N2688-VN-20190313



## State of Michigan

## DEPARTMENT OF ENVIRONMENTAL QUALITY

**JACKSON DISTRICT OFFICE** 



LIESL EICHLER CLARK
DIRECTOR

SRN: N2688, Washtenaw County

March 14, 2019

## <u>CERTIFIED MAIL- 7017 3380 0000 4105 8353</u> <u>RETURN RECEIPT</u>

Mr. Anthony Falbo, Senior Vice President-Operations Fortistar Methane Group Arbor Hills Energy LLC 10611 West Five Mile Road Northville, Michigan 48167

Dear Mr. Falbo:

## **VIOLATION NOTICE**

On January 18, 23 and 29, 2019, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), conducted an inspection of Advanced Disposal Services, Arbor Hills Landfill Inc. (ADS) located at 10690 West Six Mile Road, Northville Michigan. The purpose of this inspection was to determine the ADS's compliance with the requirements of the federal Clean Air Act; Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451) and the associated Air Pollution Control Rules, the conditions of Renewable Operating Permit (ROP) number MI-ROP-N2688-2011a; and Permit to Install (PTI) permits 19-17B & 79-17.

During the inspection and subsequent records review, AQD staff observed the following relevant to Fortistar Methane Group-Arbor Hills Energy LLC (Company) whom are the contracted operators of the landfill gas collection system and part of the same stationary source as ADS:

	Rule/Permit	
Process Description	Condition Violated	Comments
Municipal solid waste landfill. (MSWL)	ROP Emission Unit EULANDFILL- S2 S.C. V.1.; Standards of Performance for New Stationary Sources-Subpart WWW MSWL (WWW) 40 CFR 60.753(d); National Emissions Standards for Hazardous Air Pollutants (NESHAP)-Subpart MSWL (AAAA) 40 CFR 63.1955(a)(1).	Quarterly landfill surface methane scans are inadequate. See Note [1].
Gas Collection and Control System (GCCS)	ROP Emission Unit EUACTIVECOLL-S2 S.C. VI.1. and 3. WWW 40 CFR 60.755(a)(3) and (5).	4 <sup>th</sup> Quarter 2018 Gas Collection NSPS Well Report shows noncompliance with out of range NSPS well

		operating parameters. See Note [2].
GCCS	ROP Emission Unit EUACTIVECOLL-S2 S.C. IX.3.; WWW 40 CFR 60.755(a)(3) & (5), AAAA 40 CFR 63.1955.	Failure to submit timely ACT requests for out of range NSPS well operating parameters when well field expansion is not appropriate. Also see Note [2].
GCCS	WWW 40 CFR 60.759; NESHAP 40 CFR 63.6(e)(1)(i).	GCCS wells impaired due to high liquid levels or otherwise compromised. See Note [3].

Note [1] Quarterly surface methane scans reported on by the Company failed to indicate if areas of distressed vegetation, cracks, or seeps in the cover were investigated beyond the prescribed path of the scan, despite monthly landfill cover integrity inspections highlighting numerous such areas. Also, the scans consistently avoided active areas on the landfill that could have been easily traversed during off-hours. Finally, the pathways that were followed during the scans appears to only be depicted as approximations on landfill maps despite having the ability to use GPS technology to accurately depict locations traversed.

Note [2] 4<sup>th</sup> Quarter 2018 Gas Collection NSPS Well Exceedances Report shows numerous wells exceeding required NSPS landfill gas collection operating parameters at the conclusion of the reporting period. The NSPS requires that exceedances of the gas collection control system (GCCS) wellhead monitoring parameters (temperature, oxygen, and pressure) are corrected within 15 calendar days, the GCCS is expanded within 120 days or an alternative compliance timeline (ACT) request be submitted. The Company in conjunction with ADS has failed to be timely with ACT requests. This is a reoccurring problem. See Attachment (1) for details.

