



**AMENDED WELL REPLACEMENT AND
2021 GROUNDWATER MONITORING AND
SAMPLING REPORT**

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, Washington
Agreed Order No. 03TCPER-5649

May 13, 2022

Amended April 10, 2023

Submitted to:

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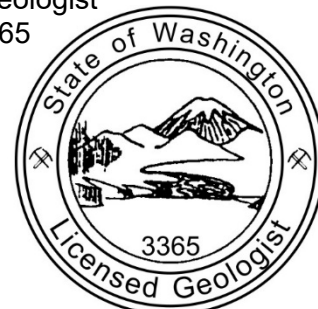
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1.0 INTRODUCTION

On behalf of Nutrien Ag Solutions, Inc. (Nutrien), Rubik is submitting this Amended Well Replacement And 2021 Groundwater Monitoring and Sampling Report (Report) for the Nutrien facility located at 3482 Glade Road North in Pasco, Washington (site, **Figure 1**). Field activities were completed between November 17 and 21, 2021 in accordance with the August 2021 Amended Well Replacement Work Plan. The Amended Work Plan included recommendations made by Washington Department of Ecology (Ecology) in their August 20, 2021 approval email. The original Report was submitted to Ecology on May 13, 2022. Following conversations with Ecology on February 1, 2023 the Report was amended to include information supporting the decommissioning of monitoring well MW-19.

Groundwater beneath the site is monitored and sampled annually according to Agreed Order No. 03TCPER-5649 (Ecology, 2003a).

1.1 Objective and Scope of Work

The objective of this project was to:

- Replace existing monitoring wells to ensure groundwater monitoring and sampling data is representative of the water bearing zone beneath the site.

The scope of work included:

- Replacing onsite monitoring wells MW-4, MW-14, and MW-15 due to silt accumulation and age; and
- Decommissioning offsite monitoring wells MW-16 and MW-17 due to access limitations and a lack of water.

1.2 Indicator Hazardous Substance

The only indicator hazardous substance (IHS) remaining in groundwater is nitrate because concentrations continue to exceed the cleanup concentration. The cleanup concentration for nitrate as nitrogen (-N) (17.7 milligrams per liter [mg/L]) was established in the 2003 Cleanup Action Plan (CAP) based on concentrations in former upgradient monitoring wells MW-6 and MW-7 (Ecology, 2003b). The point of compliance (POC) wells are defined in the Agreed Order as MW-4 and MW-14.

Monitoring well locations are shown on **Figure 2** and construction details are summarized in **Table 1**.

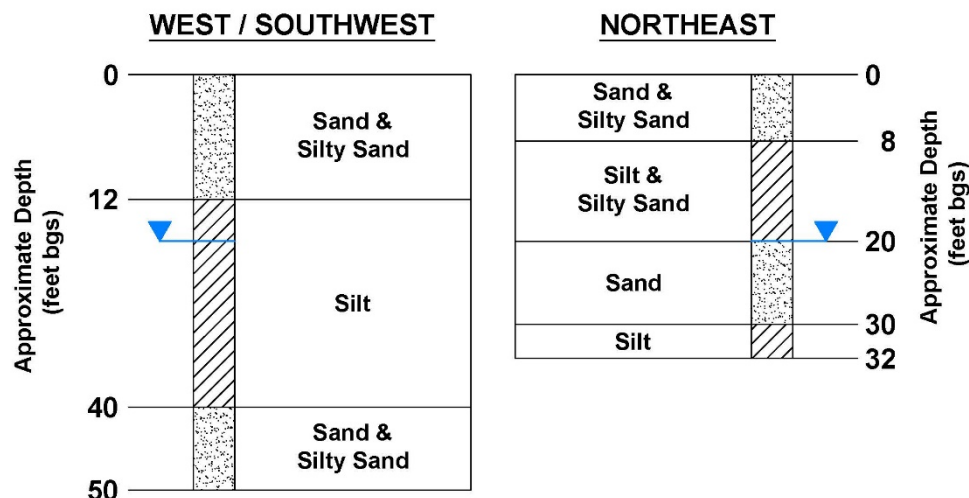
2.0 SITE DESCRIPTION

The site has been an active retail agricultural facility since 1973. Nutrien (formerly, Crop Production Services) has owned and operated the site since 1995 and uses it for retail sales of bulk liquid and dry fertilizers, liquid pesticides, and pre-packaged fertilizers and pesticides. Current and former site features are shown on **Figure 2**.

