MAUL FOSTER ALONGI
1329 North State Street, Suite 301 | Bellingham, WA 98225 | 360 594 6262 | www.maulfoster.com

September 28, 2017
Project No. 1268.02.01

Stephen Taylor
McLucas & Associates, Inc.
P.O. Box 5352
Lacey, Washington 98509

Re: Observation Well Installation
Lake Erie Pit Expansion
Skagit County, Washington

Dear Mr. Taylor:

Maul Foster & Alongi, Inc. (MFA) has prepared this letter report describing the drilling and installation of an observation well at the Lake Erie Pit located near Anacortes, Washington (the site) (Figure 1). MFA understands that McLucas & Associates, Inc.'s (MAI's) client, Lake Erie Pit 1, LLC (Lake Erie Pit), operates a permitted sand and gravel quarry (the mine) at the site and recently submitted a Mining Special Use Permit application (with components prepared by MFA on behalf of MAI, including a hydrogeologic assessment) to Skagit County (the County) to expand the mineral resource overlay zoning. MFA also understands that MAI has been notified by the County that the owner of an adjacent property, on which Devil's Elbow Lake (the lake) is located, is concerned that expansion of the mine may lower water levels in the lake.

To address the adjacent property owner's concern, MFA recommended that an observation well be installed to verify hydrogeologic conditions and a groundwater surface elevation in the south portion of the site between the existing mine and the lake. This letter report presents MFA's observations and findings during the drilling and installation of the observation well and expands upon the findings of our prior hydrogeologic assessment (MFA, 2016).

BACKGROUND

The site is located near 13540 Rosario Road, Anacortes, Washington in the southeast quarter of the northwest quarter of section 11, township 34 north, range 1 east, Willamette Meridian (see Figure 1). Lake Erie Pit is applying for a Mining Special Use Permit from the County for the development of the following tax parcels as a surface mine for aggregate resources: P19161, P19164, P19158, P90028, and P19155.

The mine will be dry mined using standard surface mining equipment (i.e., front end loaders and excavators). The mined sand and gravel will be loaded into trucks and transported off the site. The maximum floor depth of the mine is proposed to be no lower than an elevation of

250 feet above mean sea level (msl) and will not extend below 10 feet above the seasonal high groundwater table beneath the site.

MFA prepared a hydrogeologic assessment (MFA, 2016) as part of the Mining Special Use Permit application. A groundwater surface elevation beneath the site was inferred from water levels observed in nearby wells. The inferred groundwater surface elevation was approximately 50 feet or more below the proposed maximum mine floor elevation of 250 feet msl (MFA, 2016). However, the assessment did not identify any water wells located between the mine and the lake. Further, the potential presence of a perched water-bearing zone in the area between the mine and the lake could not be verified. It is MFA's understanding that the adjacent property owner was concerned that a perched water-bearing zone may be present and, if encountered during mining operations, could lower water levels in the lake. Therefore, an observation well was installed to evaluate the potential presence of a perched water-bearing zone and verify the groundwater surface elevation beneath the site.

WELL DRILLING OBSERVATIONS

Lake Erie Pit contracted Aquatech Well Drilling and Pumps, Inc. (Aquatech) of Sedro-Woolley, Washington to drill and install the observation well. MFA observed the drilling and documented subsurface conditions and well installation and construction details. Mr. Andy Dunn of RH2 Engineering, Inc., a representative of the adjacent property owner, was also on site to observe the first day of drilling.

Aquatech drilled the observation well (Washington State Department of Ecology Well ID BJF-103) on September 18 and 19, 2017. The well was drilled using a GEFCO Speedstar 30K air rotary rig. Using a tri-cone bit, Aquatech advanced a 10-inch diameter steel casing from ground surface to approximately 18 feet below ground surface (bgs) and then advanced a 6-inch diameter steel casing to approximately 277 feet bgs. A bentonite surface seal was installed between the 6-inch and 10-inch casings and then the 10-inch casing was removed. The well was completed as a cased well with an open bottom (i.e., no screen or perforated liner). The ground surface elevation next to the well was measured using a Trimble Geo7X GPS and was determined to be approximately 445.6 feet above msl.

