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Technical Memorandum

DATE: April 15, 2022

TO: Tom Buell, Jim Borovich, Hillary Stoll
Nebraska Department of Environment and Energy (NDEE)

FROM: Dan Bigbee

SUBJECT: Task Assignment TA-21-08A/B/C/D
AltEn Ethanol Plant – Environmental Sampling Support
IIS Number: 84069, Program ID: Fast Track
Monitoring Well Installation and Groundwater Sampling

Project Description

EA Engineering, Science, and Technology, Inc., PBC (EA) was contracted by the Nebraska Department of Environment and Energy (NDEE) to install monitoring wells and collect groundwater samples at the AltEn Ethanol Plant (Site) near Mead, NE for analysis for pesticides.

Data Collection

Monday, March 28, 2022

EA arrived at the site at 0815 hours initiate the field work. The following activities were completed.

- Met with the drillers from Plains Environmental Services (PES) and Sadie from New Fields at the AltEn job trailer.
- EA personnel and drilling contractor signed in and discussed parking and logistics and finalized the access plan with all parties.
- Met with Jim Borovich from NDEE on site at 1015 hours.

Groundwater Sampling

- Used access road to reach the top of the berm and the berm was used to navigate to each sample location.
- Driller set up and used direct push technology (DPT) to reach groundwater at each location.
- Each location was flagged and bored to groundwater, EA purged the borehole, and collected groundwater samples in a one (1) liter glass amber bottle for pesticide analysis.
- Each groundwater sample was labeled, placed in a zipper bag, and stored on ice.
- After each groundwater sample was collected, the borehole was abandoned by filling to grade with bentonite.
- All downhole equipment was cleaned and decontaminated between borehole locations.
- SP-8 was purged and a groundwater sample was collected at 1005 hours at approximately 46-50 feet (ft) below ground surface (bgs.)
- SP-7 was purged and a groundwater sample was collected at 1105 hours from approximately 46-50 ft bgs.
- SP-4 was purged and a groundwater sample was collected at 1218 hours from approximately 38-42 ft bgs.
- SP-2 was purged and a groundwater sample was collected at 1453 hours from approximately 46-50 ft bgs.

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- SP-3 was purged and a groundwater sample was collected at 1635 hours from approximately 51-55 ft bgs.
- All downhole equipment was cleaned and decontaminated at the end of the day and stored onsite to continue work for the next day.

All parties signed out at AltEn office and left site at 1723 hours.

Tuesday, March 29, 2022

EA arrived at the site at 0806 hours initiate the field work. The following activities were completed.

- Met with the drillers from PES and New Fields personnel at the AltEn job trailer.
- Met with Jim Borovich from NDEE on site at 0855 hours.
- Met with Tom Buell from NDEE on site at approximately 1100 hours.
- All parties signed in and discussed logistics and access plan for the day.

Groundwater Sampling

- Used access road to reach the top of the berm to navigate to each sample location.
- Driller set up and used DPT to reach groundwater at each location.
- Each location was flagged and drilled to groundwater, and EA purged the borehole and collected a one (1) liter amber groundwater sample for pesticide analysis.
- Each groundwater sample was labeled, placed in a zipper bag, and stored on ice.
- After each groundwater sample was collected, the borehole was abandoned with bentonite to the surface.
- All downhole equipment is cleaned and decontaminated between each borehole location.
- SP-6 was purged and groundwater sample was collected at 0911 hours from approximately 51-55 ft bgs.

Groundwater Monitoring Well Installation

MW-EE1

- Proposed location of MW-EE1 was accessed by trucks only as this location was not accessible by trucks and trailers.
- The drill rig was positioned over the proposed location of MW-EE1 and drilled down to an approximate depth of 53 ft bgs at 1619 hours.
- Groundwater was detected at approximately 48-48.5 ft bgs.
- MW-EE1 Monitoring well installation began at 1633 hours.
- A ten (10) ft screen was set to approximately 43-53 ft bgs and a riser from 43 ft to above the ground surface, and filter pack sand was added to 41 ft bgs or, two (2) ft above the top of the screen.
- 18 bags of bentonite chips, 50 lbs. each, were added to boring annulus up to one (1) ft bgs.
- Excess PVC was cutoff to approximately two (2) ft. above ground surface.
- The following well measurements were taken at 1810 hours:
    - Depth to water: 41.47 ft below top of casing (btoc)
    - Depth to bottom: 54.62 ft btoc
- Investigative-derived waste (IDW) drums were labeled and left on site.

All parties signed out at AltEn office and left site at 1856 hours.

Wednesday, March 30, 2022

EA arrived at the site at 0814 hours initiate the field work. The following activities were completed.

- Met with the drillers from Plains Environmental Services and Sadie from New Fields at the AltEn job trailer.

- Completed safety meeting with PES personnel and developed access plan with Sadie from New Fields.
- Met with Jim Borovich from NDEE on site at 0843 hours.
- Observed PES crew clean and decontaminate all auger equipment, and all water was containerized and labeled as "non-hazardous".

Groundwater Monitoring Well Installation

MW-EE2

- The drill rig was set up at the proposed location for MW-EE2 and began drilling at 1218 hours.
- Drilling was stopped at approximately 44 ft bgs and well screen was installed at 34-44 ft bgs at 1340 hours.
- Filter pack sand was added to two (2) ft above the top of the well screen, or approximately 32 ft bgs.
- 13 bags of bentonite chips, 50 lbs. each, were added to the boring annulus to approximately one (1) ft bgs.
- A protective casing was added over the PVC riser, and a J-plug added to top of casing.
- Depth to water was measured at 37.24 ft btoc, or approximately 34.8 ft bgs.
- Four (4) bollards were pushed into the ground around the casing at each corner, and room was left on the ground for a 4 ft x 4 ft x 6-inch-thick concrete pad.
- The final casing height was measured at 33 inches above the ground surface.
- A keyed lock was placed on the casing lid on MW-EE2, and at 1637 hours a keyed lock was then placed on the casing lid of MW-EE1.

All parties signed out at AltEn office and left site at 1642 hours.

Thursday, March 31, 2022

EA arrived at the site at 0816 hours initiate the field work. The following activities were completed.

- EA staff signed in at AltEn office and finalized logistics and access plan with New Fields staff.

Groundwater Monitoring Well Development

MW-EE2

- Arrived at MW-EE2 and collected the following pre-development groundwater measurements:
  - Depth to water: 37.36 ft btoc
- A check valve was used to pre-develop the well and remove sediment before submersible pump was used.
- Calibration of field equipment was completed prior to well development.
- Well development was initiated at 1100 hours and completed at 1300 hours.
- Development water was containerized in a 55-gallon drum.
- The following post-development measurements were taken at MW-EE2 at 1325 hours:
  - Depth to water: 37.50 ft btoc
  - Depth to bottom: 46.45 ft btoc
- A 4 ft x 4 ft x 6-inch-thick concrete pad was formed, poured, and finished around the well casing.
- Bollards and stickup monument were painted and well was locked upon completion of work.

All parties signed out at AltEn office and left site at 1500 hours.

Friday, April 1, 2022

EA arrived at the site at 0829 hours initiate the field work. The following activities were completed.

- EA staff signed in at AltEn office and finalized logistics and access plan with New Fields staff.
- Access was granted to EA staff to use farm access road to access MW-EE1.

Groundwater Monitoring Well Development

MW-EE1

- Arrived at MW-EE1 and collected the following pre-development groundwater measurements:
  - Depth to water: 42.09 ft btoc
- Installed four (4) bollards around concrete well pad location.
- EA staff delivered a new well development pump to field staff on site at 1128 hours.
- Calibration of field equipment was completed prior to well development.
- Development of MW-EE1 was initiated at 1200 hours and completed at 1406 hours.
- Development water was discharged into southeast lagoon as approved by New Fields staff.
- The following post-development measurements were taken at MW-EE1 at 1406 hours:
  - Depth to water: 42.05 ft btoc
  - Depth to bottom: 54.95 ft btoc
- A 4 ft x 4 ft x 6-inch-thick concrete pad was formed, poured, and finished around the well casing, and four (4) bollards and stickup monument were painted.

Groundwater Monitoring Secondary Well Development

MW-EE2

- Arrived at MW-EE2 and collected the following pre-secondary development groundwater measurements:
  - Depth to water: 37.46 ft btoc
- Re-developed MW-EE2 at a higher pump rate than first development, completed at 1555 hours.
- Development water was containerized in a 55-gallon drum.
- Collected the following post-development measurements at 1605 hours:
  - Depth to water: 37.51 ft btoc
  - Depth to bottom: 46.43 ft btoc
- MW-EE2 J-plug was replaced and well casing was locked upon completion of work.
- MW-EE1 was locked following completion of work at MW-EE2.
- All DPT groundwater sample locations were flagged and labeled, and IDW locations were noted and documented.
- Access gates along eastern border of property were closed and secured with a chain.

All parties signed out at AltEn office and left site at 1658 hours.

Monday, April 4, 2022

EA arrived at the site to initiate the field work at approximately 0900 hours. The following activities were completed.

- EA staff signed in at AltEn office and finalized logistics and access plan with New Fields staff.
- Met with Jim Borovich from NDEE on site at approximately 0900 hours.

Groundwater Monitoring Well Sampling

- Utilized low-flow sampling techniques to collect groundwater samples.
- A portable bladder pump was used to collect groundwater samples from MW-EE1 and MW-EE2. The bladder pump was decontaminated between monitoring wells and a new bladder was used for each well.
- Purging the MW-EE2 was initiated at 0946 and completed at 1031 when the water quality parameters stabilized.
- Purge water from the sampling of MW-EE1 was placed in the southeast lagoon.
- Purge water from the sampling of MW-EE2 was placed in the northwest lagoon.
- The sampling of MW-EE2 was completed at 1035 with a depth to groundwater of 37.51 btoc.

- Purging the MW-EE1 was initiated at 1236 and completed at 1321 when the water quality parameters stabilized.
- The sampling of MW-EE1 was completed at 1330 with a depth to groundwater of 41.90 btoc.
- Collected location data for the six DPT sampling locations and two monitoring wells using a network real-time kinematic (RTK) global positioning system (GPS).
- The monitoring wells were locked after work was completed.

All parties signed out at AltEn office and left site at approximately 1505 hours.

Sample Shipment
On Wednesday, March 30, 2022, samples collected on Monday, March 28, 2022 and Tuesday, March 29, 2022 were placed in shipping coolers with fresh ice, chain-of-custody, sealed, and shipped via overnight courier to Pacific Agricultural Laboratories in Sherwood, OR for analyses of pesticides.

On Monday, April 4, 2022, samples collected on Monday, April 4, 2022 were placed in shipping coolers with fresh ice, chain-of-custody, sealed, and shipped via overnight courier to Pacific Agricultural Laboratories in Sherwood, OR for analyses of pesticides.

Summary of Detections
The following table provides a summary of the detections in the groundwater samples collected.

Analyte	Unit	Sample ID								
		SP-2	SP-3	SP-4	SP-6	SP-7	SP-8	MW-EE1	MW-EE2	MW-EE3*
Mefenoxam	µg/L	**2,700**	**0.48**	**0.15**	**0.099**	ND	ND	ND	**0.15**	ND
Sedaxane	µg/L	**47**	**0.13**	ND	ND	ND	ND	ND	**1.8**	ND
Fludioxonil	µg/L	**17**	ND	ND	ND	ND	ND	ND	**0.23**	ND
Fluoxastrobin	µg/L	ND	ND	ND	ND	ND	ND	ND	**0.20**	ND
Ipconazole	µg/L	**5.2**	ND	ND	ND	ND	ND	ND	ND	ND
Metconazole	µg/L	**0.093**	ND	ND	ND	ND	ND	ND	ND	ND
Propiconazole	µg/L	**0.80**	ND	ND	ND	ND	ND	ND	ND	ND
Azoxystrobin	µg/L	**1.0**	ND	ND	ND	ND	ND	ND	ND	ND
Tebuconazole	µg/L	**50**	**0.45**	ND	ND	ND	ND	ND	**0.16**	ND
Thiabendazole	µg/L	**0.21**	ND	ND	ND	ND	ND	ND	ND	ND
Thiamethoxam	µg/L	**2,000**	**0.073**	**4.1**	**0.11**	**0.13**	ND	**0.21**	**2.4**	**0.24**
Trifloxystrobin	µg/L	**0.39**	ND	ND	ND	ND	ND	ND	ND	ND
Chlorantraniliprole	µg/L	**960**	**1.7**	ND	ND	0.11	ND	ND	**3.7**	ND
Cyantraniliprole	µg/L	**1.4**	ND	ND	ND	ND	ND	ND	ND	ND
Prothioconazole	µg/L	**38**	**0.17**	ND	ND	ND	ND	ND	ND	ND
Thiophanate methyl	µg/L	**0.14**	ND	ND	ND	ND	ND	ND	ND	ND
Carboxin	µg/L	**1.9**	ND	ND	ND	ND	ND	ND	**0.076**	ND
Clothianidin	µg/L	**25**	ND	**3.6**	**0.10**	**0.17**	ND	**0.14**	**15**	**0.16**

µg/L = microgram per liter
*MW-EE3 is a duplicate of MW-EE1.
ND = not detected above the laboratory limit of quantitation.
Bold = detection above the laboratory limit of quantitation.