3.0 GEOLOGY AND HYDROGEOLOGY

3.1 Geology

The geology beneath the site is summarized below:



A cross section path location is shown on **Figure 3** and a geologic cross section is included as **Figure 4**.

3.2 Hydrogeology

In November 2021 the depth to water in site monitoring wells ranged between 18 feet and 22 feet below the ground surface (bgs). Groundwater flowed to the southwest at a gradient of 0.02 feet per foot (ft/ft), which is consistent with historical results.

November 2021 groundwater elevation data are provided in **Table 2** and groundwater elevations and contours are shown on **Figure 5**, along with a rose diagram depicting historical flow direction. Historical groundwater elevation data are provided in **Tables 3** and **4**.

4.0 MONITORING WELL DECOMMISSIONING & INSTALLATION

Onsite monitoring wells MW-4, MW-14, MW-15 were decommissioned and replaced with new monitoring wells MW-4R, MW-14R, and MW-15R. Well MW-15R was installed near the southern downgradient property boundary and away from the location proposed in the work plan due to the heavy vehicle traffic in the proposed area. Offsite wells MW-16 and MW-17 were decommissioned. Well locations are shown on **Figure 2**.

4.1 Permitting and Access

Prior to the start of field work, Cascade Drilling (Cascade) submitted well decommissioning Notices of Intent (NOIs) to Ecology. Well MW-17 was located on Franklin County-owned property and a Permission to Construct permit was required by the County to decommission the well. The permit is presented as **Appendix A**. The owner of the parcel where well MW-16 was located

granted access to the property to decommission the well. Because wells MW-4 and MW-15 were located on property owned by Nutrien, no permits were required to decommission the wells. Rubik notified Ecology, Franklin County, and the offsite property owner at least 48 hours prior to the field work.

4.2 Health and Safety Plan

A site-specific Health and Safety Plan (HASP) was reviewed and signed by all field personnel, including subcontractors, prior to work initiation. The HASP identified potential health and safety hazards for each phase of site work and included requirements and procedures for protection. The HASP was maintained onsite during the field activities.

4.3 Utility Clearance

Washington Utility Notification Center was notified a minimum of 48 hours in advance of subsurface activities to identify underground utilities. A private utility locator also performed a geophysical survey in the vicinity of each drilling location to identify potential utilities or other subsurface obstructions.

4.4 Monitoring Well Decommissioning

Monitoring wells MW-4 and MW-14 through MW-17 were decommissioned by removing the well box and approximately five feet of well casing then perforating the remaining casing in accordance with Washington Administrative Code (WAC) 173-160. The resulting annular space was sealed using neat cement delivered through a tremie pipe from the bottom of the borehole to approximately five feet bgs. Dry bentonite was placed in the remaining annulus to just below the ground surface and the remainder of the void was filled with soil to match the surrounding surface conditions.

4.5 Monitoring Well Installation

Monitoring wells MW-4R, MW-14R, and MW-15R were installed by Cascade using a truck-mounted rotary sonic drilling rig, which utilizes telescoping temporary conductor casing during drilling. Soil cores were collected continuously during drilling and logged in the field for geology using the Unified Soil Classification System (USCS). The well boreholes were terminated at 36 feet bgs and the conductor casing was then removed in stages as the annular space was backfilled with the well construction materials. Based on conditions observed during drilling, all replacement wells were constructed to the same depth with the same screen interval.

The wells were constructed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing with 0.010-inch slotted screen installed between 20 and 35 feet bgs. The annular space between the borehole wall and the well screen was backfilled with a silica sand filter pack to approximately 2 feet above the top of the well screen. A 2-foot thick hydrated bentonite pellet seal was installed above the filter pack. A sanitary seal comprised of neat cement and powdered bentonite was installed from the top of the bentonite seal to approximately 2 feet bgs.

The wells were completed in above-ground monuments set in a concrete pad and surrounded by bollards. All wells were secured with a locking cap. The boring logs and well construction diagrams are included as **Appendix B**. Well construction details are also summarized in **Table 1**.

4.6 Well Development

The wells were developed a minimum of 48 hours after installation by a combination of bailing, surging, and pumping. The total well depth, depth to groundwater and water quality parameters temperature, pH, specific conductance, dissolved oxygen (DO), oxidation reduction potential (ORP) and turbidity were measured prior to the start and periodically during development at each well. Development continued until at least ten casing volumes of water were removed. The well development logs are included as **Appendix C**.

4.7 Well Survey

The location, ground surface elevation, and top of casing elevation of the new wells were measured by AHBL, a Washington-licensed Professional Land Surveyor following installation. The survey report is included as **Appendix D**.