FINDINGS

Sand, gravel, and silt were encountered during drilling (see attached geologic log). The upper approximately 35 feet were interpreted to be glacial till due to the presence of fines and larger diameter gravel, and possibly cobbles, in that section. The underlying differentiated unconsolidated material (i.e., sand, gravel, and silt) is interpreted to be glacial outwash deposits.

A moist sand unit was encountered between approximately 57 and 130 feet bgs. However, no perched water was encountered. The sand and gravel units underlying the moist sand remained

dry until approximately 180 feet bgs. At that depth, the lithology became moist as it changed to sand with silt (180 to 189 feet bgs). At approximately 190 feet bgs, the drillers began to add water to the boring in order to remove fines adhered to the casing. Therefore, from that point forward, moisture observations varied between moist to wet depending on the amount of water being added. However, the driller's observations did not identify a substantial water-bearing zone.

Following completion of the well, a water level was measured at approximately 263 feet bgs. However, the water level may have been influenced by the addition of water during drilling. Therefore, another water level was measured by Aquatech on September 23, 2017; the measured value was 255.4 feet bgs. Based on the measured ground surface elevation, the water level is equivalent to a groundwater surface elevation of 190.2 feet above msl. Based on the lithology encountered in the boring, groundwater appears to be present in an unconfined aquifer.

The measured groundwater elevation is consistent with the inferred groundwater elevation presented in the hydrogeologic assessment (MFA, 2016). Devil's Elbow Lake, which is located approximately 560 feet to the south, has an approximate surface elevation of 363 feet above msl. The lake's surface elevation is comparable to approximately 83 feet bgs in the well boring. Although the sand unit encountered between 57 and 130 feet bgs was observed to be moist, a perched water-bearing zone was not encountered. Further, the lithology remained dry sand and gravel to a depth of approximately 180 feet bgs. These observations indicate that a hydraulic connection does not exist between the lake and the lithologic units proposed to be mined.

The groundwater surface elevation beneath the site (see Figure 1) is inferred to range from approximately 180 to 200 feet above msl with groundwater flowing beneath the site generally toward the north-northeast. Groundwater elevations beneath the site are inferred to be approximately 60 to 70 feet below the proposed maximum mine floor elevation of 250 feet above msl. (see Figure 2).

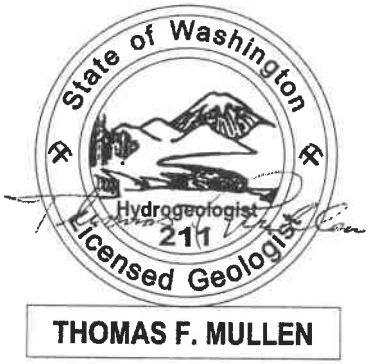
CONCLUSIONS

The drilling and installation of an observation well at the Lake Erie Pit determined that groundwater underlying the site is present in an unconfined aquifer at approximately 190 feet above msl. The groundwater elevation measured in the well was approximately 60 feet below the proposed maximum mine floor elevation of approximately 250 feet above msl. No perched water-bearing zones were identified during drilling at depths comparable to the surface elevation of Devil's Elbow Lake. Consistent with the findings of the hydrogeologic assessment (MFA, 2016), groundwater beneath the site is inferred to flow north-northeast and ultimately to discharge to Lake Erie. Groundwater is also inferred to be approximately 60 to 70 feet below the planned total mining depth.

Hydrogeologic observations collected during drilling did not indicate the potential for a hydraulic connection between the lithologic units proposed to be mined and the lake. Therefore, it does not appear that expansion of the Lake Erie Pit will affect water levels in the Devil's Elbow Lake.

Sincerely,

Maul Foster & Alongi, Inc.