Note [3] NSPS Subpart WWW requires proper well design to properly handle water/leachate condensate in landfill gas wells. NESHAP Subpart AAAA requires owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Report on liquid level in gas wells was submitted by ADS for well data obtained in September 2018. Leachate in the landfill gas wells impairs functionality of gas extraction. The design for vertical gas extraction wells includes an estimated radius of influence (ROI) which is based in part on the length of perforated pipe available for gas flow. A substantially flooded well will be limited in its ROI and this will lead to gaps in gas collection coverage.

Liquid level data of 215 wells was available for September 2018. Of those 215, 151 wells had more than 50% of the perforated well screen portion of the well submerged in liquid. Of those 151, 75 wells were more than 75% blocked and 35 wells were fully saturated with liquid. This even though many of the wells are equipped with pumps to remove the leachate. Good engineering practices note that no more than 25% of the well screen should be covered in water. The well data shows that overall, the effectiveness of the entire landfill gas collection system has been significantly degraded by this problem. See Attachment (2). The table was constructed based on liquid levels measured by the Company. The liquid levels were measured from the top of the wells using a liquid level indicator meter. The % open screen was calculated

based on available well construction records. (Note that the U.S. Environmental Protection Agent-Region V (EPA) reported that as of September 29, 2016, 70 wells had more than 50% of the perforated well screen portion of the well submerged by leachate which shows that the problem of saturated landfill gas wells has increased since that time.)

Liquid levels for the gas wells listed in Attachment (2) raises concerns about the functionality of these gas wells. Many of the wells listed also exhibit high methane concentrations (over 55%) along with notes indicating that the valve is 100% open. This is a strong indication that liquid levels are impeding gas collection. In addition, even if the wells with high liquid levels appear to be productive currently, the long-term presence of liquids can contribute to fouling of the stone and well screen, reducing the effectiveness of these wells over time. The Company, in conjunction with ADS, should immediately begin evaluating the gas wells listed in Attachment (2) to determine which wells warrant the installation of pumps or to identify other appropriate corrective actions.

Although Attachment (2) lists gas wells that may already have pumps, many of these wells still exhibited elevated liquid levels. There is concern on whether the pumps and force mains are effective for allowing adequate dewatering of these wells. While it is understood that some liquid recharge in the wells would occur during the liquid level gauging activities, it would not be expected to see this level of flooding in this number of wells where pumps were already in place. The Company, in conjunction with ADS, should conduct an evaluation of the gas wells listed in Attachment (2) to ensure that the installed pumps are functional, that the pump's discharge capacity is adequate to conduct effective dewatering, and that the force main for the pump discharge is not obstructed. The Company, in conjunction with ADS, should also evaluate the wells for which well screen saturation information was not provided to the DEQ.

The following gas wells appear to be pinched or otherwise significantly obstructed based on information received from the Company:

AHW223R4, AHWW261R, AHWW265R, AHWW0281, AHWW0303, AHWW0334, AHWW0416, AHWW0421, AHWW0422, AHEW028M, AHWW0278, AHWW251R, AHWW273R, AHWW0289, AHWW0305, AHEW026M, AHEW031M, AHC4W107, AH146AR2.

The Company, in conjunction with ADS should conduct an evaluation for these wells to determine which are no longer viable based on the depth of the pinch/obstruction and the available gas quality/vacuum/flow data, etc.

Please initiate actions necessary to correct the cited violations and submit a written response to this Violation Notice by April 4, 2019. The written response should include: the dates the violations occurred; an explanation of the causes and duration of the violations; whether the violations are ongoing; a summary of the actions that have been taken and are proposed to be taken to correct the violations and the dates by which these actions will take place; and what steps are being taken to prevent a reoccurrence.

Please submit written response to the DEQ, AQD Jackson District, at 301 East Louis B Glick Highway Jackson, Michigan 49201 and submit copy to Ms. Jenine Camilleri, Enforcement Unit Supervisor at the DEQ, AQD P.O. Box 30260, Lansing, Michigan 48909-7760.

Please note that as of the date of this letter, most of the violations cited in Violation Notice (VN) dated August 28, 2018 and VN dated February 2, 2019 remain unresolved.

If the Company believes the above observations or statements are inaccurate or do not constitute violations of the applicable legal requirements cited, please provide appropriate factual information to explain your position.