4.8 Decontamination and Waste Management

Down-hole drilling equipment was decontaminated prior to decommissioning or drilling each well using high-pressure cleaning equipment. The decontamination rinsate, soil cuttings generated during drilling, and water generated during well development were placed into separate 55-gallon drums and labeled, dated, and staged on site prior to characterization and disposal at an appropriate off-site facility.

5.0 GROUNDWATER MONITORING AND SAMPLING

Groundwater monitoring and sampling activities were conducted at the site on November 21, 2021. Five wells were gauged for depth to water and sampled. The depth to water in the wells ranged between 18 feet and 22 feet bgs and groundwater flowed to the southwest at a gradient of 0.02 feet per foot (ft/ft), which is consistent with historical results. Graphs depicting historical groundwater elevation trends in each well are provided as **Appendix E**.

5.1 Groundwater Sampling and Analysis

A low flow pump and dedicated tubing were used to purge and sample from a discrete point in the saturated screened interval of the wells. The water quality parameters were recorded on field sheets provided in **Appendix F**. A groundwater sample was collected from the well after the parameters stabilized.

The samples were collected in laboratory-supplied containers, labeled, logged onto a chain of custody, and stored in a cooler maintained at approximately 4 degrees Celsius. Samples were shipped to the laboratory and analyzed for nitrate-N + nitrite-N by EPA method 353.2.

5.2 Groundwater Analytical Results

Groundwater analytical results for the November 2021 sampling event are summarized in **Table 2** and on **Figure 6**. Historical groundwater analytical data are summarized in **Tables 3** and **4**. Graphs comparing historical COC concentrations and groundwater elevations over time for selected wells are included as **Appendix E**. Laboratory analytical results and chain of custody documents are included as **Appendix G**.

5.3 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) protocols included reviewing the analytical data for qualifiers, accuracy, precision, conformance with holding times, and method detection limits. A blind duplicate sample (DUP) was collected from well MW-19 and submitted to the laboratory for analysis. All data were acceptable for the purposes of this investigation.

5.4 Purge Water Disposal

Purge water generated during the sampling event was containerized with the decontamination and well development water and will be disposed of at an appropriate off-site facility following characterization.

6.0 PROPOSED DECOMMISSIONING OF MW-19

Monitoring well MW-19 is a flush-mounted well located down-slope and downgradient of the active liquid fertilizer storage and loading/rinsing area (see Figure 2). The well was installed in 2008 to monitor the effectiveness of future remedial actions to address nitrate impacted groundwater (SLR, 2008). The nitrate-N concentrations in MW-19 have exceeded the site-specific cleanup level of 17.7 mg/L since installation (see **Table 3** and **Appendix E**).

In 2012, an injection gallery was installed upgradient of MW-19 for injection of a carbon source (LactOil) to promote Enhanced In-Situ Bioremediation (EISB) of nitrate in groundwater. Soil excavations were also conducted near the liquid fertilizer tank farm at that time. Following the remediation activities, nitrate-N concentrations in well MW-19 continued to exceed the cleanup concentration. Following the completion of additional pilot study, it was determined that EISB was not effective at reducing nitrate concentrations in the groundwater and the injection gallery was removed in 2020.

Since remedial activities in the areas upgradient of MW-19 have concluded, the well is no longer necessary to serve its intended purpose. Additionally, the flush-mounted well could provide a potential conduit to groundwater for surface water flow from the loading and rinsing areas if containment structures in these areas were to fail or become overloaded. Therefore, it is recommended that MW-19 be decommissioned.

7.0 SUMMARY AND PATH FORWARD

November 2021 groundwater flow direction and nitrate concentrations in the new well network were consistent with historical data from the replaced wells. The monitoring wells will be monitored and sampled every 5 years to coincide with Ecology's site review frequency, as defined in the CAP and according to WAC 173-340-420.

Annual inspection of the asphalt caps covering impacted site soils will continue to be performed according to the operation and maintenance (O&M) plan in the 2004 Remedial Action Work Plan (Maul Foster & Alongi, 2004). Deficiencies will be addressed as needed, and the recommended 1-inch pavement overlay of the caps will continue to be performed every 15 years, per the O&M plan.

Future monitoring and sampling will be conducted in June for consistency with historical data, and results will be reported to Ecology prior to their 5-year review. Groundwater monitoring and sampling reports will, at a minimum, contain the following information:

- A description of the groundwater monitoring and sampling procedures;
- Well sampling field logs;
- Groundwater sampling analytical results and laboratory reports; and
- A summary of the historical groundwater monitoring and sampling data.