09.28.2017

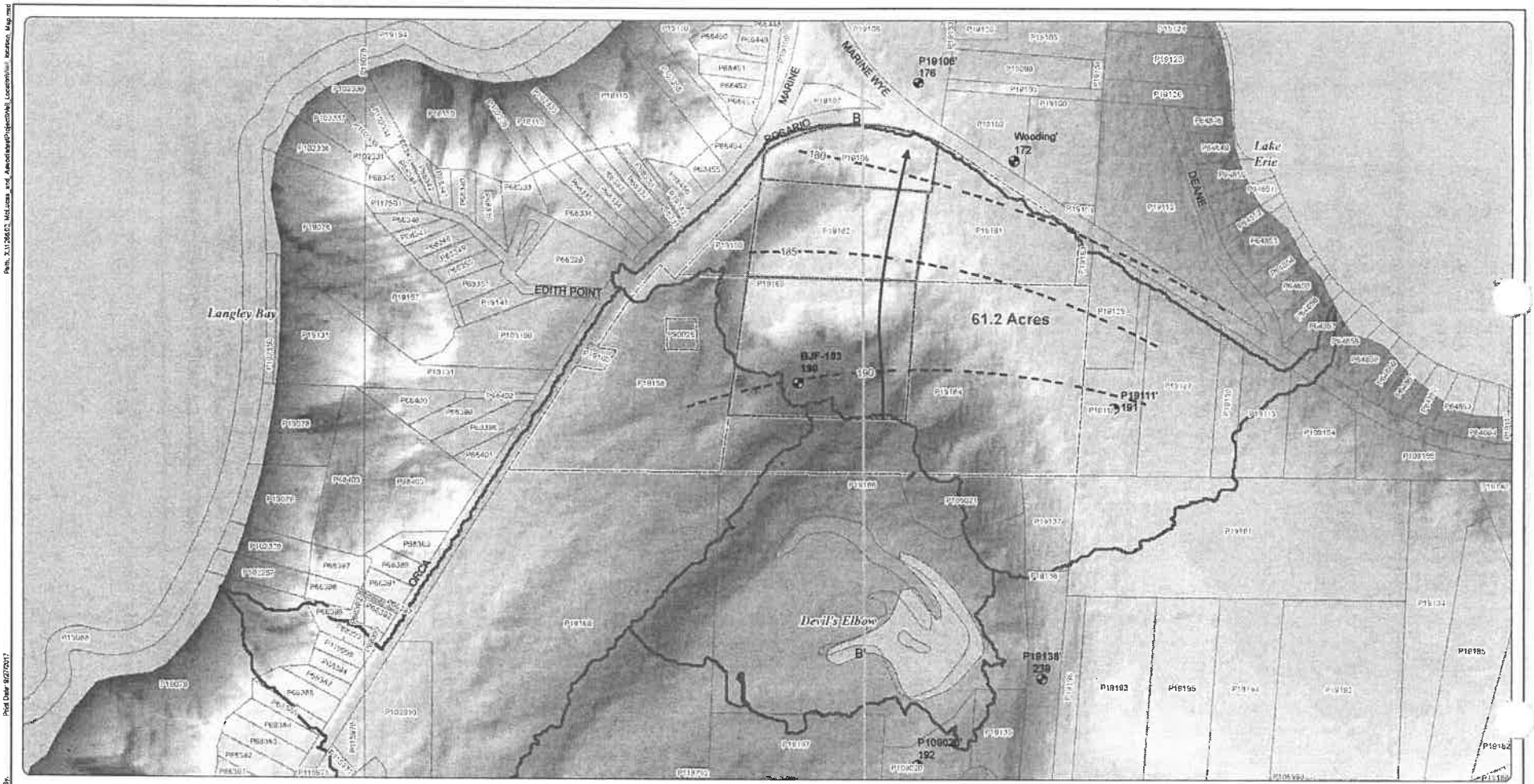
Thomas F. Mullen, LHG
Senior Hydrogeologist

Attachments: Limitations
Reference
Figures
Attachment—Geologic Borehole Log/Well Construction

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.



Source: LiDAR derived contours from USGS 2006.
Storm Event provided from NOAA Atlas 2 Precipitation Frequency Estimates.

Notes:
1. MSL= Mean Seal Level.

Inferred Groundwater Flow Direction

Legend

- Inferred — *Inferred Groundwater Surface Elevation Contour (MSL)*
- Well — *Parcel Number MSL*
- Cross Section Transect
- Site Drainage Divide
- Current Permitted Parcels
- Expansion Parcels
- Parcels

Elevation (Feet MSL)