Thank you for your attention to resolving the violations cited above. If you have any questions regarding the violations or the actions necessary to bring this facility into compliance, please contact me at the number listed below.

Sincerely,

Mike Kovalchick

Senior Environmental Engineer

mike Kovalchick

Air Quality Division

517-416-5025

cc: Mr. Scott Miller, DEQ

cc/via e-mail: Ms. Suparna Chakladar, FORTISTAR

Mr. Jay Waszinski, ADS

Mr. Mark Johnson, ADS

Ms. Sarah Marshall, USEPA

Mr. Nathan Frank, USEPA

Mr. Kenneth Ruffatto, USEPA

Ms. Mary Ann Dolehanty, DEQ

Dr. Jay Olaguer, DEQ

Mr. Chris Ethridge, DEQ

Ms. Jenine Camiliari, DEQ

Mr. Jeff Rathbun, DEQ

Ms. Diane Kavanaugh Vetort, DEQ

Ms. Ambrosia Brown, DEQ

Attachment (1)
4<sup>th</sup> Quarter 2018 Gas Collection NSPS Well Exceedances Report

Well ID	From	То	Parameter	Notes
AHEW0044*	6/12/2018	End of Quarter	Excess O2	Well valve barely open. ADS say problem due to inoperable dewatering pump. Remedy okay but ACT denied.
AHEW00AA*	6/25/2018	End of Quarter	Excess 02	Well sounding only 11 feet. Remote well head. Well valve barely open. Installed under over-liner at Arbor Hills East. ADS submitted request on January 25, 2019 to decommission well.
AHEW032R	11/2/2018	End of Quarter	Excess O2	Surging in header. 36 feet well sounding with 18.9 feet of leachate. Remedy okay but ACT denied.
AHEW046R*	6/12/2018	End of Quarter	Excess O2	Well valve barely open, well sounding 43 feet with 28.7 feet of leachate. ADS say problem due to inoperable dewatering pump. Remedy okay but ACT denied.
AHEW0ABR*	6/25/2018	End of Quarter	Excess O2	Well sounding only 12 feet. Remote well. Installed under over-liner at Arbor Hills East. ADS submitted request on January 25, 2019 to decommission well.
AHEW78BR	10/3/2018	End of Quarter	Excess O2	Remedy okay but ACT denied.
AHEWRW05	9/14/2018	End of Quarter	Excess O2	Surging in header, Well valve barely open.
AHW0264R*	4/4/2017	End of Quarter	Excess O2	Suring in header. Well sounding only 6.5 feet. ADS say they now have fixed problem by replacing dewatering pump.
AHW259R2	10/26/2018	End of Quarter	Excess Temp	Well valve 100% open. Well sounding 45 feet.
AHWW0176	10/10/2018	End of Quarter	Excess O2	Well sounding 145 feet with 82 feet of leachate. Remedy okay but ACT denied.

AHWTR024	10/4/2018	End of Quarter	Excess O2	
AHWW0262* & ***	9/17/2018	End of Quarter	Excess O2	Well sounding 31 feet with 15.6 feet of leachate. Needs dewatering pump. Remedy okay but ACT denied.
AHWW0290*	1/11/2018	End of Quarter	Excess** Temp	Well sounding 150 feet with 34.2 feet of leachate. ADS to make waiver request.
AHWW0297	10/09/2018	End of Quarter	Excess** Temp	Well sounding 115 feet with 39.6 feet of leachate.
AHWW0299*	5/14/2018	End of Quarter	Excess** Temp	Well valve 100% open. Well sounding 92 feet with 9.8 feet of leachate. ADS to make waiver request.
AHWW0301*	5/14/2018	End of Quarter	Excess** Temp	ADS to make waiver request.
AHWW0302*	5/31/2018	End of Quarter	Excess** Temp	Well sounding 90.1 feet with 15 feet of leachate. ADS to make waiver request.
AHWW0305	10/10/2018	End of Quarter	Excess O2	Well sounding only 12 feet-pinched.
AHWW0308	11/12/2018	End of Quarter	Excess O2	Well valve barely open. Well sounding only 5 feet-pinched. Remedy okay but ACT denied.
AHWW0311	10/09/2018	End of Quarter	Excess** Temp	Well sounding 120 feet with 28.5 feet of leachate.
AHWW0312*	6/21/2018	End of Quarter	Excess** Temp	Well sounding 126 feet with 41 feet of leachate. ADS to make waiver request.
AHWW0315	11/06/2018	End of Quarter	Excess O2 & Temp**	Well sounding 150 feet with 96.4 feet of leachate. ACT for Temp approved but O2 unresolved.
AHWW0323*	4/10/2018	12/17/2018	Positive Pressure	Installed replacement lateral pipe to fix problem.
AHWW0329*	8/6/2018	11/7/2018	Excess O2	Retuned well to fix problem.
AHWW0423*	9/5/2018	End of Quarter	Excess O2,	Well sounding 66 feet with 6 feet of leachate. Replaced lateral. ADS