Attachments

Attachments to this Technical Memorandum include:

- Photographic Log
- Field Collection Sheets
- Analytical Report

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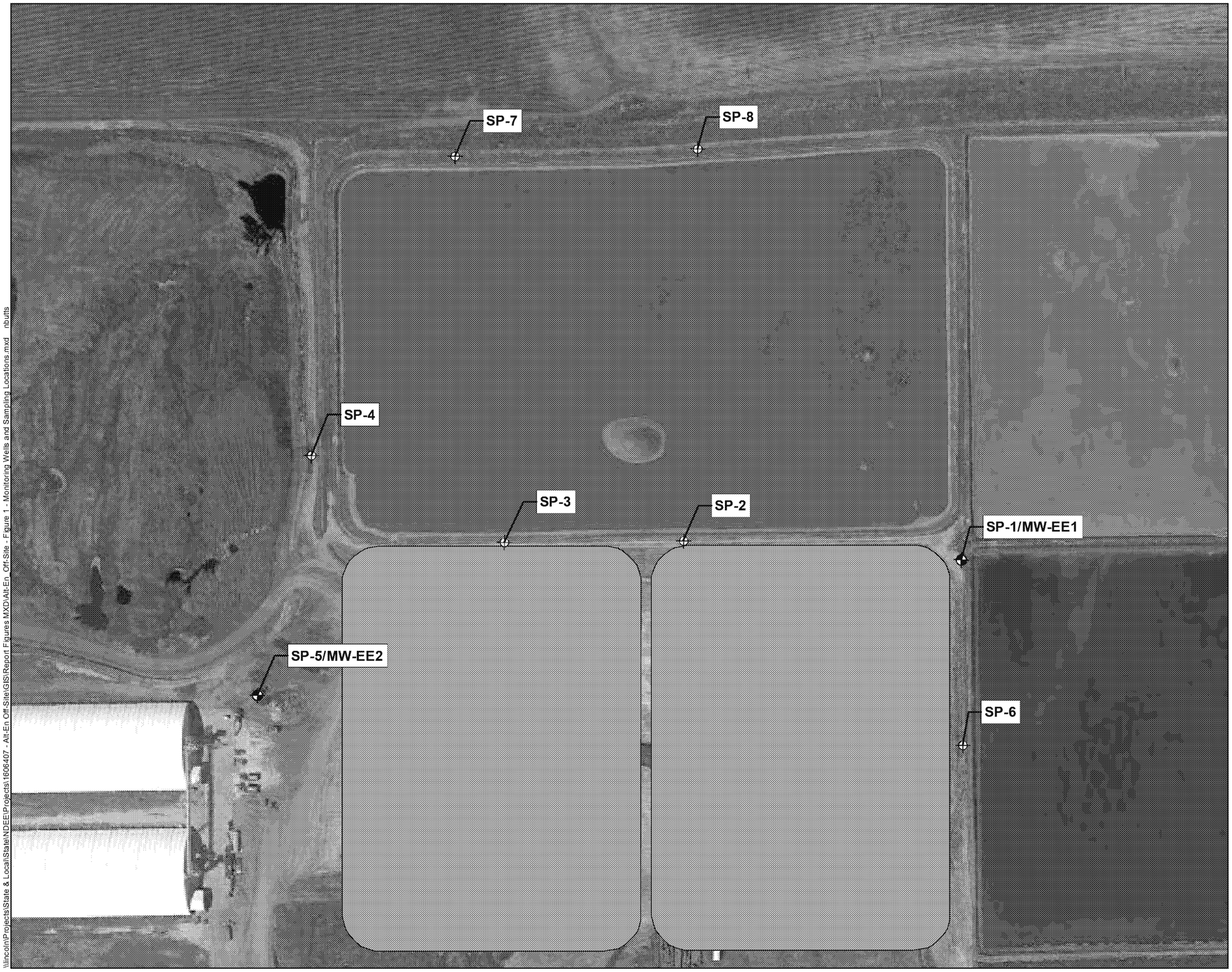
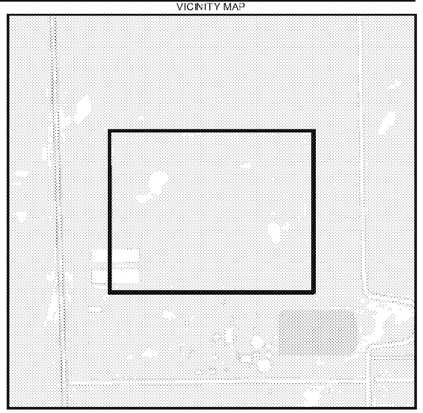




Legend

- Monitoring Well GW Sample
- GW Sample
- New Treated Water Lagoons

Note(s):
GW = Groundwater

Map Date: 4/15/2022
Source: Google Earth 2021
Projection: NAD 1983

N

0 75 150 Feet

1 inch = 150 feet

Figure 1
Groundwater Sampling and Monitoring Well Locations
AltEn Ethanol Plant
Mead, Saunders County, Nebraska

\\lincoln\Projects\State & Local\State\NDEE\Projects\1606407 - Alt-En Off-Site\GIS\Report Figures\MXD\Alt-En_Off-Site - Figure 1 - Monitoring Wells and Sampling Locations.mxd nbutts

Attachment:

Photographic Log

Photographs

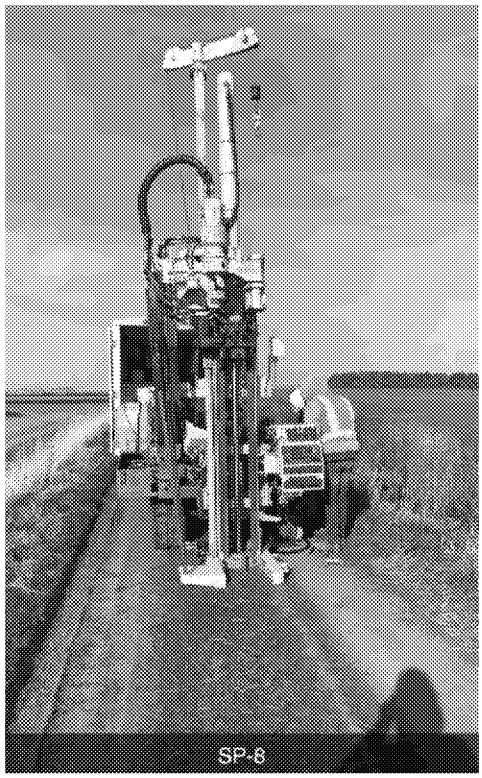


Photo 1. PES crew at SP-8 location.

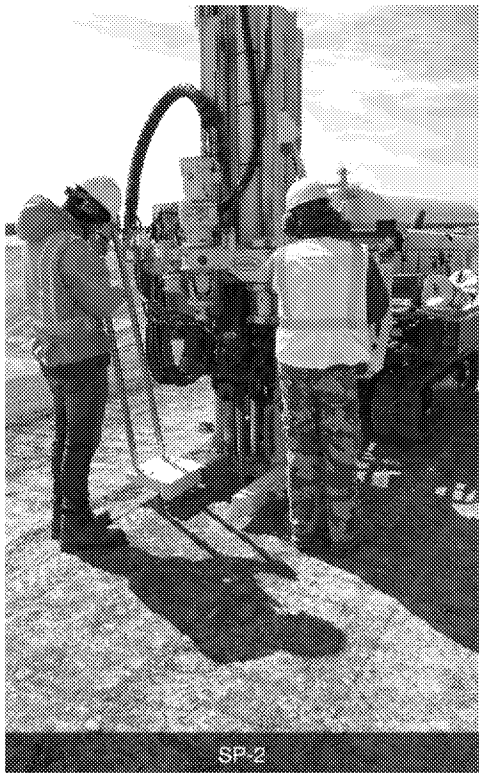


Photo 2. PES and EA staff at SP-2 location.

Photo 3. PES staff at SP-3 location.

Photo 4. PES staff drilling at SP-6.

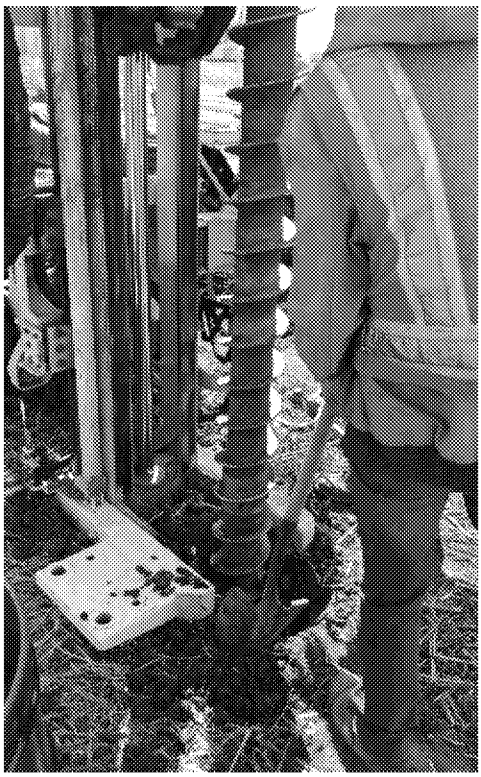


Photo 5. PES staff drilling for MW-EE1 installation.

Photo 6. PES staff adding filler pack sand to MW-EE1.

Photo 7. PES staff cleaning soil boring equipment.

Photo 8. MW-EE2 well pad poured, and bollards and casing painted. IDW containerized in labeled drums.

Photo 9. MW-EE1 after concrete was poured and finished, and bollards installed and painted. IDW is containerized and labeled in background.

Attachment:

Field Collection Sheets

DAILY QUALITY CONTROL REPORT

Project Manager: Dan Bigbee

Project: Alton /NDEE

Date: 3-28-2022 Monday

S	M	T	W	TH	F	S
	X					

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	Part. cloudy 32-50 44°F	50-70	70-85	>85
Wind	Still	Moderate	High	Gusty 20+ mph S/SE	
Humidity	Dry	Moderate 38%	Humid		

30.17 in Hg.

NDEQ Personnel on Site: Jim Borovich, NDEE

Contractors on Site: Willy + Sadie with New Fields; Travis with EA; Jesse + Erik Plaus ES.

Visitors on Site: Clean Harbors is also working on levy / lagoon on site.

Work Performed: Completed DPT push to groundwater with groundwater samples collected at SP-8, SP-7, SP-4, SP-2, and SP-3. 5 of 6 DPT groundwater locations completed + samples collected. One remaining DPT location (SP-6) as well as Install of two planned monitoring wells.

All IDW water has been containerized in 5 gal buckets with lids + will be transferred to IDW drum once delivered tomorrow 3/29.

Sheet 1 of 2

Project: Alter Date: 3-28-22

Quality Control Activities (including field calibration and duplicate samples collected):
Attention paid to high quality decon procedures of all downhole equipment between boring locations. Equipment blanks collected from steel screen + check valve by New Fields staff.

* Strong manure type odor from groundwater at SP-2 location

Problems Encountered/Corrective Actions Taken: Insufficient water at SP-3 location. Rods were pulled, new clean screen installed, + then pushed additional 5 feet down to 55 ft. bgs. New tubing then reinserted with check valve which now produced plenty of groundwater for sample collection

Downtime/Standby: Lunch break

Health and Safety Activities: Tailgate safety meeting + HSP review morning prior to starting field activities

Special Notes: Split samples were collected at all boring locations by New Fields.
(EA = 1 Liter amber
& New Fields = 2 1 Liter ambers)

By: Travis Hermon, EA Staff Geologist Date: 3-28-22

Sheet 2 of 2

DAILY QUALITY CONTROL REPORT

Project Manager: Dan Bigbee (EA)

Project: Alten

Date: 3-29-2022

S	M	T	W	TH	F	S
		X				

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85	>85
Wind	Still	Moderate	High 25 mph SE wind	Gusty	
Humidity	Dry	Moderate 50% humidity	Humid		

29.19 in Hg

NDEQ Personnel on Site: Jim Borovich + Tom Buell

Contractors on Site: EA (Travis H.) ; New Fields (Willy, Sadie, Ryan); PES (Erik + Jesse)

Visitors on Site: —

Work Performed: * Complete DPT push to groundwater + collect EA sample (groundwater) + split samples by New Fields staff. at SP-6.

* Drill + install MW-EE1. Protective casing is in place. New J-plug in top of PVC riser inside protective (stickup) monument. Concrete pad + bollard install will be added in next few days to complete well construction.

Sheet 1 of 2

Project: Alter Date: 3-29-2022

Quality Control Activities (including field calibration and duplicate samples collected): Construction oversight by EA

Split samples (groundwater) collected by New Fields staff

Problems Encountered/Corrective Actions Taken: Difficult access to MW-EE1 proposed location due to active trenching around new lagoon perimeter. Access took planning + longer than expected ~~[illegible]~~ but was successful + MW-EE1 was installed by end of day

Downtime/Standby: Access planning for MW-EE1. Lunch break for drillers

Health and Safety Activities: Tailgate safety meeting on site prior to beginning work.

Special Notes: Keyed locks will be added to new wells tomorrow 3-30.

* Potable water source was located and used at Village of Mead office located at 312 S Vine St Mead, NE.
Approx 100 gallons was collected in poly tank for decon purposes.
* All IDW is being containerized along with decon water.

By: [signature] Date: 3-29-2022

Travis Herman
EA Staff Geologist.

Sheet 2 of 2

@ 0917

DAILY QUALITY CONTROL REPORT

37°F, very windy 22mph NW, 79% humidity, 29.55 in Hg. Cloudy.

Project Manager: Dan Bigbee

Project: Allen / NDEE

Date: 3-30-22

S	M	T	W	TH	F	S
			X			

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85	>85
Wind	Still	Moderate	High	Gusty	
Humidity	Dry	Moderate	Humid 79%		

NDEQ Personnel on Site: Jim Borovich

Contractors on Site: EA - Travis Hamm; PES - Jesse K. + Eric R.; New Fields - Willy W. + Sadie

Visitors on Site:

Work Performed: Completed install of MW-EE 2 to a total depth of 44 ft. bgs. 4 protective bollards were installed. Concrete pad to be added.

+ Locks added to both new monitoring wells.

Project: Alten Date: 3-30-22

Quality Control Activities (including field calibration and duplicate samples collected): Construction oversight.

Problems Encountered/Corrective Actions Taken: —

Downtime/Standby: Lunch

Health and Safety Activities: Tailgate safety meeting in AM. Inspection for proper use of PPE.

Special Notes: MW EE-2 is screened 34'-44' bgs.

By: EA Date: 3-30-22

Sheet 2 of 2

DAILY QUALITY CONTROL REPORT

Project Manager: Dan Bigbee

Project: Alten

Date: 3-31-2022

S	M	T	W	TH	F	S
				X		

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50	50-70	70-85	>85
Wind	Still	Moderate	High	Gusty	
Humidity	Dry	Moderate	Humid 69% humidity		

2984 in Hg

NDEQ Personnel on Site: —

Contractors on Site: EA, PES, New Fields (Sadie, Ryan, Karrie)

Visitors on Site: —

Work Performed: * Develop well MW-EE2

* Pour concrete pad (4' x 4')

* Paint all bollards + stickup monument

Sheet 1 of 2

Project: Alten Date: 3-31-2022

Quality Control Activities (including field calibration and duplicate samples collected):
Parameters tracked during development with YSI Pro DSS + turbidity meter.

