

City of Fort Myers, Florida

Engineering Division Stormwater Management P.O. Drawer 2217 Ft. Myers, FL 33902 PH# (239) 321-7630 FAX# (239) 344-594

September 23, 2019

RE: FDEP ID: COM 288039, Response to 9-11-19 Comments

Brian Dougherty
District & Business Support Program, DWM
Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Dougherty,

This letter is a response to the comments received on September 11, 2019 related to the Lime Residuals Removal Report (LRRR), prepared by Black & Veatch (BV), and the Site Assessment Report Addendum (SARA) prepared by GFA International, Inc. (GFA), submitted on June 28, 2019.

Attached are the responses from each of the consultants to the comments in your letter. Please see the attachments for the detailed responses. Comments 1, 4 and 5 are acknowledged by the city and their consultants.

Comment 2 addresses an error in Appendix C of the LRRR. The protocol utilized in the field to determine the lime residual removal was adjusted in the field to fail any sample that formed a ribbon. This was an error in the table of the report that was submitted. BV has submitted a corrected table that is included in their attached letter. A lab analysis was not conducted because the presence of the lime residual in the samples was extremely obvious in the field.

Comment 3 concerns the water quality sampling schedule. GFA recommends quarterly water quality sampling to meet the requirements of 62-780.750 F.A.C. This will be a more cost effective approach for the City of Fort Myers to meet the requirements.

Comment 5 relates to the new wells constructed on the site to replace three of the wells damaged during the excavation process. The wells have been installed and were sampled in July, August and September. The results of the July and August sampling have been previously submitted. The September results will be submitted when received.

Comment 6 addresses two feet of clean fill as an engineering control. Comment 4 recognizes that the soil on the property meets the Soil Cleanup Target Levels (SCTL). There is not a need to have an engineering control for soils meeting the SCTL. If additional fill is brought on the site as part of the final development of the site it will be tested prior to coming on the site by our consultants to ensure that it meets the SCTL. No fill will be brought to the site that hasn't been certified by our consultant.

If you have any other questions or concerns please contact me at (239) 321-7630.

Thank you,

Richard H Thompson, P.E.

City of Fort Myers

Stormwater Resource Manager

Cc Jon Iglehart Scott McManus Michael J. Bland Richard Moulton Mark Martin Saeed Kazemi

Public Works Department Website: <u>www.cityftmyers.com</u> Email: rthompson@cityftmyers.com

ATTACHMENTS

Environmental · Geotechnical · Construction Materials Testing · Threshold and Special Inspections · Plan Review & Code Compliance

September 20, 2019

Mr. Richard Thompson
Stormwater Resource Manager

City of Fort Myers 2200 Second Street Fort Myers, Florida 33901

Re: South Street Property

3348 South Street, Fort Myers, Lee County, Florida Lime Residuals Removal Report, dated June 24, 2019 Site Assessment Report Addendum, dated June 28, 2019 Additional information submitted on August 12, 2019 FDEP Review Letter, dated September 11, 2019

FDEP Site ID#: COM_288039 GFA Project No. 17-4954.00

Dear Mr., Thompson,

GFA International, Inc. reviewed the above referenced letter to the City of Fort Myers, (City) by the Department of Environmental Protection (Department) on September 11, 2019. The following are our responses to the Departments comments.

Department Comment 1.

The lime residual excavation conducted from November 26, 2019, to April 29, 2019, purportedly has removed all the lime residuals from the site. A total of 29,839.5 tons of lime residuals were removed from the site and properly disposed. The use of diagnostic soil texture as a field screening method coupled with laboratory analysis of confirmations samples is an acceptable method under Chapter 62-780, F.A.C.

Response 1.

Acknowledged.

Department Comment 2.

