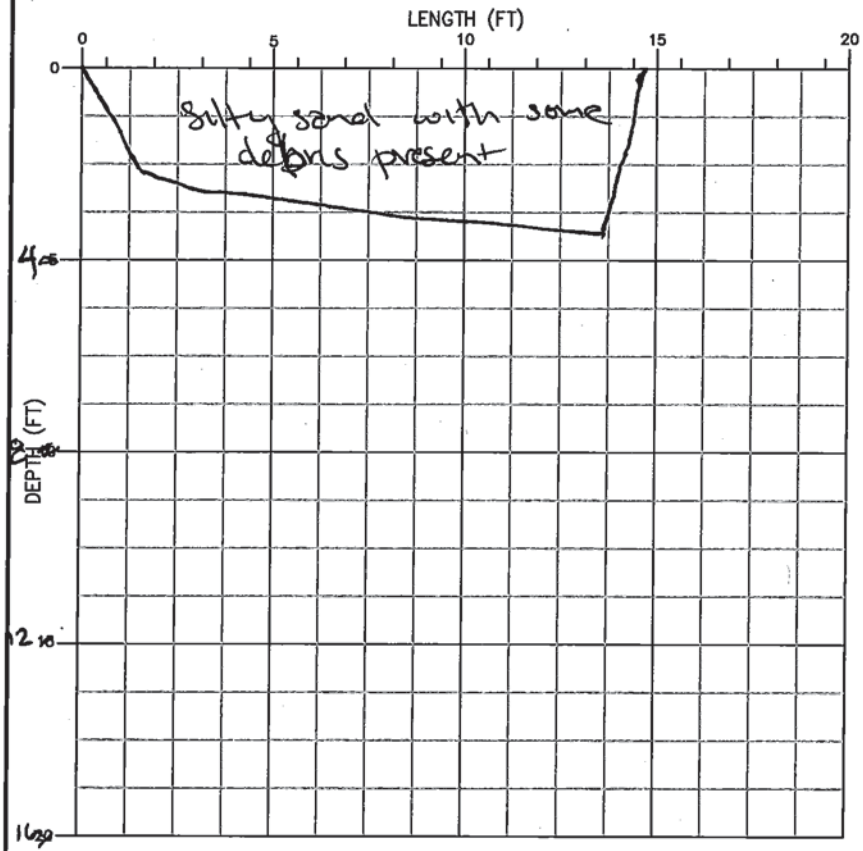
MWH

PROJECT No
FILENAME:
SCALE NOT TO SCALE
FIGURE No

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG

PIT NAME: PACM-Pit 5
GENERAL LOCATION: Pond 1
PIT TREND: NE-SW
PIT FACED LOGGED: SE

DATE: Nov. 14, 2013
FIELD ENGINEER: K. Johnson
EXCAVATOR: Bebe
CONTRACTOR: AMEC



TEST PIT LOG

LEGEND

—— CONTACT

▽ GROUNDWATER LEVEL

SAMPLE No.	DEPTH	TIME

PIT WIDTH: 3.5 ft
PIT LENGTH: 14 ft
PIT DEPTH: 2.5 - 3 ft

SOIL UNIT	SOIL DESCRIPTION AND EXCAVATION NOTES
	Matrix - Same as others. Silty sand, slightly moist, yellow orange. Some cobbles/gravel. Disturbed. Debris - limited, some pipe present.

SPECIAL NOTES:

SEE - PACM - Pit 1

REV	REVISIONS	DATE	DES BY	DWN BY	REVIEWED AND SIGNED BY

MWH

PROJECT No
FILENAME:
SCALE NOT TO SCALE
FIGURE No

TEST PIT LOGS MIDNITE TEMPLATE 2.DWG