Field photos collected.

Problems Encountered/Corrective Actions Taken:
* Pump was limited on flow rate. Pump was surged to agitate water bearing formation + developed for over 2 hours.
* New pump was ordered + will be used for development of MW-EE1

Downtime/Standby: Morning access issues due to Land App hours.

Health and Safety Activities: Morning tailgate safety meeting with EA + PES.

Special Notes: —

Justin Raikes was contacted + recieved verbal permission to use North/South access road on his property

By: Date: 3-31-2022

Sheet 2 of 2

DAILY QUALITY CONTROL REPORT

Project Manager: Dan Bigbee

Project: Alter

Date: 4-1-2022

S	M	T	W	TH	F	S
					X	

Weather	Bright Sun	Clear	Overcast	Rain	Snow
Temp	To 32	32-50 47°F	50-70	70-85	>85
Wind	Still	Moderate	High	Gusty	
Humidity	Dry	Moderate 45% humidity	Humid	30.05 in Hg	

NDEQ Personnel on Site: /

Contractors on Site: EA (Travis H.), PES (Jesse + Eric), New Fields (Sadie + Kerrie) + AECOM (Ryan)

Visitors on Site: —

Work Performed: * Install 4 protective bollards at MW-EE1.

* Recovered new development pump + set up at MW-EE1. Complete parameter tracked well development at MW-EE1 using pump + surge method at purge rate of 2 GPM.

* Complete secondary development at MW-EE2 using new pump + higher purge rate of 2 GPM. MW-EE2 was developed + tracked using pump + surge method.

Sheet 1 of 2

Project: Alter Date: 4-1-2022

Quality Control Activities (including field calibration and duplicate samples collected): Equipment calibrated at office morning of 4-1-2022

Problems Encountered/Corrective Actions Taken: Due to low purge rate during initial development of MW-EE2 a second round of development (pump + surge) was completed with New Proactive Super Twister pump at rate of 2 GPM. Parameters were again tracked + development was successful.

Downtime/Standby: Wait for new pump to be delivered on site. Approx 20-30 min downtime.

Health and Safety Activities: Tailgate safety meeting between EA + PES.

Special Notes: Newly developed wells are scheduled to be sampled on Monday 4-4-2022.

By: [signature] Date: 4-1-2022

Travis Herman, EA
Staff Geologist

Sheet 2 of 2

DAILY QUALITY CONTROL REPORT

Project Manager: Dan Bigbee

Project: AMEn Energy

Date: 4 Apr 2022

S	M	T	W	TH	F	S
	X					

Weather	Bright Sun	Clear	Overcast	Rain	Snow
		10 –	8 → 10		
Temp	To 32	32-50	50-70	70-85	>85
		32			
Wind	Still	Moderate	High	Gusty	
Humidity	Dry	Moderate	Humid		
	X				

NDEQ Personnel on Site: Jim Borovich

Contractors on Site: Kari - with Newfields -

Visitors on Site:

Work Performed: R Dixon S. Corcoran

Low Flow Sampled 2 Monitoring wells using portable Bladder pump - MW-EE1 and MW-EE2

Surveyed Top of Casing concrete and soil Boring Locations. Network RTK - Survey completed using Carlson Service Survey program.

Shipped Samples to analytical lab

Sheet 1 of 2

Project: AHEU Energy **Date:** 4 Apr 22

Quality Control Activities (including field calibration and duplicate samples collected):
Calibrated YSI Pro DSS Multiparameter
Calibrated Lamotte 2020e Turbidity Meter
Collected Duplicate Sample MW-EE3 @ 1500 parent MW-EE1

Problems Encountered/Corrective Actions Taken:
None

Downtime/Standby:
None

Health and Safety Activities:
Hard Hat, Safety Vest, Steel toes.

Special Notes:
None
Newfields collected Equipment Rinsate using
Greenfields Distilled water for - Pesticides, Nitrate, Nitrite + Ammonia.
Split Samples Collected by Newfields from MW-EE1 + EE2
for Pesticides, Nitrate, Nitrite + Ammonia

By: [signature] **Date:** 4 Apr 2022

Sheet 2 of 2

SP-8

Lab Sample ID
"SP-8-GW-032822"

COLLECTION FIELD SHEET

Project Name Alter

Sample Number SP-8 (groundwater)

Name and Address of Property Owner Alter, Mead, NE

Sample Location SP-8

Sample Media Groundwater Soil Sample Depth GW @ 50 ft. bgs.

Well I.D. SP-8 temporary DPT

Date Collected 3-28-2022 Time Collected 1005.

Sampling Personnel Travis H. / EA

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

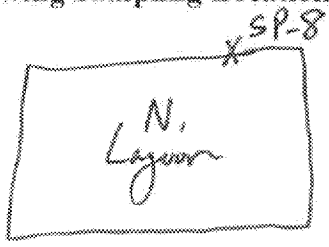
Field Measurements
Photo Ionization Detector Measurements: —

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter Amber	groundwater	none	Pesticides

Comments:

Site Sketch Showing Sampling Location:



SP-7

COLLECTION FIELD SHEET

Lab Sample ID "SP-7-GW-032822"

Project Name Alter

Sample Number SP-7

Name and Address of Property Owner Alter

Sample Location

Sample Media Groundwater Soil Sample Depth ≈ 50 ft. bgs.

Well I.D. SP-7

Date Collected 3-28-22 Time Collected ~~AM~~ 1105

Sampling Personnel Travis H

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

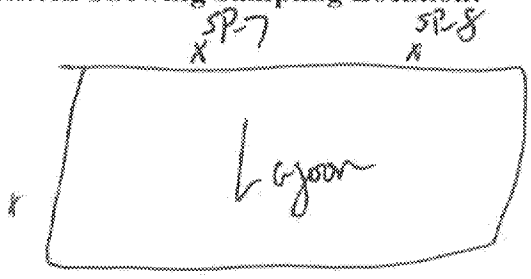
Field Measurements
Photo Ionization Detector Measurements: —

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter Amber	Groundwater	None	Pesticides

Comments: ≈ 35-40 lbs bentonite chip backfill in 1.5" hole to ≈ 35 ft. bgs.

Site Sketch Showing Sampling Location:



SP-4

Lab sample ID:
"SP-4-GW-032822"

COLLECTION FIELD SHEET

Project Name Alten

Sample Number SP-4-GW-0328-22

Name and Address of Property Owner Alten (Mead, NE)

Sample Location SP-4, west side of barn, west side of barb wire fence.

Sample Media groundwater ~~Soil~~ GW Sample Depth ≈ 42 ft. bgs.

Well I.D. SP-4

Date Collected 3-28-22 Time Collected 1218

Sampling Personnel Travis H. / New Haven (Saddy) (Saddie) TH (Sadie)

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

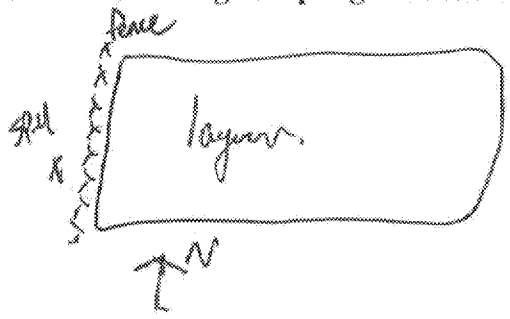
Field Measurements
Photo Ionization Detector Measurements: —

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter Amber	Groundwater	None	Pesticides

Comments: ≈ 35-40 lbs. bentonite chips used to backfill 1.5 inch borehole to surface.

Site Sketch Showing Sampling Location:



SP-2

Lab Sample ID:
"SP-2-GW-032822"

COLLECTION FIELD SHEET

Project Name Alten

Sample Number SP-2-GW-032822

Name and Address of Property Owner Alten / Mead, NE

Sample Location SP-2

Sample Media Groundwater ~~Soil~~ GW Sample Depth ≈ 50 ft.

Well I.D. SP-2

Date Collected 3-28-22 Time Collected 1453

Sampling Personnel Travis H. / EA

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

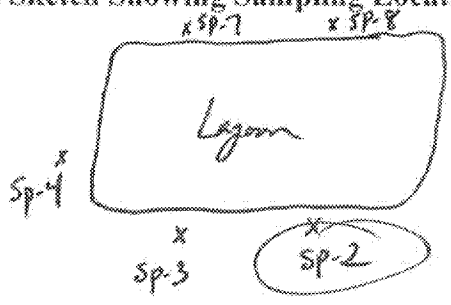
Field Measurements
Photo Ionization Detector Measurements: —

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter Amber	Groundwater	None	Pesticides

Comments: low flow / check valve with new tubing used at each bore location.
* Water was somewhat foamy as it went into sample bottle. Appears to have settled out by the time bottle was filled completely. Water appears cloudy.
* Strong manure type smell from sample / groundwater.

Site Sketch Showing Sampling Location:



SP-3

Lab sample ID:
"SP-3-GW-032822"

COLLECTION FIELD SHEET

Project Name Alten /NDEE

Sample Number SP-3-GW-032822

Name and Address of Property Owner

Sample Location Southern border of lagoon, east of berm road.

Sample Media Groundwater Soil Sample Depth ≈ 55 ft. bgs

Well I.D. SP-2

Date Collected 3-28-22 Time Collected 1635

Sampling Personnel Travis H. /EA

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

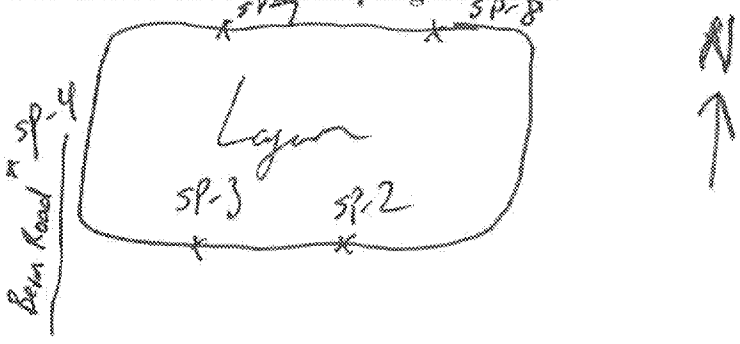
Field Measurements —
Photo Ionization Detector Measurements:

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter Amber	Groundwater	None	Pesticides.

Comments:

Site Sketch Showing Sampling Location:



SP-6

Lab sample ID;
"SP-6-GW-032922"

COLLECTION FIELD SHEET

Project Name Alten

Sample Number SP-6-GW-032922

Name and Address of Property Owner Alten ; Mead, NE

Sample Location East side of new lagoon

Sample Media Groundwater ~~Soil~~ GW. Sample Depth 55 ft. bgs.

Well I.D. SP-6

Date Collected 3-29-22 Time Collected 0911

Sampling Personnel Travis H. / EA

Sample QC Duplicate: Yes (No) Duplicate Sample No. —

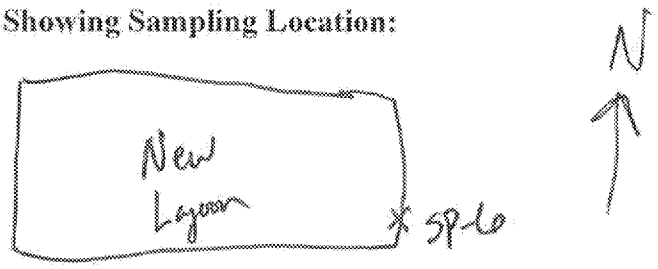
Field Measurements
Photo Ionization Detector Measurements: —

PH — Conductivity — Temperature —

Container	Sample Type	Preservative	Analysis Requested
1 Liter amber	groundwater (grab)	None	Pesticides.

Comments: DPT location was moved ≈ 18 yds. (50-60 ft.) south of original. Flagged moved to mark new location

Site Sketch Showing Sampling Location:



COLLECTION FIELD SHEET

Project Name Alt En Energy, Monitoring Well Sample

Sample Number MW-EE2

Name and Address of Property Owner Mead, NE

Sample Location MW-EE2 - Monitoring Well -

Sample Media Groundwater **Soil Sample Depth** NA

Well I.D. MW-EE2

Date Collected 4 Apr 22 **Time Collected** 1035

Sampling Personnel K. Dixon S. Corcoran

Sample QC Duplicate: Yes (No) **Duplicate Sample No.** NA

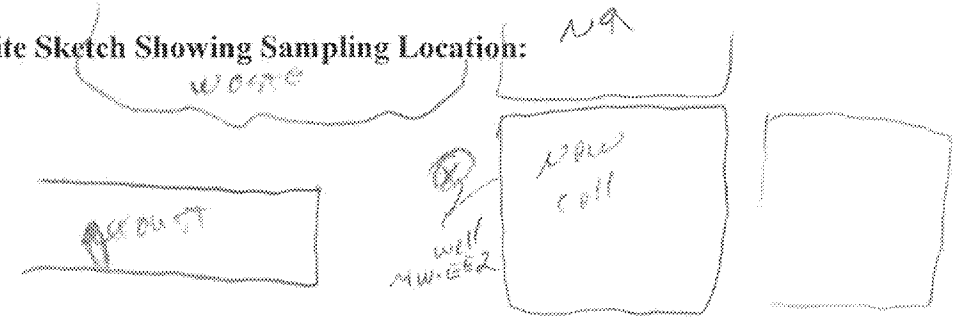
Field Measurements
Photo Ionization Detector Measurements: NA

PH 6.84 **Conductivity** 1830 **Temperature** 12.7

Container	Sample Type	Preservative	Analysis Requested
1 gt Amber	Low Flow	cool	Pesticides

Comments:
Split sample collect - by Newfields for -
Pesticides - Nitrite, Nitrate, Ammonia, T

Site Sketch Showing Sampling Location:



COLLECTION FIELD SHEET

Project Name AltEn - Mead, NE

Sample Number MW-EE1

Name and Address of Property Owner Mead, NE

Sample Location MW-EE1

Sample Media Groundwater. Soil Sample Depth —

Well I.D. MW-EE1

Date Collected 4Apr22 Time Collected 1330

Sampling Personnel KDixon, S. Corcoran

Sample QC Duplicate: Yes No Duplicate Sample No. XS. MW-EE3 @ 1500 hrs

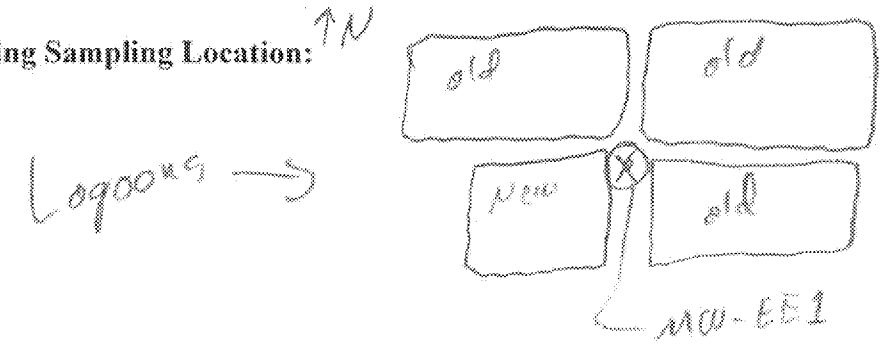
Field Measurements
Photo Ionization Detector Measurements: NA

PH 6.43 Conductivity 1604 Temperature 13.5

Container	Sample Type	Preservative	Analysis Requested
2-1pt Amber	Low flow	Cool	pesticides

Comments:
Split sample with Newfield - Pesticide Nitrite, Nitrate, Ammonia

Site Sketch Showing Sampling Location:



Daily Calibration . . Tracking log for

Turbidity Meter

Date 3/31/22 + 4/1/22

SN# ME 14752

Time		Standard type and value		Meter Reading Prior to Calibration		Meter Reading after Calibration		Comments				Initials
3-31-22	0950	0.0	NTU	0.0	Blank	0.0	NTU					[illegible]
3-31-22	0952	1.0	NTU	0.86	standard	1.0	NTU					[illegible]
3-31-22	0955	10.0	NTU	10.6	standard	10.0	NTU					[illegible]
4-1-22	0641	0.0	NTU	0.0	Blank	0.0	NTU					[illegible]
4-1-22	0644	1.0	NTU	0.91	Standard	1.0	NTU					[illegible]
4-1-22	0646	10.0	NTU	10.3	Standard	10.0	NTU					[illegible]

Daily Calibration . Tracking log for

YSI Pro DSS

Date 3/31/22 – 4/1/22 SN# 21F104199

Time		Standard type and value		Meter Reading Prior to Calibration		Meter Reading after Calibration		Comments				Initials
3-31-22	0958	pH	7.00	7.21	pH	7.00	pH					[illegible]
3-31-22	1003	pH	10.00	10.20	pH	10.00	pH					[illegible]
3-31-22	1007	ORP	240.0 mV	237.9	mV	240.0	mV					[illegible]
3-31-22	1014	S. Cond.	1413 us/cm	1219	us/cm	1413	us/cm					[illegible]
4-1-22	0651	pH	7.00	7.17	pH	7.00	pH					[illegible]
4-1-22	0653	pH	10.00	10.09	pH	10.00	pH					[illegible]
4-1-22	0657	ORP	240.0	244.7	240.0	mV						[illegible]
4-1-22	0704	Spec. Cond	1413 us/cm	1316	mV	~~1310~~ 1413	mV					[illegible]

Daily Calibration and Tracking log for AHEn Energy

Date ~~2/4/22~~ (KD)
4 Apr 22

SN# YSI: 21F104199
Turb: SN-ME 14752

Time	Standard type and value	Meter Reading Prior to Calibration	Meter Reading after Calibration	Comments	Initials
0706	DO %	112.3	96.2	OK	SC
0707	DO mg/L	11.19	9.59	OK	SC
0708	pH 7	7.71	7.04	OK	SC
0713	pH 10	10.13	10.02	OK	SC
0716	1.413 spc	~~1340.1~~ ~~1413~~	~~1384~~ 1413	OK	SC
0723	ORP 220.0	217.7	~~218.6~~	220 (KD) OK	SC
			LAMAT 2020E - turbidity		
0728	0	—	0.0		SC
0729	1.0	~~1.0~~	1.0		SC
0732	10.0	—	~~7~~ 10.2 (KD)		SC
~~0733~~					

MW-EE1

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EA Engineering, Science and, Technology, Inc., PBC

BORING LOG

PROJECT:	Alter	BORING DEPTH:	53' bgs	BORING NO.:	MW-EE1
EA PROJECT #:	11606407	SURFACE ELEV:	0	DATE DRILLED:	3-29-22
DRILLING CO.:	Parratt	NORTHING:		BORING METHOD:	Hollow stem auger
DRILLER:	Jesse K.	EASTING:		TYPE OF SURFACE:	Berm
GEOLOGIST:	Travis H.	DEPTH TO WATER:	42.05' btoc		

DEP. (FT)	ELEV (FT)	WELL CONST.	COLOR	USCS CODE	GEOLOGIC DESCRIPTION	SAMPLE METHOD	LENGTH (IN.)	% RE-COVERY	Blow Count	LAB DATA
			10YR 4/4	ML	Silt/~~Fill~~ Berm fill, dark yellowish brown, low to med plastic, slightly friable, dry to slightly moist traces clay. (clayey silt)	Auger cuttings		0		
5	-5.0							0		
10	-10.0		10YR 3/4	CL	Silty clay, dark yellowish brown med to high plastic, dry to moist 10-20% silt.			0		
15	-15.0		10YR 3/1	CL	Clay, very dark gray, med to high plastic, dry to moist, trace silt.			0		
20	-20.0			CL	Same as previous, dry to moist, very dark gray to black.			0		
25	-25.0		10YR 3/1	CL	Clay, med to high plastic, med to high stiffness, slightly ~~tit~~ lighter gray.			0		

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MW-EE1

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EA Engineering, Science and, Technology, Inc., PBC

BORING LOG

PROJECT:	Alten	BORING DEPTH:	≈ 53' bgs.	BORING NO.:	MW-EE1
EA PROJECT #:	1606407	SURFACE ELEV:		DATE DRILLED:	3-29-22
DRILLING CO.:	PES	NORTHING:		BORING METHOD:	Hollow stem
DRILLER:	Jesse Kelvig	EASTING:		TYPE OF SURFACE:	Berm/grass
GEOLOGIST:	Travis M.	DEPTH TO WATER:	42.05'		

DEP. (FT)	ELEV (FT)	WELL CONST.	COLOR	USCS CODE	GEOLOGIC DESCRIPTION	SAMPLE METHOD	LENGTH (IN.)	% RE-COVERY	Blow Count	LAB DATA
			10YR 4/1	CL	Clay, dark gray, high to very high stiffness, med to high plastic, dry to moist, trace very fine sand.			0		
28'										
				2.	Sand feel reported by driller ≈ 28 ft. bgs. Not seen in cuttings yet			0		
30	-30.0									
			10YR 4/2	CL	Clay, dark grayish brown, low to med. stiff, med to high plastic, moist to wet, trace vf sand.					
35	-35.0									
				CL	Same as previous, 2 small iron concretions found			0		
			10YR 6/4	SP	Sand, very fine, non-plastic, dry to moist, light yellowish brown.					
40	-40.0							0		
H_2O Static	* H_2O			SP	Saturated sands. First seen at 46', but most likely brought up from shallower depth ≈ 40 ft.					
45	-45.0				Water tagged through auger stem at ≈ 48 ft. bgs			0		
				SP						
50	-50.0									

MW-EE1

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EA Engineering, Science and, Technology, Inc., PBC

BORING LOG

PROJECT: Allen	BORING DEPTH: 53'	BORING NO.: MW-EE1
EA PROJECT #:	SURFACE ELEV:	DATE DRILLED: 3-29-22
DRILLING CO.: Plains	NORTHING:	BORING METHOD: Hollow stem Auger
DRILLER: Jesse Kelly	EASTING:	TYPE OF SURFACE: Berm
GEOLOGIST: Travis H.	DEPTH TO WATER: * 42.05' btoc	

DEP. (FT)	ELEV (FT)	WELL CONST.	COLOR	USCS CODE	GEOLOGIC DESCRIPTION	SAMPLE METHOD	LENGTH (IN.)	% RE-COVERY	Blow Count	LAB DATA
				SP	Same as previous.			0		
55	-55.0				BOH @ 53 ft. bgs.			0		
60	-60.0				* H_2O later measured at 42.05' btoc following well development *			0		
65	-65.0				* Screened interval 43'-53' bgs.			0		
70	-70.0							0		
75	-75.0									

MW-EE2

pg. 1 of 2

EA Engineering, Science and, Technology, Inc., PBC

BORING LOG

PROJECT:	Altem	BORING DEPTH:	44 ft	BORING NO.:	MW-EE2
EA PROJECT #:	16006407	SURFACE ELEV:		DATE DRILLED:	3-30-22
DRILLING CO.:	PES Plans	NORTHING:		BORING METHOD:	Hollow stem auger
DRILLER:	Jesse Kelvy	EASTING:		TYPE OF SURFACE:	Rocked / gravel park lot
GEOLOGIST:	Tom H	DEPTH TO WATER:	37.2 ft. btoc		

DEP. (FT)	ELEV (FT)	WELL CONST.	COLOR	USCS CODE	GEOLOGIC DESCRIPTION	SAMPLE METHOD	LENGTH (IN.)	% RE-COVERY	Blow Count	LAB DATA
					Compacted rock/gravel (limestone) at surface.			0		
			10YR 3/1	ML	Clayey silt, very dark gray, med to high plastic, low to med stiff, dry to moist.					
5	-5.0							0		
			10YR 4/4	CL	Silty clay, dark yellowish brown, med to high stiff, med to high plasticity, dry to moist.					
10	-10.0							0		
			10YR 4/4	CL	Same as previous, low to med. stiff.					
15	-15.0							0		
				CL	Same as previous					
20	-20.0							0		
			10YR 5/4	SP	Sand, very fine, yellowish brown, nonplastic, dry to moist.					
25	-25.0									

MW-EE2

pg. 2 of 2

EA Engineering, Science and, Technology, Inc., PBC

BORING LOG

PROJECT: Allen	BORING DEPTH: 44 ft.	BORING NO.: MW-EE2
EA PROJECT #: 1606407	SURFACE ELEV:	DATE DRILLED: 3-30-22
DRILLING CO.: PES	NORTHING:	BORING METHOD: Hollow stem auger
DRILLER: Jesse Kahrs	EASTING:	TYPE OF SURFACE: Crushed rock/gravel
GEOLOGIST: Travis K	DEPTH TO WATER: 37.2 ft. btoc	

DEP. (FT)	ELEV (FT)	WELL CONST.	COLOR	USCS CODE	GEOLOGIC DESCRIPTION	SAMPLE METHOD	LENGTH (IN.)	% RE-COVERY	Blow Count	LAB DATA
				SP	Same as previous vf sand			0		
30	-30.0									
				SP	Same as previous			0		
35	-35.0		10YR 6/3	SP	Same as previous, pale brown.			0		
H_2O * static	* H_2O									
40	-40.0			SP	Sand, vf, wet to saturated, Water table estimated by driller in 35-40' sand.			0		
45	-45.0				BOH @ 44 ft. bgs Screened interval 34'-44' bgs. Casing stickup ≈ 33 inches (2.75 ft.)			0		
50	-50.0									

H_2O @ 37.2 ft. btoc

Initial development of MW-EE2

page 1 of 2

FIELD RECORD OF WELL DEVELOPMENT

Project Name: ~~Travis Herman~~ Allen	Project No.: 11006407	Date: 3-31-2022
EA Personnel: Travis Herman	Development Method: Surge + pump	
Weather/Temperature/Barometric Pressure: 32°F, 69% humid., 29.84 in Hg		Time: 1045

most cloudy, NW @ 15 mph.

Well No: MW-EE2	Well Condition: New
Well Diameter: 2"	Measurement Reference: TOC

Well Volume Calculations

A. Depth to Water (ft): 37.36 ft. btoc	D. Well Volume/foot: 1.4 0.16
B. Total Well Depth (ft): 46.45 ft. btoc	E. Total Well Volume (gal) [C*D]: 1.45 gal/ft. well volume
C. Water Column Height (ft): 9.09 ft	F. Five Well Volumes (gal): 7.3 gallons

Well Volume/foot (gal/ft): (2" = 0.16) (4" = 0.65) (6" = 1.47) (8" = 2.61) (12" = 5.87)

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes	4 Volumes (*Surge pump)	5 Volumes	6 Volumes
Time (min)	1050	1055	1100	1105	1110	1115	1120
Depth to Water (ft)	37.36	37.36	37.50	37.50		37.50	37.50
Purge Rate ~~(gpm)~~ Lpm	1 L/m	1 L/min	1 L/min	1 L/min →	→	→	
Volume Purged ~~(gal)~~ Liters	0	5L	10 L	15 L	20 L	25L	30 L
pH	5.90	6.54	6.70	6.80	6.76	6.71	6.80
Temperature (°C)	12.8	12.2	11.9	11.9	11.9	12.1	11.7
Conductivity (µS) Re-cal	~~28050~~ M	1767	1757	1717	841	1393	1769
Turbidity (NTU)	271	145	85.6	37.7	22.2	24.3	16.4

Parameter	7 Volumes	8 Volume	9 Volumes	10 Volumes	11 Volumes	12 Volumes (Surge)	13 Volumes
Time (min)	1125	1130	1135	1140	1145	1150	1155
Depth to Water (ft)	37.50	37.50	37.50	37.50	37.50	37.50	37.50
Purge Rate (gpm)	1 L/min →						
Volume Purged ~~(gal)~~ Liters	35 L	40 L	45 L	50L	55 L	60 L	65 L
pH	6.85	6.86	6.84	6.81	6.83	6.86	6.87
Temperature (°C)	11.8	12.1	11.9	11.9	11.9	11.7	11.9
Conductivity (µS)	858	907	849	1711	1750	872	1771
Turbidity (NTU)	12.8	6.95	5.25	~~6.70~~ M 4.53	20.7	13.4	29.3

Comments and Observations:

Pre develop DTW = 37.36 ft. btoc

Total Depth pre-development = 46.45 ft. btoc

Post Develop DTW = 37.50 ft. btoc

Post Develop Total Depth = 46.45 btoc

* Initial development of MW-EE2 *

pg 2 of 2

FIELD RECORD OF WELL DEVELOPMENT

Project Name: Alten	Project No.:	Date: 3-31-22
EA Personnel: Travis H.	Development Method: pump + Surge	
Weather/Temperature/Barometric Pressure: 32°F, 69% humid, 29.84 in Hg mostly cloudy, NW @ 15 mph.		Time:

Well No: MW-EE2	Well Condition: New
Well Diameter: 2"	Measurement Reference: TOC
Well Volume Calculations	
A. Depth to Water (ft):	D. Well Volume/foot:
B. Total Well Depth (ft):	E. Total Well Volume (gal) [C*D]:
C. Water Column Height (ft):	F. Five Well Volumes (gal):
Well Volume/foot (gal/ft): (2" = 0.16) (4" = 0.65) (6" = 1.47) (8" = 2.61) (12" = 5.87)	

(+Surge) (Surge)

Parameter	14 Volumes	15 Volumes	16 Volumes	17 Volumes	18 Volumes	19 Volumes	20 Volumes
Time (min)	1200	1205	1210	1215	1220	1225	1230
Depth to Water (ft)	37.50	37.50	37.50	37.50	37.50	37.50	37.50
Purge Rate ~~(gpm)~~ Lpm	1L/min →						
Volume Purged ~~(gal)~~ Liters	70 L	75L	80L	85L	90L	95L	100 L
pH	6.84	6.75	6.87	6.86	6.82	6.87	6.86
Temperature (°C)	11.9	12.0	11.9	11.8	12.1	12.0	12.1
Conductivity (µS)	837	1778	1771	~~30.8~~ 1782	1778	1690	1760
Turbidity (NTU)	12.6	103	57.6	41.7	155	90.7	66.5

Parameter	21 Volumes	22 Volume	23 Volumes	24 Volumes	25 Volumes	26 Volumes	27 Volumes
Time (min)	1235	1240	1245	1250	1255	1300	~~1305~~
Depth to Water (ft)	37.50	37.50	37.50	37.50	37.50	37.50	
Purge Rate ~~(gpm)~~ Lpm	1L/min →		→				2 hrs 10 min.
Volume Purged ~~(gal)~~ Liters	105L	110 L	115 L	120 L	125L	130 L	
pH	6.77	6.86	6.87	6.77	6.79	6.72	development
Temperature (°C)	12.1	12.1	12.2	12.2	12.2	12.1	
Conductivity (µS)	920	1200	1776	1773	1774	1767	time
Turbidity (NTU)	56.4	43.9	38.2	39.6	32.4	22.0	

Comments and Observations:

* Due to low flow capability of pump provided by drillers, MW-EE2 is planned for a second round of development using pump + Surge method with a stronger pump with higher purge rate.

* Development of MW-EE1 *

FIELD RECORD OF WELL DEVELOPMENT

Project Name: Alten / NDEE	Project No.: 11606407	Date: 4-1-2022
EA Personnel: Travis Hermer	Development Method: pump + surge	
Weather/Temperature/Barometric Pressure: 48°F, mostly sunny, 43% humid, 30.02 in Hg		Time: 1138

Well No: MW-EE1	Well Condition: New
Well Diameter: 2"	Measurement Reference: TOC
Well Volume Calculations	
A. Depth to Water (ft): 42.09 ft. btoc	D. Well Volume/foot: 0.16 gal
B. Total Well Depth (ft): 54.64 ft. btoc	E. Total Well Volume (gal) [C*D]: 2.01 gal.
C. Water Column Height (ft): 12.55 ft.	F. Five Well Volumes (gal): 10.04 gal.
Well Volume/foot (gal/ft): (2" = 0.16) (4" = 0.65) (6" = 1.47) (8" = 2.61) (12" = 5.87)	

Parameter	Beginning	1 Volume	2 Volumes (Surge)	3 Volumes	4 Volumes (Surge)	5 Volumes	6 Volumes (Surge)
Time (min)	1210	1215	1220	1225	1230	1235	1240
Depth to Water (ft)	42.09	42.57	42.56	42.56	42.57	42.57	42.57
Purge Rate (gpm)	2 GPM →			2 GPM →		→	
Volume Purged (gal)	0	10	20	30	40	50 gal	60
pH	7.07	6.61	6.43	6.55	6.57	6.45	6.35
Temperature (°C)	14.4	13.5	13.3	13.2	13.3	13.1	13.5
Conductivity (µS)	1549	1540	1543	1539	1540	1535	1525
Turbidity (NTU)	10.78	4.88	180	7.17	273	9.13	206

Parameter	7 Volumes	8 Volume (Surge)	9 Volumes	10 Volumes (raised pump + surge)	11 Volumes	12 Volumes	13 Volumes (Surge) 1317
Time (min)	1245	1250	~~1300~~ 1255	~~1305~~ 1300	1305	1310	1315
Depth to Water (ft)	42.57	42.57	42.57	42.59	42.59	42.59	42.59
Purge Rate (gpm)	2 GPM →		→				
Volume Purged (gal)	70	80	90	100	110	120	130
pH	6.33	6.49	6.48	6.36	6.30	6.30	6.28
Temperature (°C)	13.5	13.3	13.4	13.4	13.6	13.6	13.5
Conductivity (µS)	1514	1506	1501	1494	1504	1485	1494
Turbidity (NTU)	7.10	159	11.6	3.21	792	62.8	5.07

Comments and Observations:

* 1303 pump raised approx 3ft. off well bottom + surged.

Pre-Development ⇒ DTW = 42.09' btoc DTB = 54.64' btoc

Post Development ⇒ DTW = 42.05' btoc DTB = 54.95' btoc

Pg 2 of 2
MW-EE1 Alter

FIELD RECORD OF WELL DEVELOPMENT

Project Name: Alter	Project No.:	Date: 4-1-22
EA Personnel: Travis H.	Development Method: pump + surge	
Weather/Temperature/Barometric Pressure: pg. 1		Time:

Well No: MW-EE1	Well Condition: New
Well Diameter: 2"	Measurement Reference: TOC
Well Volume Calculations	
A. Depth to Water (ft):	D. Well Volume/foot:
B. Total Well Depth (ft):	E. Total Well Volume (gal) [C*D]:
C. Water Column Height (ft):	F. Five Well Volumes (gal):
Well Volume/foot (gal/ft) (2" = 0.16) (4" = 0.65) (6" = 1.47) (8" = 2.61) (12" = 5.87)	

Parameter	14 Volumes	15 Volumes	16 Volumes (surge)	17 Volumes	18 Volumes (surge)	19 Volumes	20 Volumes
Time (min)	1320	1325	1330	1335	1340	1345	1350
Depth to Water (ft)	42.59	42.59	42.59	42.59	42.59	42.59	42.59
Purge Rate (gpm)	2 GPM →		→				
Volume Purged (gal)	140	150	160	170	180	190	200
pH	6.34	6.40	6.41	6.42	6.41	6.38	6.45
Temperature (°C)	13.6	13.5	13.4	13.4	13.3	13.4	13.4
Conductivity (µS)	1492	1490	1490	1487	1486	1493	1487
Turbidity (NTU)	491	19.8	5.04	215	32.8	287	31.7

Parameter	21 Volumes	22 Volume	23 Volumes	24 Volumes	25 Volumes	26 Volumes	27 Volumes
Time (min)	1355	1400	1405				
Depth to Water (ft)	42.59	42.59	42.59	End			
Purge Rate (gpm)	2 GPM →						
Volume Purged (gal)	210	220	230	Development			
pH	6.59	6.54	6.48				
Temperature (°C)	13.4	13.4	13.5				
Conductivity (µS)	1487	1489	1493				
Turbidity (NTU)	10.62	5.55	2.51				

Comments and Observations:

* 1332 surge and raise pump up screen approx 2 more feet. Pump is mid screen.

* 1343 - Pump is raised to top of screen/just below water table
Perform final surge + continue tracking.

pg. 1 of 1

* Secondary Development of MW-EE2 *

FIELD RECORD OF WELL DEVELOPMENT

Project Name: Alter	Project No.: 1606407	Date: 4-1-22
EA Personnel: Travis H.	Development Method: Pump + surge	
Weather/Temperature/Barometric Pressure: 60°F, most. sunny, 30% humid, 29.92 in Hg		Time: 1504

Well No: MW-EE2	Well Condition: New
Well Diameter: 2"	Measurement Reference: TOC
Well Volume Calculations	
A. Depth to Water (ft): 37.46' btoc	D. Well Volume/foot: 0.16 gal/ft.
B. Total Well Depth (ft): 46.45' btoc	E. Total Well Volume (gal) [C*D]: 1.44 gal
C. Water Column Height (ft): 8.99	F. Five Well Volumes (gal): 7.19 gal.
Well Volume/foot (gal/ft): (2" = 0.16) (4" = 0.65) (6" = 1.47) (8" = 2.61) (12" = 5.87)	

Parameter	Beginning	1 Volume	2 Volumes	3 Volumes (Surge)	4 Volumes	5 Volumes (Surge)	6 Volumes (Surge)
Time (min) 1508 ~~1510~~	1505	~~1515~~ 1518	~~1520~~ 1518	1523	1528	1533	1538
Depth to Water (ft)	37.46	38.07	38.07	38.07	38.07	38.07	38.07
Purge Rate (gpm)	2 GPM →						
Volume Purged (gal)	0	10	20	30	40	50	60
pH	7.02	6.64	6.73	6.67	6.69	6.94	6.79
Temperature (°C) 14.2	~~12.5~~	13.5	13.5	13.5	13.4	13.5	13.3
Conductivity (µS)	1740	1752	1755	1757	1760	1755	1759
Turbidity (NTU)	339	63.0	30.0	1531	761	1382	1084

Parameter	7 Volumes	8 Volume	9 Volumes	10 Volumes	11 Volumes	12 Volumes	13 Volumes
Time (min)	1543	1548	1553				
Depth to Water (ft)	38.07	38.07	38.07				
Purge Rate (gpm)	2 GPM →			Ed Development			
Volume Purged (gal)	70	80	90				
pH	6.79	6.73	6.76	Complete			
Temperature (°C)	13.5	13.3	13.3				
Conductivity (µS)	1773	1773	1772				
Turbidity (NTU)	31.3	9.65	4.94				

Comments and Observations:

* Prior to secondary development => DTW = 37.46' btoc DTB = 46.45' btoc

* Post secondary development => DTW = 37.51' btoc DTB = 46.43' btoc

Low Flow Sampling Purge Form

Well Data

Site	ATEn	Initial Depth to Water	42.02
Well ID	MW-EE1	Final Depth to Water	~~42.02~~ 41.90
Date	4 Apr 22	Controller Setting	CMP4
Well PID	NA	Recharge	10
Sampler(s)	M Dixon, S. Caycoro	Discharge	5
Purge Method	Portable Low Flow	Pressure	60 psi
Sample Method	Portable Low Flow	Cycles / Minute	~~400~~ 4

Observations (weather conditions, well deterioration/damage, evidence of tampering, odor, exemption (if any) and reason, etc.):
New well, 2" dia stickup
Sunny, Colder ≈ 44°F.

Parameters stabilized prior to sample collection? (YES) NO (initials by each sampler) → MD

Samples Collected Volume Collected
2 - 1 quart amber glass / pesticides

Purge Data

Time	Pump Flow Rate (ml/min)	Water Quality Parameters: Temperature (°C)	pH	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to GW (ft BTOC)
Initial Stablization Criteria	*Stable Water Level*	*±1.0 °C*	*±0.1*	*±3%*	*±10%*	*±10mV*	*+/- 10%*	---
1236	—	13.6	7.47	1481	6.50	170.6	29.7	42.02
1241	400	13.6	6.52	1563	4.33	192.9	91.5	41.90
1246	400	13.4	6.47	1588	4.72	211.9	58.9	41.90
1251	400	13.5	6.45	1594	5.18	216.7	25.1	41.90
1256	400	13.4	6.43	1596	5.73	215.7	17.9	41.90
1301	400	13.4	6.43	1596	5.78	213.8	11.8	41.90
1306	400	13.4	6.42	1598	5.54	212.1	7.63	41.90
1311	400	13.4	6.43	1603	5.49	210.6	8.23	41.90
1316	400	13.6	6.44	1605	5.55	209.0	6.69	41.90
1321	400	13.5	6.43	1604	5.53	208.4	5.61	41.90

Total volume purged (L): 12L + 2L = 14L

Sample ID(s): MW-EE1

QA/QC samples: ~~MW-3~~ DUPLICATE / 1500 MW-EE3

Sample Time: 1330

Signature [signature] Date 4 Apr 22

Page 1 of 1

Low Flow Sampling Purge Form

Well Data

Site	AMEn	Initial Depth to Water	37.51
Well ID	MW-EE2	Final Depth to Water	37.51
Date	4 Apr 2022	Controller Setting	CMP4
Well PID	N/A	Recharge	10
Sampler(s)	K Dixon S. Corcoran	Discharge	5
Purge Method	Portable Low Flow	Pressure	30
Sample Method	Portable Low Flow	Cycles / Minute	HAD 4

Observations (weather conditions, well deterioration/damage, evidence of tampering, odor, exemption (if any) and reason, etc.):
well nice, 2" dia stickup,
overcast ~ 40°F, lb wind

Parameters stabilized prior to sample collection? YES NO (initials by each sampler) → KD

Samples Collected Volume Collected
1 - 1 quart Amber pesticide

Purge Data

Time	Pump Flow Rate (ml/min)	Water Quality Parameters: Temperature (°C)	pH	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Turbidity (NTU)	Depth to GW (ft BTOC)
Initial Stablization Criteria	*Stable Water Level*	*±1.0 °C*	*±0.1*	*±3%*	*±10%*	*±10mV*	*+/- 10%*	—
0946	-	9.3	7.23	1766	5.00	199.1	105.1	37.51
0951	400	12.4	6.82	1852	5.08	209.1	820	37.53
0956	400	12.4	6.81	1851	5.09	218.0	59.5	37.53
1001	400	12.2	6.82	1840	5.33	225.1	47.5	37.51
1006	400	12.5	6.82	1833	5.38	226.3	28.4	37.51
1011	400	12.5	6.82	1830	5.44	223.3	21.8	37.51
1016	400	12.5	6.83	1830	5.48	219.4	18.0	37.51
1021	400	12.7	6.83	1830	5.48	216.3	12.7	37.51
1026	400	12.7	6.84	1830	5.48	214.7	12.2	37.51
1031	400	12.7	6.84	1830	5.48	212.4	10.29	37.51