Appendix C pf the LRRR classified every sample as Loamy Sand. It also states that each sample formed a ribbon. This appears to be inconsistent with the "NRCS Approved Method For Soil Texture By Feel" flow chart provided in Appendix B which shows that the only path to the classification of Loamy Sand requires that the soil does not form a ribbon. Please explain this inconsistency. Also, the laboratory analysis of select soil samples to confirm that the ratio of sand, silt and clay fell into the loamy sand category shown in the Soil Textural Triangle diagram provided in Appendix B of the LRRR should have been performed. Please provide this information or explain why this was not done.

Response 2.

See attached letter from Mark Martin of Black & Veatch

201 Waldo Avenue N • Lehigh Acres, Florida 33971 • (239) 489-2443 • (239) 489-3438 (fax) • www.teamgfa.com

Department Comment 3.

The Department has determined that this interim source removal is complete. Monthly groundwater monitoring will need to be continued to demonstrate that there are no remaining lime residuals present in the subsurface that would affect the groundwater. If groundwater monitoring indicates that there are lime residuals still present in the subsurface, a remedial action plan that addresses the remaining lime residuals will be required and submitted to the Department for review.

Response 3:

GFA recommends that the City continue quarterly groundwater monitoring, following the guidance of Ch. 62-780.750 F.A.C., Post Active Remediation Monitoring, to meet regulatory requirements for demonstrating the completeness and effectiveness of the remedial action with respect to potential residual groundwater contamination. Quarterly groundwater monitoring will provide a more cost effective approach than continued monthly monitoring, providing a minimum of four sampling events over one year of data collection, following the removal of lime residuals from the site while obtaining data for seasonal variations.

Ch. 62-780.750(4)(b) states, "The designated monitoring wells shall be sampled quarterly, or at a frequency specified in the Post Active Remediation Monitoring Plan approval, for analyses of contaminants that were present prior to the initiation of active remediation

Ch. 62-780.750(4)(f) states, "A minimum of four groundwater sampling events is required and site rehabilitation shall be considered complete when the No Further Action criteria of subsection 62-780.680(1), 62-780.680(2), or 62-780.680(3), F.A.C., have been met for at least the last two sampling events. However, if contamination was only present in the unsaturated zone during the site assessment and active remediation tasks, site rehabilitation shall be considered complete if the No Further Action criteria of subsection 62-780.680(1), 62-780.680(2), or 62-780.680(3), F.A.C., are met during only one sampling event."

Ch. 62-780.750(6) states, "When post active remediation monitoring is considered complete pursuant to paragraph 62-780.750(4)(f), F.A.C., within the time frames specified in Table A or the CAD the PRSR shall submit to the Department for review an electronic or paper copy of a Site Rehabilitation Completion Report with a No Further Action Proposal."

Department Comment 4.

On June 20, 2019, an additional 17.67 tons of arsenic contaminated soil were removed from three areas on the site and properly disposed. Confirmation soil sampling has demonstrated that there is no remaining soil contamination above the Department's Soil Cleanup Target Levels near the surface of the site.

Response 4.

Acknowledged.

Department Comment 5.

The Department understands that the City intends to install additional monitoring wells and conduct additional testing. The Department concurs that additional monitoring wells and additional testing are necessary to determine the effect of source removal on groundwater quality.

Response 5.

Acknowledged. On July 22. 2019, GFA International, Inc. installed three replacement monitor wells, MWR-1, MWR-5, and MWR-6, at the approximate locations of former monitor wells MW-1/1R, MW-5 and MW-6, as approved by the Department. Results of July and August groundwater monitoring reported concentrations of arsenic below laboratory method detection levels at MWR-5 and MWR-6, and estimated concentrations of arsenic at MWR-1 were reported to be 0.00206 mg/l and 0.00754 mg/l, below the Departments groundwater cleanup target level.

Department Comment 6.

The two feet of clean fill being used as an engineering control will need to be certified by a Florida-registered Professional Engineer that to the best of his or her knowledge the engineering control is consistent with commonly accepted engineering practices, is appropriately designed and constructed for its intended purpose, and has been implemented as designed. An engineering control maintenance and monitoring plan will also be needed.