Value

- High : 1270.8
- Low : -6.7

Figure 1
Well Location Map
Lake Erie Pit Mine
Anacortes, Washington

0 200 400
Feet

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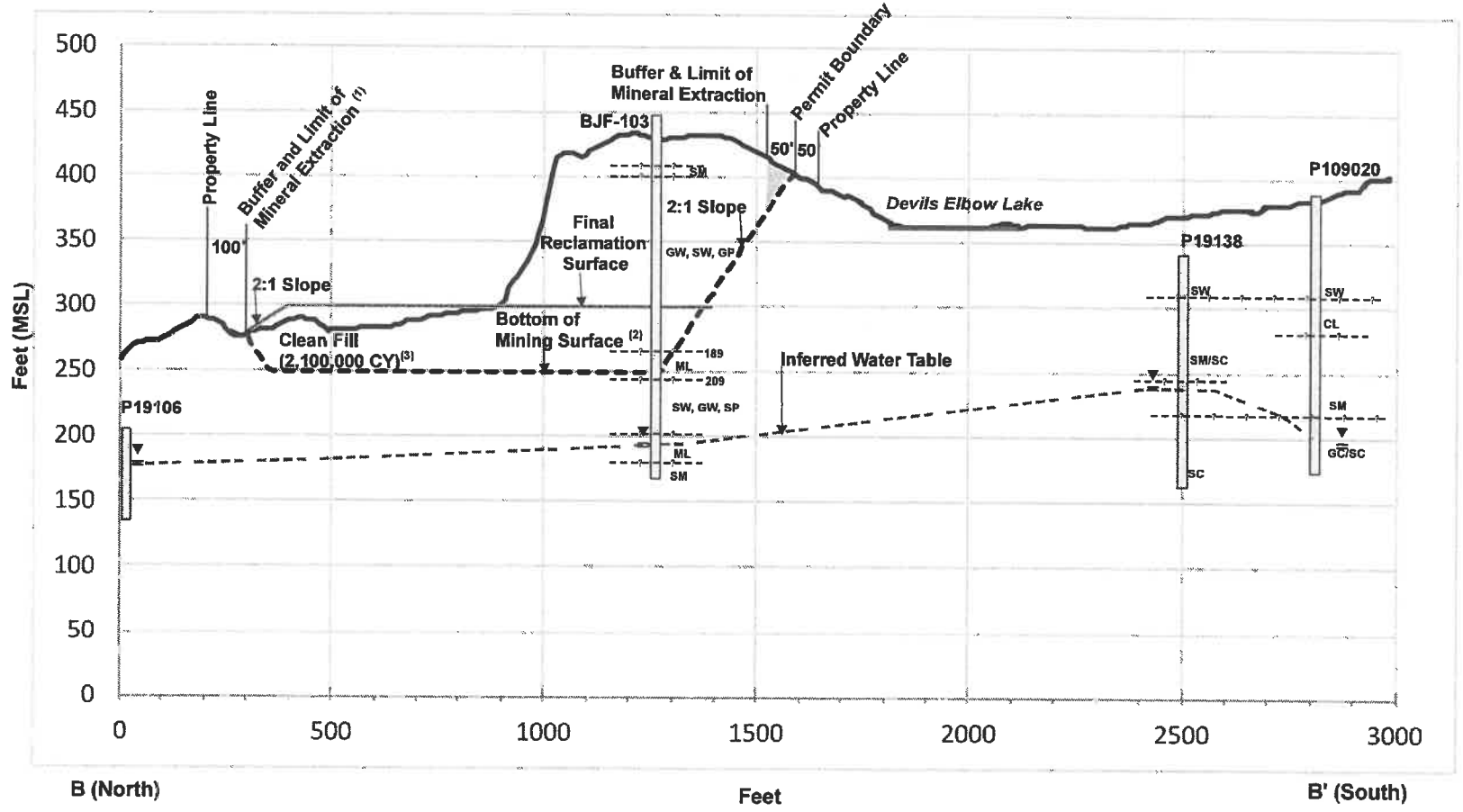
Path: X:\1364.03_McLucas_and_Associates\Projects\Well_Location_Map.mxd
Plot Date: 8/27/2017
Produced By: sstenschoger Approved By:
Project:



Note:
1. (1) 100-ft setback to final reclamation surface is only applicable to Parcel 18108. All other parcels will maintain a 50-ft setback to final reclamation surface.
2. (2) Mine to 10 Feet Above Water Table
3. (3) Mine floor raised to 300 feet with 85% compaction
4. MSL= Mean Seal Level.
5. CY= cubic yards