Total volume purged (L): 11L + 6L

Sample ID(s): MW-EE2

QA/QC samples: None

Sample Time: 1035

Signature: KDix Date: 4-4-22

Page 1 of 1

FORMULAE FOR SOLVING RIGHT TRIANGLES

$\text{Sin } A = \frac{a}{c} = \text{Cos } B$ $\quad$ $\text{Cot } A = \frac{b}{a} = \text{Tan } B$

$\text{Cos } A = \frac{b}{c} = \text{Sin } B$ $\quad$ $\text{Sec } A = \frac{c}{b} = \text{Cosec } B$

$\text{Tan } A = \frac{a}{b} = \text{Cot } B$ $\quad$ $\text{Cosec } A = \frac{c}{a} = \text{Sec } B$

Given	Required	Solution
A, c	B, a, b	$B = 90° - A, a = c \sin A, b = c \cos A$
A, b	B, a, c	$B = 90° - A, a = b \tan A, c = \frac{b}{\cos A}$
A, a	B, b, c	$B = 90° - A, b = a \cot A, c = \frac{a}{\sin A}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)}$
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2}$

FORMULAE FOR SOLVING OBLIQUE TRIANGLES

Given	Required	Solution
A, a, b	B, c	$\sin B = \frac{b \sin A}{a}, c = \frac{a \sin C}{\sin A}$
A, B, a	b	$b = \frac{a \sin B}{\sin A}$
a, b, C	A, c	$A + B = 180° - C, c = \frac{a \sin C}{\sin A}$
a, b, c	Area	side $\frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, a	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

MADE IN CHINA

Windy, 35°F, mostly sunny, 3-28-22 ①

0714. Leave for Mead / Alton site. mi = 195789

0815. Meet drillers are arrive at Alton job trailer to sign in.

0849. Discuss logistics / parking with Saichy, construction oversight.

0909. Access plan in place. Use access road to reach top of berm & drive to first location SP-8.

0917. Arrive at SP-8 flagged location. Prepare to ~~de~~ unload geoprobe rig & set up for DPT to groundwater.

0934. Driller has indicated he is in sands at approx 35 ft. bgs. Continue to push to groundwater.

0942. Rods have been pushed to ≈ 50 ft. bgs. Use small rods to push open screen.

0949. Feed new tubing with check valve down rods & into suspected groundwater. Approx 1/2 Liter until dry. Wait for recharge.

0957. Approx 1 Liter has been purged. Appears to be recharging 0.5L-1L per 5 min wait period. Water has cleared up nicely. Prepare to sample SP-8 after recharge.

(2) ⇒ Continued. 3-28-22

1005. Begin setting collecting 1L amber bottle from SP-8 for NDEE, Pesticide analysis.

1007. Liter bottle wase easily filled for SP-8-GW-032822.

New fields is also collecting split samples 2 bottles 1 Liter. each.

1010. Prepare to extract rods/screen + decon all boring equipment.

1025. Borehole has been backfilled with ≈ 2/3 bag bentonite to surface (50# bag)

1027. Move to SP-7 + set up equipment in centerline of berm, approx 9 feet from edge of liner. Prepare to use Geoprobe to push to approx 50 ft. bgs.

1032. Begin DPT rod push at SP-7.

1105. Collect sample SP-7 1 Liter amber. Backfill hole w/ ≈ 35-40 1/2# bentonite (15 in hole to 35 ft)

1137. Decned all equipment. Drive to ~~SP-3~~ SP-4, east side of barb wire fence

1150. Begin push boring at SP-4, east side of barb wire fence.

1158. Stop boring at 42 ft bgs. ⊗

⇒

3-28-22 (3)

1200. Feed new tubing down rods with check valve + prepare to sample

1218. Less water/recharge than previous. 1L has been filled @ 1218. Attempting to fill split samples (2 more Liter ambers)

1230. New Haven is collect equipment blanks on check valve + stainless screen after decon.

1253. Take lunch break before moving to SP-2.

1401. Track rig down berm + setup at SP-2

1410. Begin DPT in center of berm at SP-2 flagged location. Push to approx 50 ft. bgs.

1426. Driller felt sand ≈ 36-40 ft. w/ softer/wet sands approx 46-50 ft. Open screen with small rods

1428. Feed new tubing down hole with check valve + prepare to sample SP-2

1443. Begin collecting sample SP-2.

1446. Bottle approx 1/3 full. Allow to recharge. Water appears foamy inside amber bottle

1453. Sample SP-2-GW-032822 has been collected. Wait for New Fields to collect split samples ⇒

④ ⇒ Continued 3-28-22

1500. All samples collected at SP-2.
Pull all rods + decon all down hole equipment.
1515. Move to SP-3.
1518. Arrive on berm road at SP-3 DPT location (flagged). Set up rig + prepare to push to 50 ft. bgs.
1519. Begin push to 50 ft. bgs.
1526. Rods have been pushed to 50 ft. bgs.
1528. Open screen using small rods.
1532. Feed new tubing down rods + purge initial water from borehole.
. Collect 1 Liter amber bottle from SP-3. Some water has pushed up + out of rods due to possible artesian pressure or outgassing surge.
1600. Having difficulty producing water. Driller believes screen is in water bearing formation but screen is possibly plugged with sediment.
1604. Well is still not producing at SP-3. Decision made to pull rods, load new clean screen, + push deeper past the current 50 ft. bgs.
. Hole has now been advanced to 55 feet bgs. with new clean screen in place.
1619. Open screen + attempt to bring water up through new tubing.

⇒ Continued 3-28-22 ⑤

1619. Screen is open. Run new tubing down rods + attempt to bring to surface.
1623. Temp well is now producing water. Prepare to collect 1 Liter amber + split samples by New Fields. Approx 1/2 - 2/3 Liters groundwater was purged prior to collecting samples.
1835. Sample SP-3-GW-032822 has been collected. Prepare to pull out + backfill with bentonite.
1650. All samples have been collected from SP-3. Pull all equipment + decon all down hole tooling. Prepare rig for loading in trailer + staging in lot until tomorrow.
1715. Arrive at job office park lot. Drop/stage Geoprobe trailer in lot for the night. Sign out in office once completed.
1723. EA + PES employees have signed out at the on-site office. Drive back to EA office.
1809. Arrive at Lincoln office. Unload samples + put in office refridgerator. End day.

MI = 195899.

(6) Tues. 3-29-22

0711 Leave for Allen site
mi = 195899

0800 Arrive at job site office. Wait for drillers to arrive.

0807. Drillers have arrived. Hook up trailer & enter office to sign in & talk with New Fields staff about logistics for the day.

0824 Drive to SP-6 location.

0838. Original flagged location for SP-6 has been trenched & is not accessible. DPT location will be moved approx 18 yds. south & in center of berm road.

0844. Begin DPT push at SP-6 with Geoprobe.

0904 Probe complete to 55 ft. bgs. Open screen & prepare to run in new tubing with clean check valve.

0909 Purge initial water by hand with check valve. Approx ½ Liter was purged.

0911. Collect sample SP-6-GW-032922.

0917. Drillers are deconing all equipment & taking down rig. Walk to SP-1 with NDEE proposed location to determine safe access. backfill with 40# bentonite

0942. Arrive at job office to meet Tom with NDEE. ⇒

⇒ Continued. 3-29-22 (7)

0948. Met Tom at job site office. Discussed DQCR note about strong odor from SP-2 groundwater sample. This was verbally discussed with Sadie from New Fields & asked her to check their samples for similar odor. While observing DPT work at SP-6, Sadie & Travis discussed the SP-2 odor in sample collected on 3-28-22.

0952. Wait in main lot for Lynn w/ PES to arrive. Potable water source in Mead has been located to fill decon water tank.

1005. Sadie w/ New Fields also indicated a strong odor / manure smell from her groundwater also collected from SP-2.

1007. Drive to Mead to locate potable water source prior to arrival of secondary PES truck / trailer.

1020. Water source has been located in Mead at Village of Mead office. Wait at County Store on Hwy 92 for PES to arrive.

1034. Lynn with PES has arrived. Drive to potable water source.

1040. Fill trailer decon tank w/ potable City water source.

1059. Filled w/ approx 100 gal City water. Drive to Allen site ⇒

 ⇒ Continued 3-29-22

1108. Arrive back on site. Have Lynn N. sign in at site office.

1159. Completed logistics drive up SW corner of lagoon to see if SP-1/MW-EE1 is accessible. It was determined that trailers will not make it up the berm, so all equipment/well supplies would need to be transported by truck only + Geoprobe would need to be tracked all the way back to MW-EE1 proposed location. This plan will be discussed with PES. If they are in agreement, we will continue transporting supplies by trucks only.

1310. After inspecting access routes with PES, the far eastern border access road will be used to truck supplies over to well location instead of taking trailers which is not possible. Begin loading equipment into pickup trucks.

1347. All equipment has been loaded. Drive to levy road access point on east edge of property.

1405. Use access road + drive rig + EQ truck to MW-EE1 location.

1425. Drill rig has arrived at MW-EE1 location. Position over proposed location + unload equipment. ⇒

⇒ Continued 3-29-22

1435. Begin auger at MW-EE1. Log auger cuttings (see field sheets)

1610. Pause drilling at ≈ 49 ft bgs. Tagged H_2O at ≈ 48 ft bgs. Allow to recharge + see if water level changes after ≈ 10 min.

1619. H_2O tagged at approx 48' – 48.5' bgs. Currently drilled to ≈ 49' bgs. Continue auger approx 3 more feet to approx depth of 52' bgs. (See boring log)

1633. Begin well install. Drop in 10 ft. screen + riser following screen. 53 ft. TD. Total depth of borehole is ~~52.5 ft. bgs~~. ~~Screen is set 42.5' – 52.5 ft bgs~~

1646. Begin adding filter pack sand from 50# bags. Screen is set ≈ 53' – 43'.

1714. Approx 6.5 – 7 bags filter pack sands added to bring filter pack to approx 41 ft. bgs, 2 feet above top of screen.

1715. Begin adding bentonite chips / plug.

1800. 18 bags on 50 lb. bentonite were added on top of filter pack to 1 ft. bgs. Cut off excess PVC to allow for 2 feet of stickup above ground surface. ⇒

⑩ ⟹ Continued 3-29-22

1810. Measure DTW = 41.47' btoc
Measure DTB = 54.62' btoc
from TOC. (stickup PVC ≈ 2")

1818. Clean up site + walk geoprobe barrel to trailer.

1836. Arrive at bottom of east berm. Load geoprobe into trailer.

1841. Rig is loaded. Drillers will drop trailer in main lot and head out. EA drive back to place IDW labels on drums at MW-EE1.

1852. Place "Non-Hazardous Waste" IDW soil labels on four IDW drums.

1856. All drums have been labeled. Leave site + drive back to Lincoln office. Weather @ 1857 on site.
67°F, mostly cloudy, very windy
SE @ 25+ mph, 50% humidity
29.19 in Hg

©1947. Arrive at Home Depot, N. 27th to purchase 2 keyed locks, can hi vis yellow paint + yellow paint pen.

2018. Arrive at office.
mi = 196004

JAF 3-29-22

37°F, windy, cloudy 3-30-22 ①

0722. Leave for Allen
mi = 196004.

0814. Arrive on site at Allen. Meet PES + sign in at main office. Complete tailgate safety meeting w/ PES crew.

0835. Drive access route w/ Sadie + determine access to MW-EE5.

0841. PES crew is working to clean all augers + containerize all decon water.

0845. Jim from NDEE has arrived on site.

1006. All auger equipment has been cleaned + water containerized + labeled as "Non Haz". Drive to access point as directed by New Fields staff to uncouple large hose + allow access to driving path to MW-EE2.

1045. Arrive at MW-EE2 proposed location. Move drill trailer over + prepare to set up over hole.

1150. Drill rig is over approved borehole location + first auger flight is in place + ready to turn. Wait for drillers to return from lunch.

1205. PES is back on site. Prepare to begin augering for new well MW-EE2.

Continued ⟹

(12) ⇒ Continued 3-30-22

1218. Begin hollow stem auger drilling at MW-EE2 (See boring logs field sheet)

1319. Pause drilling at approx 44 ft. bgs, saturated sands are coming to surface. Wait for groundwater to stabilize augers + attempt to measure DTW inside augers

1331. Measure DTW inside hollow stem augers

DTW = ≈42.5 ft. bgs.

1338. Augers have plug in end + do not allow water in easily. Actual water table is assumed to be shallower than 42.5 ft bgs + will be measured again once screen + riser are in place

1340. Begin installing well screen. Total depth of well is 44 ft. bgs. Screened interval will be 34-44 ft.

1400. Begin adding filter pack sand. Total bgs. Approx 1 foot native sand may have pushed in around bottom 1 ft of screen

1430. Filter pack complete to 32' bgs approx 2' above top of screen

1432. Begin adding bentonite seal to 1' bgs

1459. All augers have been extracted. Continue adding bentonite seal.

1507. Total of 13 bags (50#) bentonite added to bring to ≈1 ft. bgs.

⇒

⇒ Continued 3-30-22 (13)

1512. Protective casing has been added over PVC riser w/ J-plug. Keyed lock will be placed onto locking lid.

1517. Measure DTW post well install inside PVC riser.

DTW btoc = 37.24 ft.
(approx 34.8' bgs.)

1524. Set out bollards and push into ground at 4 corners leaving opening for 4 ft. x 4 ft. x 6" concrete pad to be installed around well casing.