Response 6:

The Department recognized in *Comment 4* that there is no remaining soil contamination above the Department's Soil Cleanup Target Levels (SCTL). Since it has been demonstrated that the site meets the SCTL and the Department concurs, there is no need for the two foot clean soil cover as an engineering control.

Should you have any questions or require further assistance, please do not hesitate to contact the undersigned at (239) 489-2443.

Best Regards,

GFA INTERNATIONAL, INC.

Scott A. McManus, P.G.

Environmental Professional/Environmental Department Manager

State of Florida, Professional Geologist #2651





City of Fort Myers Fort Myers South Street Lime Residuals Removal B&V Project 196779 B&V File 32.0000 September 13, 2019

Mr. Richard Thompson City of Fort Myers 2200 Second Street Fort Myers, Florida 33901

Subject: Lime Residuals Removal Report

Dear Mr. Thompson:

We are in receipt of a letter from FDEP, dated September 11, 2019, regarding the Lime Residuals Removal Report (LRRR) for the South Street Property. While FDEP has determined that interim source removal of the lime residuals is complete, item #2 in the letter noted an inconsistency between the soil texture test results (Appendix C) and the NRCS Approved Method for Soil Texture by Feel flow chart (Appendix B). We have reviewed and determined that we mistakenly included an incorrect version of Appendix C in the LRRR. The correct version of Appendix C is attached to this letter and indicates that the soil did not ribbon and is all classified as loamy sand.

A laboratory analysis of the soil, to confirm the classification, was not performed because a field soil texture test was sufficient to differentiate between the soil and lime residuals. The project field representative performed ribbon tests on all soil samples as a normal field practice and the difference between the soil and lime residuals was obvious by sight and touch.

If you have any questions, please contact me at (239) 703-8294.

Very truly yours, BLACK & VEATCH

Mark E. Martin, P.E. Project Manager

Mark E. Marto

Soil Texture Test Results

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
A4E	Yes	Yes	No	Loamy Sand	No
A5E	Yes	Yes	No	Loamy Sand	No
A6E	Yes	Yes	No	Loamy Sand	No
A7E	Yes	Yes	No	Loamy Sand	No
A8E	Yes	Yes	No	Loamy Sand	No
A9E	Yes	Yes	No	Loamy Sand	No
A10E	Yes	Yes	No	Loamy Sand	No
A11E	Yes	Yes	No	Loamy Sand	No
A12	Yes	Yes	No	Loamy Sand	No
B3E	Yes	Yes	No	Loamy Sand	No
B4	Yes	Yes	No	Loamy Sand	No
B5	Yes	Yes	No	Loamy Sand	No
B6	Yes	Yes		•	
			No	Loamy Sand	No
B7	Yes	Yes	No	Loamy Sand	No
B8	Yes	Yes	No	Loamy Sand	No
B9	Yes	Yes	No	Loamy Sand	No
B10	Yes	Yes	No	Loamy Sand	No
B11	Yes	Yes	No	Loamy Sand	No
B12S	Yes	Yes	No	Loamy Sand	No
C2S	Yes	Yes	No	Loamy Sand	No
C3	Yes	Yes	No	Loamy Sand	No
C4	Yes	Yes	No	Loamy Sand	No
C5	Yes	Yes	No	Loamy Sand	No
C6	Yes	Yes	No	Loamy Sand	No
C7	Yes	Yes	No	Loamy Sand	No
C8	Yes	Yes	No	Loamy Sand	No
C9	Yes	Yes	No	Loamy Sand	No
C10	Yes	Yes	No	Loamy Sand	No
C11	Yes	Yes	No	Loamy Sand	No
C12S	Yes	Yes	No	Loamy Sand	No
D1S	Yes	Yes	No	Loamy Sand	No
D2	Yes	Yes	No	Loamy Sand	No
D3	Yes	Yes	No	Loamy Sand	No
D4	Yes	Yes	No	Loamy Sand	No
D5	Yes	Yes	No	Loamy Sand	No
D6	Yes	Yes	No	Loamy Sand	No
D7	Yes	Yes	No	Loamy Sand	No
D8	Yes	Yes	No	Loamy Sand	No
D9	Yes	Yes	No	Loamy Sand	No
D10	Yes	Yes	No	Loamy Sand	No
D10	Yes	Yes	No	Loamy Sand	No
D12S	Yes	Yes	No	Loamy Sand	No
E1S	Yes	Yes	No	Loamy Sand	No
E13	Yes	Yes	No	Loamy Sand	No
E3	Yes	Yes	No	· · · · · · · · · · · · · · · · · · ·	
E3				Loamy Sand	No
	Yes	Yes	No	Loamy Sand	No
E5	Yes	Yes	No	Loamy Sand	No
E6	Yes	Yes	No	Loamy Sand	No
E7	Yes	Yes	No	Loamy Sand	No
E8	Yes	Yes	No	Loamy Sand	No
E9	Yes	Yes	No	Loamy Sand	No
E10	Yes	Yes	No	Loamy Sand	No
E11	Yes	Yes	No	Loamy Sand	No