Geologic Materials:
1. CL = Clay
2. GC= Clayey Gravel
3. SC = Clayey Sand
4. SM = Silty Sand
5. SW = Well Graded Sand
6. GW = Well Graded Gravel
7. ML = Silt
8. SP = Poorly Graded Sand

Existing Grade Boundary

Area to be Regraded at Final Reclamation

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Figure 2
B-B' Cross Section

Lake Erie Pit Mine
Anacortes, Washington

ATTACHMENT

GEOLOGIC BOREHOLE LOG/WELL CONSTRUCTION

Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	1 of 13

Project Name	Lake Erie Pit	TOC Elevation (feet)	448.422
Project Location	Anacortes, WA	Surface Elevation (feet)	445.6
Start/End Date	9/18/17 to 9/19/17	Northing	533988.8
Driller/Equipment	Aquatech Well Drilling & Pumps/Star 30K	Easting	1199026.1
Geologist/Engineer	H. Good/C. Wise	Hole Depth	277.0-feet
Sample Method	Air Rotary	Outer Hole Diam	6-inch

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
1–20									0 to 3.0 feet: SAND with GRAVEL (SW); light brown; 5% fines; 85% sand, fine to medium, very loose; 10% gravel, rounded, 1- to 2-inch-diameter; non-plastic; non-cohesive; dry.
									3.0 to 27.0 feet: GRAVELLY SAND (SW); gray; 5% fines; 75% sand, fine to medium, very loose; 20% gravel, rounded, 1- to 2-inch-diameter; trace 3- to 4-inch-diameter, rounded gravel; dry.
15									@ 15.0 feet: less gravel present.

NOTES: See last page of boring log.

▽ **Water level at 264.2 feet bgs after inner casing was pulled from well. Water level may be the result of water added to well.**

▼ **Water level at 263.1 feet bgs after allowing the well to recharge for 10 minutes. Water level may be the result of water added to well.**

⧩ **Water level at 255.40 feet below ground surface on 9/23/17 at 9 AM.**

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	2 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
21–42									27.0 to 30.0 feet: SANDY GRAVEL (GW); gray; 5% fines; 35% sand, fine to medium, very loose; 60% gravel, medium, rounded; trace 3- to 4-inch-diameter rounded gravel; dry.
									30.0 to 35.0 feet: GRAVELLY SAND (SW); gray; 5% fines; 75% sand, fine to medium, very loose; 20% gravel, 1- to 2-inch-diameter, rounded; dry.
									35.0 to 42.0 feet: GRAVELLY SAND (SW); dark gray to brown; 80% sand, medium, very loose; 20% gravel, 1- to 2-inch-diameter, rounded; dry.
									42.0 to 46.0 feet: GRAVELLY SAND (SW); dark gray; 5% fines; 75% sand, fine to medium, very loose; 20% gravel, 1- to

NOTES: See last page of boring log.

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	3 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
44									2-inch-diameter, rounded; dry.
45									
46									
47									46.0 to 49.0 feet: GRAVELLY SAND (SW); dark gray to brown; 80% sand, medium, very loose; 20% gravel, 1- to 2-inch-diameter, rounded; dry.
48									
49									
50									49.0 to 53.0 feet: SILTY SAND (SM); light gray; 35% fines, low plasticity; 60% sand, fine, loose; 5% gravel, 1- to 2-inch-diameter, rounded; dry.
51									
52									
53									
54									53.0 to 60.0 feet: SAND with SILT (SW-SM); gray; 15% fines, low plasticity; 75% sand, medium, loose; 10% gravel, 1- to 3-inch-diameter, rounded; dry to moist.
55									
56									
57									@ 57.0 feet: moist.
58									
59									
60									60.0 to 65.0 feet: SAND with GRAVEL (SW): dark gray to brown; 5% fines, non-plastic; 80% sand, medium to coarse, loose; 15% gravel, fine, rounded; moist.
61									
62									
63									
64									
65									65.0 to 100.0 feet: SAND with GRAVEL (SW); dark gray to brown; 90% sand, medium, loose; 10% gravel, 1- to 2-inch-diameter, rounded;

NOTES: See last page of boring log.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	4 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Sample Data: Percent Recovery	Sample Data: Collection Method	Sample Data: Number	Sample Data: Name (Type)	Sample Data: Blows/6"	Lithologic Column	Soil Description
66									moist.
67									
68									
69									
70									
71									
72									
73									
74									
75									
76									
77									
78									
79									
80									
81									
82									
83									
84									
85									
86									
87									
88									

NOTES: See last page of boring log.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	5 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
89–111									100.0 to 125.0 feet: SAND with GRAVEL (SW); dark gray to brown; 90% sand, medium to coarse, loose; 10% gravel, 1- to 3-inch-diameter, subangular to rounded; moist.