			positive pressure	plan to pull then reinstall dewatering pump by end of February.
AHWW0425	8/16/2018	End of Quarter	Excess O2	Surging in header. Well sounding 27 feet with 10 feet of leachate. Remedy okay but ACT denied.
AHWW0500*	7/23/2018	End of Quarter	Excess O2	Well sounding only 11.5 feet with 2.5 feet of leachate. ADS say need to install force main to location and install dewatering pump to be completed by end of March.
AHWW0501***	11/13/2018	End of Quarter	Excess O2	Surging in header. Well sounding 23 feet with 18.5 feet of leachate.
AHWW0507*	9/11/2018	End of Quarter	Excess O2	ADS say they need to install force main to location and install dewatering pump to be completed by end of March.
AHWW257R	9/25/2018	End of Quarter	Excess O2	Surging in header. Well sounding 55.9 feet with 27.7 feet of leachate.
AHWW258R*	Previous Quarter	End of Quarter	Excess O2 & Temp**	Well sounding 150 feet with 71 feet of leachate. Applying for exemption for Temp.
AHWW285R*	5/31/2018	End of Quarter	Excess** Temp	Well sounding 86 feet with 13 feet of leachate. Applying for exemption for Temp.
AHWW286R*	5/31/2018	End of Quarter	Excess** Temp	Well valve 100% open. Well sounding 150 feet with 85.4 of leachate. Applying for exemption for Temp.
AHWWHW11*	1/15/2018	End of Quarter.	Excess O2.	Horizontal well. Camera confirmed excess liquids. Surging conditions. Can't install dewatering pump since horizontal and there are other competing wells nearby, so ADS made request to decommission well which was approved.

<sup>\*</sup> Already Cited in VN for 3<sup>rd</sup> Quarter 2018. \*\* ADS applying for variance for temperature exceedances in top of landfill area due to special waste generating heat at depth. \*\*\*Wells that appear to be located under surface geomembrane liner.

Attachment (2)
September 2018 Landfill Gas Collection Well Liquid Levels

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHEW058R	9/14/2018	64.38%	Υ
AHEW062R	9/15/2018	83.58%	Υ
ALIEVAGOED	0/45/0040	70.040/	
AHEW065R	9/15/2018	72.34%	Y
AHEW066R	9/15/2018	101.35%	Υ
AHEWUOOR	9/13/2010	101.35%	I
AHEW067R	9/14/2018	71.23%	Υ
AILVVOOTI	3/14/2010	77.2078	<u> </u>
AHEW072R	9/13/2018	77.78%	Υ
	V 10/2010		
AHEW0ABR	9/29/2018	110.00%	N
AHEW15R2	9/13/2018	57.00%	Υ
	Supplier Supplier	1900 00 00 00 00 00 00 00 00 00 00 00 00	
AHEW19R2	9/13/2018	24.00%	Υ
AHEW30R2	9/14/2018	17.00%	Υ
AHEW47R2	9/14/2018	26.00%	N
m steps a			
AHEW50R2	9/15/2018	53.00%	<u>Y</u>
AHEW57R2	9/14/2018	68.00%	Y
		======	
AHEW60R2	9/14/2018	70.90%	Y
ALIENOADO	0/4/4/00/40	00.0404	
AHEW61R2	9/14/2018	36.94%	<u>Y</u>
AUEWGAAD	0/45/2049	69.89%	v
AHEW64AR	9/15/2018	09.89%	Y
AHEW64R2	9/15/2018	103.03%	N
71111404112	0/10/2010	100.0070	1 1 1