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
E12S	Yes	Yes	No	Loamy Sand	No
F1s	Yes	Yes	No	Loamy Sand	No
F2	Yes	Yes	No	Loamy Sand	No
F3	Yes	Yes	No	Loamy Sand	No
F4	Yes	Yes	No	Loamy Sand	No
F5	Yes	Yes	No	Loamy Sand	No
F6	Yes	Yes	No	Loamy Sand	No
F7	Yes	Yes	No	Loamy Sand	No
F8	Yes	Yes	No	Loamy Sand	No
F9	Yes	Yes	No	· · · · · · · · · · · · · · · · · · ·	No
F10	Yes	Yes	No	Loamy Sand	No
F10				Loamy Sand	
	Yes	Yes	No	Loamy Sand	No
F12	Yes	Yes	No	Loamy Sand	No
G1S	Yes	Yes	No	Loamy Sand	No
G2	Yes	Yes	No	Loamy Sand	No
G3	Yes	Yes	No	Loamy Sand	No
G4	Yes	Yes	No	Loamy Sand	No
G5	Yes	Yes	No	Loamy Sand	No
G6	Yes	Yes	No	Loamy Sand	No
G7	Yes	Yes	No	Loamy Sand	No
G8	Yes	Yes	No	Loamy Sand	No
G9	Yes	Yes	No	Loamy Sand	No
G10	Yes	Yes	No	Loamy Sand	No
G11	Yes	Yes	No	Loamy Sand	No
G12N	Yes	Yes	No	Loamy Sand	No
H1S	Yes	Yes	No	Loamy Sand	No
H2	Yes	Yes	No	Loamy Sand	No
Н3	Yes	Yes	No	Loamy Sand	No
H4	Yes	Yes	No	Loamy Sand	No
H5	Yes	Yes	No	Loamy Sand	No
H6	Yes	Yes	No	Loamy Sand	No
H7	Yes	Yes	No	Loamy Sand	No
Н8	Yes	Yes	No	Loamy Sand	No
Н9	Yes	Yes	No	Loamy Sand	No
H10	Yes	Yes	No	Loamy Sand	No
H11	Yes	Yes	No	Loamy Sand	No
H12N	Yes	Yes	No	Loamy Sand	No
I1S	Yes	Yes	No	Loamy Sand	No
12	Yes	Yes	No	Loamy Sand	No
13	Yes	Yes	No	Loamy Sand	No
14	Yes	Yes	No	Loamy Sand	No
15	Yes	Yes	No	Loamy Sand	No
16	Yes	Yes	No	Loamy Sand	No
17	Yes	Yes	No	Loamy Sand	No
18	Yes	Yes	No	Loamy Sand	No
19	Yes	Yes	No	Loamy Sand	No
110	Yes	Yes	No	Loamy Sand	No
l11	Yes	Yes	No	Loamy Sand	No
112	Yes	Yes	No	Loamy Sand	No
J1S	Yes	Yes	No	Loamy Sand	No
J2	Yes	Yes	No	Loamy Sand	No
J3	Yes	Yes	No	Loamy Sand	No
J4	Yes	Yes	No	Loamy Sand	No
J5	Yes	Yes	No	Loamy Sand	No
				·	
J6	Yes	Yes	No	Loamy Sand	No