The next monitoring and sampling event will be conducted in June 2026, according to the sampling plan summarized in **Table 5**. If an increase in nitrate concentrations outside of the historical range is observed in monitoring wells along the downgradient property boundary during future sampling events, the downgradient property owners will be contacted again to determine if access is feasible for replacement of the offsite monitoring wells.

Nutrien continues to try to get access to the east side of the site that is leased from Burlington Northern Santa Fe Corp. Railway (BNSF). Once access has been granted by BNSF, monitoring wells MW-5, MW-10, and MW-18 and the remaining injection galleries will be decommissioned in accordance with the September 2020 Amended Site Improvements Work Plan, approved by Ecology in an August 20, 2020 email. Pending approval by Ecology, well MW-19 will also be decommissioned at that time. A report describing the decommissioning activities will be submitted to Ecology after the work has been completed.

8.0 REFERENCES

WA Department of Ecology (Ecology), 2003a. Agreed Order No. 03TCPER-5649, Western Farm Service Paso Facility, 3482 Glade Road North, Pasco, Washington, 99302, October 9.

WA Department of Ecology, Toxics Cleanup Program (Ecology), 2003b. Western Farm Service Paso Facility (Glade Road Site) Cleanup Action Plan, July.

Maul Foster & Alongi, Inc., 2004. Draft Remedial Action Work Plan, Glade Road Facility, Pasco, Washington, January 8.

SLR International Corporation (SLR), 2008. Draft Investigation Report, Glade Road Facility, Pasco, Washington, October 20.

FIGURES

WELL REPLACEMENT & 2021 GROUNDWATER MONITORING AND SAMPLING REPORT - AMENDED

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023



320 Flint Street
Reno, Nevada 89501
(775) 622-0857

VICINITY MAP

**NUTRIEN - PASCO BRANCH
3482 GLADE ROAD NORTH
PASCO, WASHINGTON**

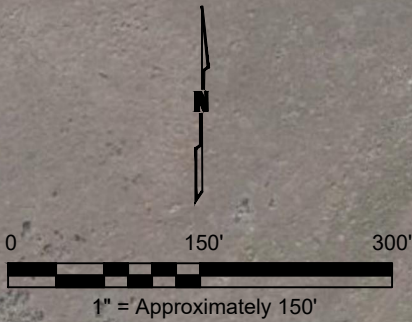
DESIGNED BY: SPF	DETAILED BY: SPF	CHECKED BY: TLL
DATE: 1/28/2022		
PROJECT NO.: 03031-2022		PLOT SCALE: APPROX. 1" = 2,000'

FIGURE 1



LEGEND

- MONITORING WELL
- DECOMMISSIONED MONITORING WELLS
- DECOMMISSIONED INJECTION WELLS
- FACILITY INDUSTRIAL WELL
- MONITORING WELL (Approved For Destruction Pending Access)
- INJECTION GALLERIES (Approved For Destruction Pending Access)
- INSTITUTIONAL CONTROL AREA (Asphalt)
- INSTITUTIONAL CONTROL AREA (Interior Concrete)
- FORMER FEATURE
- APPROXIMATE PROPERTY LINE
- APPROXIMATE BNSF LEASE AREA BOUNDARY



Map Data: Google (Imagery Date: April 4, 2021)