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHWW0416	9/28/2018	50.62%	N
5.2			
AHWW0417	9/28/2018	65.75%	N
AHWW0418	9/28/2018	-3.67%	N
AHWW0422	9/27/2018	46.18%	N
ALBARAGAGE	0/00/0040	00.070/	
AHWW0425	9/28/2018	22.27%_	Y
AHW145R2	9/19/2018	64.00%	Υ
ARW 145RZ	9/19/2010	64.00%	T T
AHW146R2	9/13/2018	111.45%	N
Anwitone	3/13/2010	777.4370	IV
AHW148BR	9/19/2018	62.41%	Υ
AHW149R3	9/19/2018	78.00%	Υ
AHW153R2	9/18/2018	83.00%	Υ
AHW169R2	8/30/2018	56.36%	Υ
AHW171R3	9/18/2018	57.00%	N
AHW172R2	9/19/2018	9.00%	N
AHW174R3	9/29/2018	25.00%	N
ALBAKOOD :	0/00/00/10	00.000	
AHW196R4	9/29/2018	99.00%	Υ
A L/\\(\(107\)\(200)	0/00/0040	04.050/	V
AHW197R3	9/28/2018	94.85%	Υ
AHW198R3	9/29/2018	118.00%	Υ
ALIVI 1901/3	312312010	110.00%	

AHEW68AR	9/15/2018	52.00%	Υ
		1000	
AHEW71AR	9/15/2018	54.00%	Υ
		SHAP SHAP	
AHÉW71R2	9/18/2018	81.00%	Y
AHEW78BR	9/13/2018	90.00%	Υ
Page 1 State of			
AHWW0413	9/19/2018	67.10%	N
AHWW0414	9/19/2018	41.67%	N
AHWW0415	9/28/2018	· 64.95%	N

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHW220R2	8/30/2018	75.89%	Υ
AHW221R3	8/30/2018	84.22%	Υ
A 1 11 A 10 CO CO A		=0.0004	
AHW222R4	9/19/2018	59.00%	N
ALDAGOADO	9/18/2018	EE 000/	
AHW224R3	9/10/2016	55.00%	Y
AHW225R3	9/29/2018	126.00%	· N
74111722010	0/20/2010	120.0070	
AHW226R2	9/18/2018	75.00%	Υ
AHW227R2	9/18/2018	87.79%	Y
		4.3	
AHW228R3	9/18/2018	97.00%	N
AHW229R2	9/18/2018	55.00%	Υ
4	0.000000		
AHW230R2	9/18/2018	65.00%	Y
AHEW0080	9/14/2018	220 959/	Y
ALEVVOUSO	9/14/2018	229.85%	Y

AHW200R2	9/19/2018	66.00%	Y
AHW201R2	9/19/2018	73.00%	Υ
AHW203R3	9/19/2018	67.00%	N
AHW204R2	8/31/2018	98.00%	Υ
AHW205R2	9/13/2018	61.00%	N
AHW211R2	8/31/2018	76.00%	Υ
10 (2) (3) (3)			
AHW213R2	8/31/2018	49.00%	Υ
AHW217R2	8/30/2018	74.85%	Υ

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHW259R2	9/13/2018	-43.00%	N
AHWW0427	9/28/2018	116.00%	Υ
AHWW0501	9/28/2018	232.00%	Υ
AHWW0428	9/28/2018	115.00%	Υ
AHWW0426	9/28/2018	56.00%	N
AHWW0424	9/28/2018	48.73%	N
AHWW0500	9/28/2018	212.00%	Υ
AHWW0241	9/13/2018	42.72%	Υ
AHWW0256	9/13/2018	96.92%	Υ
AHWW0262	9/28/2018	129.17%	N
AHWW0266	9/18/2018	21.30%	N <sup>*</sup>