Casing stickup ≈33" above ground surface

1612. All four bollards have been installed around the new well MW-EE2. Load drilling trailers.

1622. Drive to MW-EE1 to place lock on protective casing

1637. Both new wells have been locked.

1642. Stop at site office to sign out + brief w/ New Fields staff.

1705. Drive back to Lincoln office

1754. Arrive at Lincoln office

mi = 196104

3-30-22

(14)

Thurs. 3-31-22

0729. Leave for Alten site
mi = 196104

0816. Arrive on site at Alten. Sign in at office + coordinate logistics with New Fields staff.

0920. We have been approved to drive over hose to access MW-EE2. Drive to well now.

0924. Arrive at MW-EE2. Set up equipment + prepare to develop a well.

0939. Open well and measure pre-develop DTW.

DTW = 37.36 ft. btoc

0945. Calibrate turbidity meter (see field sheet)

0957. Hand surge using check valve to help pre-develop MW well + remove sediment before using submersible pump.

0956. Turb. meter has been calibrated. Calibrate YSI Pro DSS.

1037. All equipment is calibrated. Attempt to start purge with submersible pump.

1050. Begin development / parameter tracking (see field sheet)

1300. End development after over 2hrs. development.

⇒

⇒ Continued, 3-31-2022 (15)

1323. Construct well pad / concrete

1325. Measure post-development DTW + DTB.

DTW = 37.50 ft. btoc

DTB = 46.45 ft. btoc

1444. Concrete pad has been poured into form + smoothed. All bollards + stickup monument have been painted. Well is locked. Drive to office to sign out.

1500. Drive back to Lincoln Ft. + office

1530. Arrive at office. End day

mi = 196191

3-31-22

(16) Fri. 4-1-2022

0721. Pick up development equipment + drive to Atten site.
MT = 196191

0829. Arrive at Atten site. Sign in + discuss plan

0833. Called Justin Raikes + again receive verbal permission to use farm access road to access berm + get to MW-EE1. He said access is fine.

0843. Drive to MW-EE1 berm access gate

0905. Track Grapke through east berm gate + take rig + two pickups back to MW-EE1 via berm roads.

0918. Arrive at MW-EE1. Prepare to install bollards.

0920. Measure pre-development DTW + DTB.
DTW = 42.09 ft btoc
DTB = 54.64 ft. btoc

0944. All IDW drums at MW-EE1 have been labeled with white paint pen. Continue bollard install.

0958. Bollard install completed. Photos collected. Begin digging out pad for concrete. Wait for new pump for development to be delivered on site.

Continued ⇒

⇒ Continued 4-1-2022 @1115 47°F, mostly sunny 45% humid, 30.03 in Hg (17)

1116. Received call from co-worker, pump should be delivered on site in about 10 min.

1128. Received new pump + hose. Drive back over to MW-EE1.

1134. Arrive at MW-EE1. Set up new pump + tubing + prepare to develop well.

1200. Pump is on + discharging into SE lagoon as approved by New Fields. Measure approx flow rate.

1207. Flow rate is 2 GPM. Begin parameter tracking (see field sheet)

1218. Surge pump.

1228. Surge pump.

1237. Surge pump.

1248. Surge pump + continue development.

1303. Surge pump + raise up two feet + re-set. Continue development. Small cuts of vf sand seen in turbidity vial collected at 1303.

1317. Surge pump.

1332. Surge + raise pump up two feet + set. Pump is at mid screen.

1343. Pump is just below top of screen + water table. Surge final time + continue parameter tracking (see field sheets).

Continued ⇒

(18) ⇒ Continued 4-1-2022 Fri.

1406. Purge/development complete. Pull pump/tubing + measure post devel. DTW + DTB.

post develop { DTW = 42.05' btoc
DTB = 54.95' btoc

1435. Complete concrete pad + painting bollards + stickup.

1444. Stop at office, pick up new tubing to re-develop MW-EE2 with stronger pump rate.

1448. Drive to MW-EE2 + set up for secondary development.

1450. Well was developed with lower flow yesterday. This will be secondary development.

prior to devel #2 { DTW - 37.46 ft. btoc
DTB - 46.45 ft. btoc

1508. Begin secondary purge development (see field sheet)

1520. Surge pump.

1530. Surge pump + raise 2 ft. off bottom

1534. Surge pump. Continue development tracking.

1545. RES is leaving the site.

1555. Development is complete. Pull equipment.

⇒

⇒ Continued 4-1-22 (19)

1605. Post development measurements
DTW = 37.51' btoc
DTB = 46.43' btoc

1611. Clean up + replace J-~~Plug~~ Plug + lock well casing. Drive to MW-EE1 to place on lock + inspect surface completion.

1623. Photos collected of completed MW-EE1. Drive locations to make sure DPT sample locations are flagged + labeled.

1637. Both berm access gates along eastern property border have been closed + secured w/ chain.

1639. Flag location notes
SP-8 : Neon yellow, middle of road
SP-7 : Neon yellow, middle of road.
* SP-6 : Neon yellow, edge of road
SP-4 : Neon yellow, just east of orange barbed wire fence.
SP-3 : ~~Pink~~ Flag, labeled, middle of road
* SP-2 : Pink flag, labeled SP2, edge of berm road
* Near trench spoils (soil).

1647. Drive to site office to sign out.

Continued. ⇒

(20) ⇒ Continued 4-1-22

1649. Note IDW locations ⇒

@ MW-EE2; 5 drums (2 GW, 3 soil)

@ MW-EE1; 4 soil IDW drums

@ office parking lot, edge of lot 1 drum w/ clean water.

1658. Signed out at office. Drive back to Lincoln office.

1737. Arrive at EA office. Unload equipment in truck.

1757. Park truck. End of day

MI = 196299

4-1-2022

Attachment:

Analytical Report
Pacific Agricultural Laboratories

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

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EA Engineering, Science and Technology, Inc.
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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-8-GW-032822
Matrix: water

PAL Sample ID: P220369-01
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	ND	0.060 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	ND	0.060 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	ND	0.060 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 87 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	ND	0.060 ug/L	
4/01/22	4/2/22	Clothianidin	ND	0.060 ug/L	
4/01/22	4/1/22	Cyantraniliprole	ND	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-8-GW-032822
Matrix: water

PAL Sample ID: P220369-01
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiabendazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	ND	0.060 ug/L	
4/01/22	4/2/22	Thiophanate methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 95 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-7-GW-032822
Matrix: water

PAL Sample ID: P220369-02
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	ND	0.060 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	ND	0.060 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	ND	0.060 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 85 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	0.11 ug/L	0.060 ug/L	
4/01/22	4/2/22	Clothianidin	0.17 ug/L	0.060 ug/L	
4/01/22	4/1/22	Cyantraniliprole	ND	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-7-GW-032822
Matrix: water

PAL Sample ID: P220369-02
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiabendazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	0.13 ug/L	0.060 ug/L	
4/01/22	4/2/22	Thiophanate methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 99 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-4-GW-032822
Matrix: water

PAL Sample ID: P220369-03
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	ND	0.060 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	0.15 ug/L	0.060 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	ND	0.060 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 92 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	ND	0.060 ug/L	
4/01/22	4/2/22	Clothianidin	3.6 ug/L	0.060 ug/L	
4/01/22	4/1/22	Cyantraniliprole	ND	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-4-GW-032822
Matrix: water

PAL Sample ID: P220369-03
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiabendazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	4.1 ug/L	0.060 ug/L	
4/01/22	4/2/22	Thiophanate methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 96 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-2-GW-032822
Matrix: water

PAL Sample ID: P220369-04
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	17 ug/L	0.60 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	2700 ug/L	60 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	47 ug/L	6.0 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 80 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	1.0 ug/L	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	1.9 ug/L	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	960 ug/L	60 ug/L	
4/01/22	4/2/22	Clothianidin	25 ug/L	1.2 ug/L	
4/01/22	4/1/22	Cyantraniliprole	1.4 ug/L	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-2-GW-032822
Matrix: water

PAL Sample ID: P220369-04
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	5.2 ug/L	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	0.093 ug/L	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	0.80 ug/L	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	38 ug/L	2.0 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	50 ug/L	30 ug/L	
4/01/22	4/1/22	Thiabendazole	0.21 ug/L	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	2000 ug/L	60 ug/L	
4/01/22	4/2/22	Thiophanate methyl	0.14 ug/L	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	0.39 ug/L	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 77 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-3-GW-032822
Matrix: water

PAL Sample ID: P220369-05
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	ND	0.060 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	0.48 ug/L	0.060 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	0.13 ug/L	0.060 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 89 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	1.7 ug/L	0.060 ug/L	
4/01/22	4/2/22	Clothianidin	ND	0.060 ug/L	
4/01/22	4/1/22	Cyantraniliprole	ND	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-3-GW-032822
Matrix: water

PAL Sample ID: P220369-05
Sample Date: 3/28/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	0.17 ug/L	0.10 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	0.45 ug/L	0.060 ug/L	
4/01/22	4/1/22	Thiabendazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	0.073 ug/L	0.060 ug/L	
4/01/22	4/2/22	Thiophanate methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 97 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-6-GW-032922
Matrix: water

PAL Sample ID: P220369-06
Sample Date: 3/29/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
Method: Modified EPA 8270D (GC-MS/MS)					
4/01/22	4/1/22	Bifenthrin	ND	0.060 ug/L	
4/01/22	4/1/22	Captan	ND	0.60 ug/L	
4/01/22	4/1/22	Chlorpyrifos	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorpyrifos-methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Cyfluthrin	ND	0.30 ug/L	
4/01/22	4/1/22	Cypermethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Deltamethrin	ND	0.30 ug/L	
4/01/22	4/1/22	Fludioxonil	ND	0.060 ug/L	
4/01/22	4/1/22	lambda-Cyhalothrin	ND	0.060 ug/L	
4/01/22	4/1/22	Mefenoxam	0.099 ug/L	0.060 ug/L	
4/01/22	4/1/22	Permethrin	ND	0.12 ug/L	
4/01/22	4/1/22	Sedaxane	ND	0.060 ug/L	
4/01/22	4/1/22	Tetraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tioxazafen	ND	0.060 ug/L	

Surrogate Recovery: 93 %
Surrogate Recovery Range: 60-141
(TPP-d15 used as Surrogate)

Method: Modified EPA 8321B (LC-MS/MS)					
4/01/22	4/1/22	Abamectin	ND	0.060 ug/L	
4/01/22	4/1/22	Acetamiprid	ND	0.060 ug/L	
4/01/22	4/1/22	Azoxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Brassinazole	ND	0.060 ug/L	
4/01/22	4/2/22	Carbendazim	ND	0.060 ug/L	
4/01/22	4/2/22	Carboxin	ND	0.060 ug/L	
4/01/22	4/1/22	Chlorantraniliprole	ND	0.060 ug/L	
4/01/22	4/2/22	Clothianidin	0.10 ug/L	0.060 ug/L	
4/01/22	4/1/22	Cyantraniliprole	ND	0.060 ug/L	
4/01/22	4/1/22	Cyproconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Difenoconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Dimoxystrobin	ND	0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Analytical Report

Client Sample ID: SP-6-GW-032922
Matrix: water

PAL Sample ID: P220369-06
Sample Date: 3/29/22
Received Date: 3/31/22

Extraction Date	Analysis Date	Analyte	Amount Detected	Limit of Quantitation	Notes
4/01/22	4/2/22	Dinotefuran	ND	0.060 ug/L	
4/01/22	4/1/22	Epoxiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Fluconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Fluoxastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Imidacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Ipconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Isavuconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Itraconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Metconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Nitenpyram	ND	0.060 ug/L	
4/01/22	4/1/22	Orysastrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Picoxystrobin	ND	0.060 ug/L	
4/01/22	4/2/22	Posaconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Propiconazole	ND	0.060 ug/L	
4/01/22	4/2/22	Prothioconazole	ND	0.10 ug/L	
4/01/22	4/1/22	Pyraclostrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Ravuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Tebuconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiabendazole	ND	0.060 ug/L	
4/01/22	4/1/22	Thiacloprid	ND	0.060 ug/L	
4/01/22	4/1/22	Thiamethoxam	0.11 ug/L	0.060 ug/L	
4/01/22	4/2/22	Thiophanate methyl	ND	0.060 ug/L	
4/01/22	4/1/22	Trifloxystrobin	ND	0.060 ug/L	
4/01/22	4/1/22	Uniconazole	ND	0.060 ug/L	
4/01/22	4/1/22	Voriconazole	ND	0.060 ug/L	

Surrogate Recovery: 102 %
Surrogate Recovery Range: 60-140
(TPP-d15 used as Surrogate)

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Quality Assurance

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/1/22	22D0101-BLK1	Abamectin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Acetamiprid	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Azoxystrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Bifenthrin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Brassinazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Captan	Not Detected	< 0.60 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Chlorantraniliprole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Chlorpyrifos	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Chlorpyrifos-methyl	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Cyantraniliprole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Cyfluthrin	Not Detected	< 0.30 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Cypermethrin	Not Detected	< 0.30 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Cyproconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Deltamethrin	Not Detected	< 0.30 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Difenoconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Dimoxystrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Epoxiconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Fludioxonil	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Fluoxastrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Imidacloprid	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Ipconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Isavuconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	lambda-Cyhalothrin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Mefenoxam	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Metconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Orysastrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Permethrin	Not Detected	< 0.12 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Picoxystrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Propiconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Pyraclostrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Ravuconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Sedaxane	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Tebuconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Tetraconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Thiabendazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Thiacloprid	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Thiamethoxam	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Tioxazafen	Not Detected	< 0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/1/22	22D0101-BLK1	Trifloxystrobin	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Uniconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/1/22	22D0101-BLK1	Voriconazole	Not Detected	< 0.060 ug/L	