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
J7	Yes	Yes	No	Loamy Sand	No
18	Yes	Yes	No	Loamy Sand	No
J9	Yes	Yes	No	Loamy Sand	No
J10	Yes	Yes	No	Loamy Sand	No
J11	Yes	Yes	No	Loamy Sand	No
J12S	Yes	Yes	No	Loamy Sand	No
K1S	Yes	Yes	No	Loamy Sand	No
K13	Yes	Yes	No	Loamy Sand	No
K3	Yes	Yes	No	•	No
				Loamy Sand	
K4	Yes	Yes	No	Loamy Sand	No
K5	Yes	Yes	No	Loamy Sand	No
K6	Yes	Yes	No	Loamy Sand	No
K7	Yes	Yes	No	Loamy Sand	No
K8	Yes	Yes	No	Loamy Sand	No
К9	Yes	Yes	No	Loamy Sand	No
K10	Yes	Yes	No	Loamy Sand	No
K11	Yes	Yes	No	Loamy Sand	No
K12S	Yes	Yes	No	Loamy Sand	No
L1S	Yes	Yes	No	Loamy Sand	No
L2	Yes	Yes	No	Loamy Sand	No
L3	Yes	Yes	No	Loamy Sand	No
L4	Yes	Yes	No	Loamy Sand	No
L5	Yes	Yes	No	Loamy Sand	No
L6	Yes	Yes	No	Loamy Sand	No
L7	Yes	Yes	No	Loamy Sand	No
L8	Yes	Yes	No	Loamy Sand	No
L9	Yes	Yes	No	Loamy Sand	No
L10	Yes	Yes	No	Loamy Sand	No
L11	Yes	Yes	No	Loamy Sand	No
L12S	Yes	Yes	No	Loamy Sand	No
M1S	Yes	Yes	No	Loamy Sand	No
M2	Yes	Yes	No	Loamy Sand	No
M3	Yes	Yes	No	Loamy Sand	No
M4	Yes	Yes	No	Loamy Sand	No
M5	Yes	Yes	No	Loamy Sand	No
M6	Yes	Yes	No	Loamy Sand	No
M7	Yes	Yes	No	Loamy Sand	No
M8	Yes	Yes	No	Loamy Sand	No
M9	Yes	Yes	No	Loamy Sand	No
M10	Yes	Yes	No	Loamy Sand	No
M11	Yes	Yes	No	Loamy Sand	No
M12	Yes	Yes	No	Loamy Sand	No
	Yes	Yes	No	· · · · · · · · · · · · · · · · · · ·	No
N1S N2	Yes	Yes		Loamy Sand	
			No	Loamy Sand	No
N3	Yes	Yes	No	Loamy Sand	No
N4	Yes	Yes	No	Loamy Sand	No
N5	Yes	Yes	No	Loamy Sand	No
N6	Yes	Yes	No	Loamy Sand	No
N7	Yes	Yes	No	Loamy Sand	No
N8	Yes	Yes	No	Loamy Sand	No
N9	Yes	Yes	No	Loamy Sand	No
N10	Yes	Yes	No	Loamy Sand	No
N11	Yes	Yes	No	Loamy Sand	No
N12	Yes	Yes	No	Loamy Sand	No
018	Yes	Yes	No	Loamy Sand	No