NOTES: See last page of boring log.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	6 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
112–133									125.0 to 130.0 feet: SAND with GRAVEL (SP); dark gray to brown; 95% sand, medium, loose; 5% gravel, 1- to 2-inch-diameter, rounded; moist.
									130.0 to 140.0 feet: GRAVEL with SAND (GW); dark gray to brown; 20% sand, fine to medium, loose; 80% gravel, 1- to 3-inch-diameter, subangular to rounded; dry.

NOTES: See last page of boring log.

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	7 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
135									
136									
137									
138									
139									
140									
141									140.0 to 150.0 feet: GRAVEL with SAND (GP); gray to dark grayish-brown; 10% sand, medium to coarse; 90% gravel, 1- to 2-inch-diameter, subangular to rounded; loose; dry.
142									
143									
144									
145									
146									
147									
148									
149									
150									150.0 to 155.0 feet: GRAVELLY SAND (SW); dark gray to brown; 60% sand, medium to coarse; 40% gravel, 1- to 2-inch-diameter, subangular to rounded; loose; dry.
151									
152									
153									
154									
155									
156									155.0 to 160.0 feet: GRAVEL with SAND (GP); gray to dark grayish-brown; 10% sand, medium to coarse; 90% gravel, 1 to 2-inch diameter, subangular to rounded; loose; dry.

NOTES: See last page of boring log.

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▼ **Water level at 255.40 feet below ground surface on 9/23/17 at 9 AM.**

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	8 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Sample Data: Percent Recovery	Sample Data: Collection Method	Sample Data: Number	Sample Data: Name (Type)	Sample Data: Blows/6"	Lithologic Column	Soil Description
157									
158									@ 158.0 feet: more gravel chips.
159									
160									160.0 to 165.0 feet: SAND with GRAVEL (SW); brown; 90% sand, medium, loose; 10% gravel, 2- to 3-inch-diameter, subrounded to rounded; dry.
161									
162									
163									
164									
165									165.0 to 168.0 feet: SAND (SW); 100% sand, medium to coarse; trace medium gravel; loose; moist.
166									
167									
168									168.0 to 170.0 feet: GRAVEL with SAND (GW); light gray; 20% sand, fine to medium; 80% gravel, 1- to 4-inch-diameter, subrounded to rounded; loose; dry.
169									
170									170 to 173.0 feet: SAND (SW); 100% sand, medium to coarse; trace medium gravel; loose; dry.
171									
172									
173									173.0 to 175.0 feet: GRAVEL with SAND (GW); gray; 20% sand, fine to medium; 80% gravel, fine to coarse, 1- to 2-inch-diameter, subrounded to rounded; loose; dry.
174									
175									175.0 to 177.0 feet: GRAVELLY SAND (SW); grayish-brown; 80% sand, medium to coarse; 20% gravel, fine to medium, subrounded to rounded; loose; dry.
176									
177									177.0 to 180.0 feet: SANDY GRAVEL (GW); reddish-brown; 20% sand, medium to coarse; 80% gravel, fine to medium, subrounded to rounded; sand and gravel coated with fine reddish-brown sand; dry.
178									
179									

NOTES: See last page of boring log.

▽ **Water level at 264.2 feet bgs after inner casing was pulled from well. Water level may be the result of water added to well.**

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	9 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
180									180.0 to 189.0 feet: SAND with SILT (SW-SM); light brown; 10% fines, soft; 80% sand, very fine to fine; 10% gravel, fine; trace fine, rounded gravel; moist.
181									
182									
183									
184									
185									
186									
187									
188									
189									189.0 to 200.0 feet: SANDY SILT (ML); light brown; 80% fines, low plasticity; 20% sand, very fine to fine; soft; moist.
190									@ 190.0 feet: Drillers began adding water into casing to allow finer materials to move through the casing.
191									
192									
193									
194									
195									
196									
197									
198									
199									
200									200.0 to 209.0 feet: SILT (ML); blue; 95% fines, medium plasticity; 5% sand, very fine; soft; moist.
201									
202									

NOTES: See last page of boring log.