AHEW031R	9/14/2018	83.00%	Υ
AHW231R4	9/18/2018	51.55%	N
AHW232R2	9/18/2018	50.81%	Υ
AHW233R2	9/19/2018	87.00%	N
AHW234R2	9/15/2018	67.68%	N
AHW235R3	9/18/2018	68.44%	<u> </u>
A L NA (0.0.7.D.O.	0/04/00/0	00.0001	
AHW237R3	8/31/2018	80.00%	N
A L IVA (0.47 D.0	0/40/0040	72.000/	V
AHW247R2	9/13/2018	73.00%	Y
AHW248R2	9/13/2018	100.59%	Y
AHVVZ4ORZ	3/13/2010	100.3978	
AHW249R2	9/13/2018	74.00%	Y
711002-10102	0/10/2010	- <del>- 7,00</del> 70	•
AHW253R2	9/13/2018	69.00%	N
AHW254R2	9/18/2018	77.00%	Ν
AHW255R2	9/13/2018	72.00%	N

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHWW0290	9/19/2018	8.00%	N
AHWW0294	9/19/2018	33.00%	N
AHWW0295	9/25/2018	46.00%	N
AHWW0296	9/19/2018	61.00%	Ν
AHWW0297	9/19/2018	51.00%	N

AHWW0267	9/18/2018	96.00%	N
AHWW0269	9/15/2018	66.79%	<u>N</u>
A I DANA (00.75	0/40/0040	445 470/	N.I.
AHWW0275	9/18/2018	145.17%	N
AHWW0276	9/18/2018	44.35%	N
7 (11000002)	0/10/2010	77.0070	
AHWW0278	9/18/2018	112.74%	N
AHWW0279	9/13/2018	0.00%	N
AHWW0280	9/15/2018	18.57%	N
1300,3120,325	04404040	00000	
AHWW0281	9/18/2018	82.00%	N
AHWW0282	9/18/2018	92.88%	N
74.1444402.02	0/10/2010	02.0070	
AHWW0283	9/19/2018	58.00%	N
AHWW0284	9/19/2018	51.00%	N
AHWW0287	9/18/2018	40.00%	N
00001444114	0/40/0040	60 000/	<u> </u>
AHWW0288	9/13/2018	62.00%	Υ
AHWW0289	9/13/2018	89.67%	N

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHWW0325	9/13/2018	273.19%	N
AHWW0326	9/18/2018	79.41%	Υ
AHWW0327	9/28/2018	138.00%	Υ
AHWW148R	9/19/2018	61.00%	Υ
AHWW157R	9/18/2018	54.00%	N

11

AHWW0299	9/19/2018	4.27%	N
AHWW0300	9/19/2018	34.00%	<u> N</u>
AHWW0301	9/19/2018	85.00%	N
ALWAA40202	0/40/0040	60.050/	N.I.
AHWW0302	9/19/2018	69.05%	<u>N</u>
AHWW0303	9/19/2018	130.00%	N
A11000000	3/13/2010	130.0078	IV.
AHWW0304	9/18/2018	61,00%	Υ
700	0.00		•
AHWW0306	9/18/2018	50.96%	N
Complete Complete			
AHWW0307	9/18/2018	57.00%	N
AHWW0308	9/18/2018		N
AHWW0309	8/31/2018	51.00%	N
	- 1/ - / 0 - / 0		
AHWW0311	9/19/2018	60.00%	N
AHWW0312	9/19/2018	100.00%	N
AHVVVU312	9/19/2010	100.00%	IN
AHWW0313	9/18/2018	47.00%	N
7	0, 10,2010		
AHWW0314	9/19/2018	59.00%	N
AHWW0315	9/15/2018	30,54%	Ν
AHWW0316	9/15/2018	3.00%	N
AHWW0317	9/18/2018	55.00%	N
AHWW0322	9/18/2018	70.00%	Y
A L NA 0 4 10 0 0 4	014010040	050.000/	-
AHWW0324	9/13/2018	258.38%	N