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
02	Yes	Yes	No	Loamy Sand	No
03	Yes	Yes	No	Loamy Sand	No
04	Yes	Yes	No	Loamy Sand	No
05	Yes	Yes	No	Loamy Sand	No
06	Yes	Yes	No	Loamy Sand	No
07	Yes	Yes	No	Loamy Sand	No
08	Yes	Yes	No	Loamy Sand	No
09	Yes	Yes	No	Loamy Sand	No
010	Yes	Yes	No	Loamy Sand	No
010	Yes	Yes	No	·	No
O12N				Loamy Sand	
	Yes	Yes	No	Loamy Sand	No
P1S	Yes	Yes	No	Loamy Sand	No
P2	Yes	Yes	No	Loamy Sand	No
P3	Yes	Yes	No	Loamy Sand	No
P4	Yes	Yes	No	Loamy Sand	No
P5	Yes	Yes	No	Loamy Sand	No
P6	Yes	Yes	No	Loamy Sand	No
P7	Yes	Yes	No	Loamy Sand	No
P8	Yes	Yes	No	Loamy Sand	No
P9	Yes	Yes	No	Loamy Sand	No
P10	Yes	Yes	No	Loamy Sand	No
P11	Yes	Yes	No	Loamy Sand	No
P12	Yes	Yes	No	Loamy Sand	No
Q1S	Yes	Yes	No	Loamy Sand	No
Q2	Yes	Yes	No	Loamy Sand	No
Q3	Yes	Yes	No	Loamy Sand	No
Q4	Yes	Yes	No	Loamy Sand	No
Q5	Yes	Yes	No	Loamy Sand	No
Q6	Yes	Yes	No	Loamy Sand	No
Q7	Yes	Yes	No	Loamy Sand	No
Q8	Yes	Yes	No	Loamy Sand	No
Q9	Yes	Yes	No	Loamy Sand	No
Q10	Yes	Yes	No	Loamy Sand	No
Q11	Yes	Yes	No	Loamy Sand	No
Q12	Yes	Yes	No	Loamy Sand	No
R1	Yes	Yes	No	Loamy Sand	No
R2	Yes	Yes	No	Loamy Sand	No
R3	Yes	Yes	No	Loamy Sand	No
R4	Yes	Yes	No	Loamy Sand	No
R5	Yes	Yes	No	Loamy Sand	No
R6	Yes	Yes	No	Loamy Sand	No
R7	Yes	Yes	No	Loamy Sand	No
R8	Yes	Yes	No	Loamy Sand	No
R9	Yes	Yes	No	Loamy Sand	No
R10	Yes	Yes	No	Loamy Sand	No
R11	Yes	Yes	No	Loamy Sand	No
R12	Yes	Yes	No	Loamy Sand	No
S1			No	Loamy Sand	
S2	Yes	Yes Yes	No	· · · · · · · · · · · · · · · · · · ·	No No
	Yes			Loamy Sand	No
S3	Yes	Yes	No	Loamy Sand	No
S4	Yes	Yes	No	Loamy Sand	No
S5	Yes	Yes	No	Loamy Sand	No
S6	Yes	Yes	No	Loamy Sand	No
S7	Yes	Yes	No	Loamy Sand	No
S8	Yes	Yes	No	Loamy Sand	No