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Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	10 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
203									
204									
205									
206									
207									
208									
209									209.0 to 212.0 feet: SAND with GRAVEL (SW); grayish-brown; 5% fines; 85% sand, fine to medium, angular to subangular; 10% gravel, fine, angular to subangular; moist to wet.
210									
211									
212									212.0 to 220.0 feet: SANDY GRAVEL (GW); brown; 40% sand, fine to coarse, angular to subangular; 50% gravel, fine to medium, angular to subangular; moist to wet.
213									
214									
215									
216									
217									
218									
219									
220									220.0 to 240.0 feet: SAND with GRAVEL (SP); light brown; 90% sand, very fine to fine; 10% gravel, fine, angular to subangular; increase in fine sand with depth; moist to wet.
221									
222									
223									
224									

NOTES: *See last page of boring log.*

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	11 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
225									
226									
227									
228									
229									
230									
231									
232									
233									
234									
235									
236									
237									
238									
239									
240									240.0 to 257.0 feet: SAND with SILT (SP-SM); light brown; 10% fines; 90% sand, very fine; moist to wet.
241									
242									
243									
244									
245									
246									
247									

NOTES: See last page of boring log.

▽ **Water level at 264.2 feet bgs after inner casing was pulled from well. Water level may be the result of water added to well.**

▼ **Water level at 263.1 feet bgs after allowing the well to recharge for 10 minutes. Water level may be the result of water added to well.**

▼ **Water level at 255.40 feet below ground surface on 9/23/17 at 9 AM.**

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	12 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
248									
249									
250									
251									
252									
253									
254									
255									
256									
257									
258									257.0 to 260.0 feet: SILT (ML); blue; 100% fines, medium plasticity; soft to firm; moist to wet.
259									
260									
261									260.0 to 270.0 feet: SILT (ML); gray; 90% fines, medium plasticity; 5% sand, very fine; 5% gravel, very fine, angular to subangular; very soft; trace woody debris; moist to wet.
262									
263									
264									
265									
266									
267									
268									
269									
270									

NOTES: See last page of boring log.

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Maul Foster & Alongi, Inc.

Geologic Borehole Log/Well Construction

Project Number	Well Number	Sheet
1268.02.01	MW01	13 of 13

Depth (feet, BGS)	Well Details	Sample Data: Interval	Percent Recovery	Collection Method	Number	Name (Type)	Blows/6"	Lithologic Column	Soil Description
271									270.0 to 277.0 feet: SILTY SAND (SM); light brown; 15% fines, soft; 85% sand, very fine to fine, angular to subangular; trace woody debris; moist to wet.
272									@ 272.0 feet: 1-foot lens of silt with sand.
273									
274									
275									
276									
277									

Total Depth = 277.0 feet bgs.

Borehole Completion Details:
0 to 18.0 feet bgs: 10-inch borehole.
18.0 to 277.0 feet bgs: 6-inch borehole.
0 to 18.0 feet bgs: bentonite chips hydrated with potable water.
18.0 to 277.0 feet bgs: slough.

Well Completion Details:
2.80 to 0 feet above ground surface: 6-inch-diameter, steel pipe.
0 to 276.6 feet bgs: 6-inch-diameter, steel pipe.
276.6 to 277.0 feet bgs: 6-inch-diameter tapered drill bit.

Ecology Well Tag No. = BJF-103

Notes: 1. bgs = below ground surface. 2. Monitoring well installed using 4.5-inch drill rod with 5.875-inch tri-cone drill bit. 3. Ten-inch-diameter hole to 18 feet bgs and 6-inch-diameter hole from 18 to 277 feet bgs. 4. At approximately 190 feet bgs, drillers began adding water into casing to allow finer soils to move through the casing. 5. Drillers noted a significant water-bearing zone was not encountered. Moisture content between 190 and 277 feet bgs, is the result of water added and removed by the drillers and potentially saturated lenses of soils.

NOTES: See last page of boring log.

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