AHWW163R	8/30/2018	38.30%	N
AHWW167R	8/30/2018	52.00%	N
	7.0		
AHWW207R	9/13/2018	56.89%	Υ
AHWW212R	8/31/2018	87.00%	Υ
AHWW214R	8/31/2018	53.00%	Ν
AHWW239R	8/31/2018	39.00%	Υ
6.0			
AHWW240R	<u>8/3</u> 1/2018	71.00%	Υ
AHWW252R	9/18/2018	78.81%	Y
AHWW257R	9/18/2018	81.00%	N
AHWW258R	9/18/2018	91.43%	Υ
A L DADA (000D	0/00/00/40	400.000/	
AHWW260R	9/28/2018	106.00%	N
AHWW261R	9/28/2018	133.00%	N.
ANWWZOIR	9/20/2010	133,00%	Ν
AHWW265R	9/29/2018	63.00%	. N
ATTVVVZOSIC	812812010	03.00%	14
AHWW268R	9/29/2018	27.03%	Υ
7 (17777200)	0/20/2010		
AHWW270R	9/28/2018	54.00%	N
,			
AHWW271R	9/18/2018	65.00%	Ν
AHWW273R	9/29/2018	116.65%	N
			100
AHWW274R	9/29/2018	122.45%	N
AHWW277R	9/29/2018	79.00%	N

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHWWTS01	9/13/2018	Data Missing	Υ
			E diverse
AHEW0017	9/13/2018	38.82%	<u> </u>
AL BARA/0000	0/40/0040	400.0404	
AHWW0328	9/18/2018	126.04%	·N
A1 00005	0/40/2040		
AHWW0305	9/18/2018		N
AHW215R2	8/31/2018	E0 00%	
ANVZIORZ	0/31/2010	59.00%	<u>Y</u>
AHW218R2	8/30/2018	76.00%	V
ANVZIONZ	0/30/2010	76.00%	Υ
AHW219R2	8/30/2018	100.73%	Y
Anvvziakz	0/30/2010	100,73%	ĭ
AHWW0333	9/18/2018	60.00%	N
AHVVVOSSS	9/10/2010	00.0078	IN
AHW263R3	9/28/2018	55.00%	Υ
7(177203)(0	0/20/2010	30.0070	
AHWW0329	8/31/2018	51.00%	N
74114446026	0,0 ,,20 ,0	0.0070	
AHW162R2	8/30/2018	46.00%	N
AHWW0338	9/18/2018	82.00%	N
AHWW0337	9/18/2018	82.00%	N
	100000		
AHW175R4	9/29/2018	102.00%	N
AHW202R3	9/19/2018	76.00%	Ν
	343333		
AHWW0400	9/19/2018	Data Missing	N
AHWW0401	9/19/2018	Data Missing	N
AHWW0402	9/19/2018	Data Missing	N

Well ID	Sample Date	Screen Submerged (%)	Pump (Y/N)
AHW250R2	9/13/2018	85.00%	N
ALIC4406A	0/07/0040	220.00%	NI NI
AHC4106A	9/27/2018	230.00%	N
AHWW0404	9/19/2018	Data Missing	N
AIIVVVU404	3/13/2010	iviissirig	11
AHWW0336	9/15/2018	86.00%	N
		Angelia (a tarene)	
AHWW0411	9/28/2018	Data Missing	N
AHWW0429	9/29/2018	4.32%	<u> N</u>
		Data	
AHWW0408	9/19/2018	Missing	N
AHWW0409	9/19/2018	Data Missing	N
1000		D-1	
AHWW0410	9/19/2018	Data Missing	N
AHWW0405	9/28/2018	Data Missing	N
		Data	
AHWW0406	9/19/2018	Missing	Ν
AHWW0407	9/19/2018	Data Missing	N
ALNAMOEGO	0/00/0040	0.4.000/	N.
AHWW0502	9/28/2018	84.00%	N
AHWW0504	9/15/2018	16.67%	N
	10 (2) 10 (2)		

AHWW0403	9/19/2018	Data Missing	N
AHWW0330	9/15/2018	57.00%	N
AHWW0331	9/18/2018	46.00%	Ν
AHWW0332	9/18/2018	77.00%	N.
	a a day day a		
AHWW0334	9/15/2018	51.00%	N