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
S9	Yes	Yes	No	Loamy Sand	No
S10	Yes	Yes	No	Loamy Sand	No
S11	Yes	Yes	No	Loamy Sand	No
S12	Yes	Yes	No	Loamy Sand	No
T1N	Yes	Yes	No	Loamy Sand	No
T2	Yes	Yes	No	Loamy Sand	No
T3	Yes	Yes	No	Loamy Sand	No
T4	Yes	Yes	No	Loamy Sand	No
T5	Yes	Yes	No	•	No
				Loamy Sand	
T6	Yes	Yes	No	Loamy Sand	No
T7	Yes	Yes	No	Loamy Sand	No
T8	Yes	Yes	No	Loamy Sand	No
T9	Yes	Yes	No	Loamy Sand	No
T10	Yes	Yes	No	Loamy Sand	No
T11	Yes	Yes	No	Loamy Sand	No
T12	Yes	Yes	No	Loamy Sand	No
U1N	Yes	Yes	No	Loamy Sand	No
U2	Yes	Yes	No	Loamy Sand	No
U3	Yes	Yes	No	Loamy Sand	No
U4	Yes	Yes	No	Loamy Sand	No
U5	Yes	Yes	No	Loamy Sand	No
U6	Yes	Yes	No	Loamy Sand	No
U7	Yes	Yes	No	Loamy Sand	No
U8	Yes	Yes	No	Loamy Sand	No
U9	Yes	Yes	No	Loamy Sand	No
U10	Yes	Yes	No	Loamy Sand	No
U11	Yes	Yes	No	Loamy Sand	No
U12N	Yes	Yes	No	Loamy Sand	No
V1N	Yes	Yes	No	Loamy Sand	No
V2	Yes	Yes	No	Loamy Sand	No
V3	Yes	Yes	No	Loamy Sand	No
V4	Yes	Yes	No	Loamy Sand	No
V5	Yes	Yes	No	Loamy Sand	No
V6	Yes	Yes	No	Loamy Sand	No
V7	Yes	Yes	No	Loamy Sand	No
V8	Yes	Yes	No	Loamy Sand	No
V9	Yes	Yes	No	Loamy Sand	No
V10	Yes	Yes	No	Loamy Sand	No
V11	Yes	Yes	No	Loamy Sand	No
V12N	Yes	Yes	No	Loamy Sand	No
W1	Yes	Yes	No	Loamy Sand	No
W2	Yes	Yes	No	Loamy Sand	No
W3	Yes	Yes	No	Loamy Sand	No
W4	Yes	Yes	No	Loamy Sand	No
W5	Yes	Yes	No	Loamy Sand	No
W6	Yes	Yes	No	Loamy Sand	No
W7		Yes	No	•	
	Yes			Loamy Sand	No
W8	Yes	Yes	No	Loamy Sand	No
W9	Yes	Yes	No	Loamy Sand	No
W10	Yes	Yes	No	Loamy Sand	No
W11	Yes	Yes	No	Loamy Sand	No
W12N	Yes	Yes	No	Loamy Sand	No
X1	Yes	Yes	No	Loamy Sand	No
X1S	Yes	Yes	No	Loamy Sand	No
X2	Yes	Yes	No	Loamy Sand	No

Sample ID	Does it Ball?	Remain in ball when squeezed?	Does it Ribbon?	Classification	Visible Sludge?
Х3	Yes	Yes	No	Loamy Sand	No
X4	Yes	Yes	No	Loamy Sand	No
X5	Yes	Yes	No	Loamy Sand	No
X6	Yes	Yes	No	Loamy Sand	No
X7	Yes	Yes	No	Loamy Sand	No
X8	Yes	Yes	No	Loamy Sand	No
X9	Yes	Yes	No	Loamy Sand	No
X10	Yes	Yes	No	Loamy Sand	No
X11	Yes	Yes	No	Loamy Sand	No
X12N	Yes	Yes	No	Loamy Sand	No
Y1	Yes	Yes	No	Loamy Sand	No
Y1	Yes	Yes	No	Loamy Sand	No
Y2E	Yes	Yes	No	Loamy Sand	No
Y3E	Yes	Yes	No	Loamy Sand	No
Y4E	Yes	Yes	No	Loamy Sand	No
Y5E	Yes	Yes	No	Loamy Sand	No
Y6E	Yes	Yes	No	Loamy Sand	No
Y7E	Yes	Yes	No	Loamy Sand	No
Y8E	Yes	Yes	No	Loamy Sand	No
Y9E	Yes	Yes	No	Loamy Sand	No
Y10E	Yes	Yes	No	Loamy Sand	No
Y11E	Yes	Yes	No	Loamy Sand	No
Y12N	Yes	Yes	No	Loamy Sand	No