Method Blank Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/2/22	22D0103-BLK1	Carbendazim	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Carboxin	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Clothianidin	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Dinotefuran	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Fluconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Itraconazole	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Nitenpyram	Not Detected	< 0.060 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Posaconazole	Not Detected	< 0.10 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Prothioconazole	Not Detected	< 0.10 ug/L	
4/1/22	4/2/22	22D0103-BLK1	Thiophanate methyl	Not Detected	< 0.060 ug/L	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/1/22	22D0101-BS1	Abamectin	95	60-140	
4/1/22	4/1/22	22D0101-BSD1	Abamectin	103	60-140	
4/1/22	4/1/22	22D0101-BS1	Acetamiprid	102	60-140	
4/1/22	4/1/22	22D0101-BSD1	Acetamiprid	98	60-140	
4/1/22	4/1/22	22D0101-BS1	Azoxystrobin	90	60-140	
4/1/22	4/1/22	22D0101-BSD1	Azoxystrobin	93	60-140	
4/1/22	4/1/22	22D0101-BS1	Bifenthrin	85	63-142	
4/1/22	4/1/22	22D0101-BSD1	Bifenthrin	84	63-142	
4/1/22	4/1/22	22D0101-BS1	Brassinazole	100	60-140	
4/1/22	4/1/22	22D0101-BSD1	Brassinazole	104	60-140	
4/1/22	4/1/22	22D0101-BS1	Captan	103	32-119	
4/1/22	4/1/22	22D0101-BSD1	Captan	95	32-119	
4/1/22	4/1/22	22D0101-BS1	Chlorantraniliprole	98	60-140	
4/1/22	4/1/22	22D0101-BSD1	Chlorantraniliprole	104	60-140	
4/1/22	4/1/22	22D0101-BS1	Chlorpyrifos	80	69-128	
4/1/22	4/1/22	22D0101-BSD1	Chlorpyrifos	79	69-128	
4/1/22	4/1/22	22D0101-BS1	Chlorpyrifos-methyl	80	61-131	
4/1/22	4/1/22	22D0101-BSD1	Chlorpyrifos-methyl	79	61-131	
4/1/22	4/1/22	22D0101-BS1	Cyantraniliprole	94	60-140	
4/1/22	4/1/22	22D0101-BSD1	Cyantraniliprole	95	60-140	
4/1/22	4/1/22	22D0101-BS1	Cyfluthrin	84	50-158	
4/1/22	4/1/22	22D0101-BSD1	Cyfluthrin	82	50-158	
4/1/22	4/1/22	22D0101-BS1	Cypermethrin	88	48-163	
4/1/22	4/1/22	22D0101-BSD1	Cypermethrin	82	48-163	
4/1/22	4/1/22	22D0101-BS1	Cyproconazole	99	60-140	
4/1/22	4/1/22	22D0101-BSD1	Cyproconazole	98	60-140	
4/1/22	4/1/22	22D0101-BS1	Deltamethrin	91	59-148	
4/1/22	4/1/22	22D0101-BSD1	Deltamethrin	88	59-148	
4/1/22	4/1/22	22D0101-BS1	Difenoconazole	98	60-140	
4/1/22	4/1/22	22D0101-BSD1	Difenoconazole	101	60-140	
4/1/22	4/1/22	22D0101-BS1	Dimoxystrobin	99	60-140	
4/1/22	4/1/22	22D0101-BSD1	Dimoxystrobin	100	60-140	
4/1/22	4/1/22	22D0101-BS1	Epoxiconazole	95	60-140	
4/1/22	4/1/22	22D0101-BSD1	Epoxiconazole	101	60-140	
4/1/22	4/1/22	22D0101-BS1	Fludioxonil	90	49-143	
4/1/22	4/1/22	22D0101-BSD1	Fludioxonil	87	49-143	
4/1/22	4/1/22	22D0101-BS1	Fluoxastrobin	100	60-140	
4/1/22	4/1/22	22D0101-BSD1	Fluoxastrobin	103	60-140	
4/1/22	4/1/22	22D0101-BS1	Imidacloprid	98	60-140	
4/1/22	4/1/22	22D0101-BSD1	Imidacloprid	97	60-140	
4/1/22	4/1/22	22D0101-BS1	Ipconazole	98	60-140	
4/1/22	4/1/22	22D0101-BSD1	Ipconazole	98	60-140	
4/1/22	4/1/22	22D0101-BS1	Isavuconazole	95	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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Sherwood, OR 97140

EA Engineering, Science and Technology, Inc.
221 Sun Valley Blvd., Suite D
Lincoln, NE 68528

Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/1/22	22D0101-BSD1	Isavuconazole	93	60-140	
4/1/22	4/1/22	22D0101-BS1	lambda-Cyhalothrin	84	61-141	
4/1/22	4/1/22	22D0101-BSD1	lambda-Cyhalothrin	83	61-141	
4/1/22	4/1/22	22D0101-BS1	Mefenoxam	100	69-130	
4/1/22	4/1/22	22D0101-BSD1	Mefenoxam	91	69-130	
4/1/22	4/1/22	22D0101-BS1	Metconazole	95	60-140	
4/1/22	4/1/22	22D0101-BSD1	Metconazole	100	60-140	
4/1/22	4/1/22	22D0101-BS1	Orysastrobin	94	60-140	
4/1/22	4/1/22	22D0101-BSD1	Orysastrobin	101	60-140	
4/1/22	4/1/22	22D0101-BS1	Permethrin	85	62-146	
4/1/22	4/1/22	22D0101-BSD1	Permethrin	83	62-146	
4/1/22	4/1/22	22D0101-BS1	Picoxystrobin	84	60-140	
4/1/22	4/1/22	22D0101-BSD1	Picoxystrobin	99	60-140	
4/1/22	4/1/22	22D0101-BS1	Propiconazole	101	60-140	
4/1/22	4/1/22	22D0101-BSD1	Propiconazole	96	60-140	
4/1/22	4/1/22	22D0101-BS1	Pyraclostrobin	96	60-140	
4/1/22	4/1/22	22D0101-BSD1	Pyraclostrobin	99	60-140	
4/1/22	4/1/22	22D0101-BS1	Ravuconazole	94	60-140	
4/1/22	4/1/22	22D0101-BSD1	Ravuconazole	97	60-140	
4/1/22	4/1/22	22D0101-BS1	Sedaxane	89	60-140	
4/1/22	4/1/22	22D0101-BSD1	Sedaxane	85	60-140	
4/1/22	4/1/22	22D0101-BS1	Tebuconazole	98	60-140	
4/1/22	4/1/22	22D0101-BSD1	Tebuconazole	94	60-140	
4/1/22	4/1/22	22D0101-BS1	Tetraconazole	85	58-143	
4/1/22	4/1/22	22D0101-BSD1	Tetraconazole	87	58-143	
4/1/22	4/1/22	22D0101-BS1	Thiabendazole	60	60-140	
4/1/22	4/1/22	22D0101-BSD1	Thiabendazole	78	60-140	
4/1/22	4/1/22	22D0101-BS1	Thiacloprid	97	60-140	
4/1/22	4/1/22	22D0101-BSD1	Thiacloprid	101	60-140	
4/1/22	4/1/22	22D0101-BS1	Thiamethoxam	92	60-140	
4/1/22	4/1/22	22D0101-BSD1	Thiamethoxam	92	60-140	
4/1/22	4/1/22	22D0101-BS1	Tioxazafen	79	60-140	
4/1/22	4/1/22	22D0101-BSD1	Tioxazafen	77	60-140	
4/1/22	4/1/22	22D0101-BS1	Trifloxystrobin	97	60-140	
4/1/22	4/1/22	22D0101-BSD1	Trifloxystrobin	100	60-140	
4/1/22	4/1/22	22D0101-BS1	Uniconazole	95	60-140	
4/1/22	4/1/22	22D0101-BSD1	Uniconazole	99	60-140	
4/1/22	4/1/22	22D0101-BS1	Voriconazole	99	60-140	
4/1/22	4/1/22	22D0101-BSD1	Voriconazole	96	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

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EA Engineering, Science and Technology, Inc.
221 Sun Valley Blvd., Suite D
Lincoln, NE 68528

Report Number: P220369
Report Date: April 07, 2022
Client Project ID: 1606407

Blank Spike Data **Matrix:** water

Extraction Date	Analysis Date	Batch QC Sample #	Analyte	% Recovery	Expected % Recovery	Notes
4/1/22	4/2/22	22D0103-BS1	Carbendazim	97	60-140	
4/1/22	4/2/22	22D0103-BSD1	Carbendazim	101	60-140	
4/1/22	4/2/22	22D0103-BS1	Carboxin	99	60-140	
4/1/22	4/2/22	22D0103-BSD1	Carboxin	99	60-140	
4/1/22	4/2/22	22D0103-BS1	Clothianidin	100	60-140	
4/1/22	4/2/22	22D0103-BSD1	Clothianidin	97	60-140	
4/1/22	4/2/22	22D0103-BS1	Dinotefuran	101	60-140	
4/1/22	4/2/22	22D0103-BSD1	Dinotefuran	107	60-140	
4/1/22	4/2/22	22D0103-BS1	Fluconazole	106	60-140	
4/1/22	4/2/22	22D0103-BSD1	Fluconazole	105	60-140	
4/1/22	4/2/22	22D0103-BS1	Itraconazole	108	60-140	
4/1/22	4/2/22	22D0103-BSD1	Itraconazole	113	60-140	
4/1/22	4/2/22	22D0103-BS1	Nitenpyram	100	60-140	
4/1/22	4/2/22	22D0103-BSD1	Nitenpyram	100	60-140	
4/1/22	4/2/22	22D0103-BS1	Posaconazole	87	60-140	
4/1/22	4/2/22	22D0103-BSD1	Posaconazole	106	60-140	
4/1/22	4/2/22	22D0103-BS1	Prothioconazole	97	60-140	
4/1/22	4/2/22	22D0103-BSD1	Prothioconazole	102	60-140	
4/1/22	4/2/22	22D0103-BS1	Thiophanate methyl	101	60-140	
4/1/22	4/2/22	22D0103-BSD1	Thiophanate methyl	105	60-140	

This analytical report complies with the ISO/IEC 17025:2017 Quality Standard.

Rick Jordan, Laboratory Director

Matrix SCIENCES | PAL PACIFIC AGRICULTURAL LABORATORY

ANALYTICAL REQUEST/CHAIN OF CUSTODY

Pacific Agricultural Laboratory
21830 S.W. Alexander Ln. • Sherwood, OR 97140
Tel 503.626.7943 • pacaglab.com

Form F011, Rev 04

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PAL Project # 220369

CLIENT INFO

Company: EA Engineering, Science, and Technology, Inc., PBC
Contact: Dan Bigbee
Address: 221 Sun Valley Blvd, Suite D
City: Lincoln State: NE Zip: 68528
Telephone: 402-476-3766 Mobile Phone: 402-304-6104
Email(s): dbigbee@eaest.com
Project #: 1606407 Purchase Order #: 23574

Requested Analysis

Selected Pesticides in Water EPA 8321B-EPA 8270D: Fo235, no Gly/Glu

Requested Turnaround Time

☐ Standard
☑ Rush 5 day (please specify)

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Selected Pesticides in Water EPA 8321B-EPA 8270D	Fo235, no Gly/Glu				Comments
220369-01	SP-8-GW-032822	3-28-22	1005	GW	Glass	1						Rush Analysis
" -02	SP-7-GW-032822	3-28-22	1105	GW	Glass	1						Rush Analysis
" -03	SP-4-GW-032822	3-28-22	1218	GW	Glass	1						Rush Analysis
" -04	SP-2-GW-032822	3-28-22	1453	GW	Glass	1						Rush Analysis
" -05	SP-3-GW-032822	3-28-22	1635	GW	Glass	1						Rush Analysis
-06	SP-6-GW-032922	3-29-22	0911	GW	Glass	1						Rush Analysis

Relinquished by: [signature] DATE 3-30-22 TIME 1557
SIGNATURE

Received by [signature] DATE 3-31-22 TIME 1000
SIGNATURE

Relinquished by: _____ DATE _____ TIME _____
SIGNATURE

Received by _____ DATE _____ TIME _____
SIGNATURE

Lab Comments: Quote is 21-D05 but does not include Glyphosate + Glufosinate

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WORK ORDER

P220386

Sample Receipt Acknowledgment

Project Manager: Rick Jordan
Project Number: 1606407

Report To:

EA Engineering, Science and Technology, Inc.
Dan Bigbee
221 Sun Valley Blvd., Suite D
Lincoln, NE 68528
Phone: (402) 476-3766

Date Received: 04/05/2022 11:10 AM

Cooler Data

Samples Received at:	**1.6°C**				
Custody Seals	(Yes)	COC/Labels Agree	(Yes)	Received On Ice	(Yes)
Containers Intact	(Yes)	Preservation Confirmed	(No)		

Client ID: **MW-EE1** Matrix: water, Sampled: 04/04/22
PAL ID: **P220386-01**

Requested Analysis:

Pesticides (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8270D (GC-MS/MS), Due 04/12/22*

Client ID: **MW-EE2** Matrix: water, Sampled: 04/04/22
PAL ID: **P220386-02**

Requested Analysis:

Pesticides (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8270D (GC-MS/MS), Due 04/12/22*

Client ID: **MW-EE3** Matrix: water, Sampled: 04/04/22
PAL ID: **P220386-03**

Requested Analysis:

Pesticides (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8321B (LC-MS/MS), Due 04/12/22*

Multiresidue Pesticide Profile (500mL extraction), *Modified EPA 8270D (GC-MS/MS), Due 04/12/22*

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ANALYTICAL REQUEST/CHAIN OF CUSTODY

Pacific Agricultural Laboratory
21830 S.W. Alexander Ln. • Sherwood, OR 97140
Tel 503.626.7943 • pacaglab.com

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Page 1 of 1

PAL Project # 220386

CLIENT INFO

Company: EA Engineering, Science, and Technology, Inc., PBC
Contact: Dan Bigbee
Address: 221 Sun Valley Blvd, Suite D
City: Lincoln State: NE Zip: 68528
Telephone: 402-476-3766 Mobile Phone: 402-304-6104
Email(s): dbigbee@eaest.com
Project #: 1606407 Purchase Order #: 23574

Requested Analysis

Requested Turnaround Time
☐ Standard
☑ Rush 5 day (please specify)

PAL ID (Lab use only)	Client Sample ID	Sample Date	Sample Time	Sample Type	Container Type	No. of Containers	Selected Pesticides in Water EPA 8321B-EPA 8270D					Comments
220386-01	MW-EE1	4-4-2022	1330	GW	Glass	1	x					Rush Analysis
" -02	MW-EE2	4-4-2022	1035	GW	Glass	1	x					Rush Analysis
" -03	MW-EE3	4-4-2022	1500	GW	Glass	1	x					Rush Analysis

Relinquished by: [signature] (SIGNATURE) DATE 4Apr22 TIME 1715
Received by: [signature] (SIGNATURE) DATE 4.5.22 TIME 1110
Relinquished by: (SIGNATURE) DATE TIME
Received by: (SIGNATURE) DATE TIME

Lab Comments: Quote is 21-D05 but samples should not include Glyphosate + Glufosinate

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