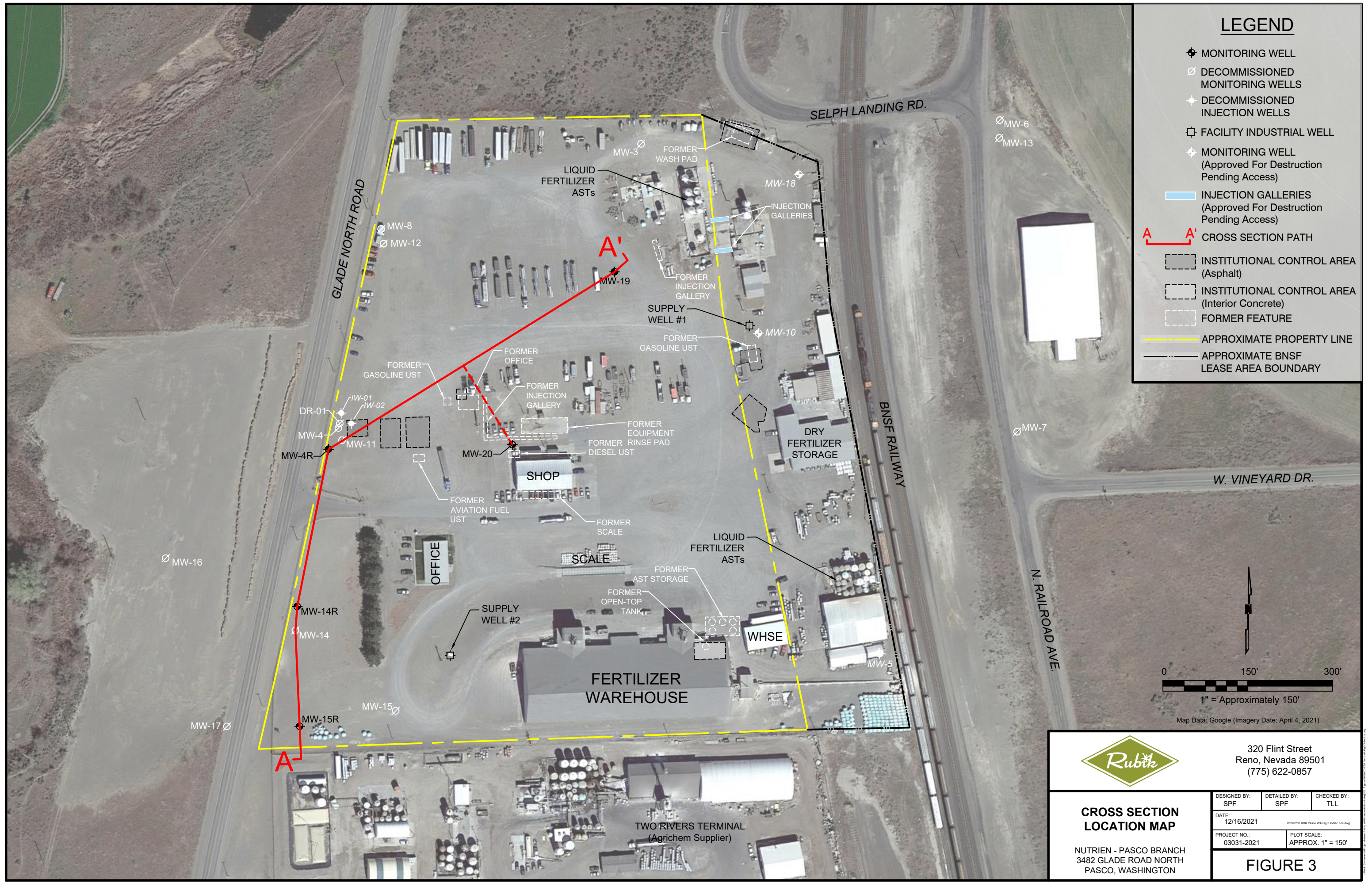
320 Flint Street
Reno, Nevada 89501
(775) 622-0857

SITE MAP

NUTRIEN - PASCO BRANCH
3482 GLADE ROAD NORTH
PASCO, WASHINGTON

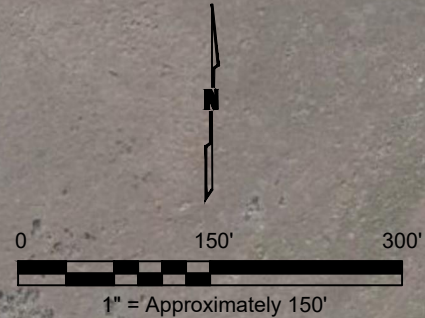
DESIGNED BY: SPF	DETAILED BY: SPF	CHECKED BY: TLL
DATE: 12/16/2021	20211216 RUBK Pasco WA Fig 2 Site Map_MASTER.dwg	
PROJECT NO.: 03031-2021	PLOT SCALE: APPROX. 1" = 150'	

FIGURE 2



LEGEND

- MONITORING WELL
- DECOMMISSIONED MONITORING WELLS
- DECOMMISSIONED INJECTION WELLS
- FACILITY INDUSTRIAL WELL
- MONITORING WELL (Approved For Destruction Pending Access)
- INJECTION GALLERIES (Approved For Destruction Pending Access)
- CROSS SECTION PATH
- INSTITUTIONAL CONTROL AREA (Asphalt)
- INSTITUTIONAL CONTROL AREA (Interior Concrete)
- FORMER FEATURE
- APPROXIMATE PROPERTY LINE
- APPROXIMATE BNSF LEASE AREA BOUNDARY



Map Data: Google (Imagery Date: April 4, 2021)



320 Flint Street
Reno, Nevada 89501
(775) 622-0857

CROSS SECTION
LOCATION MAP

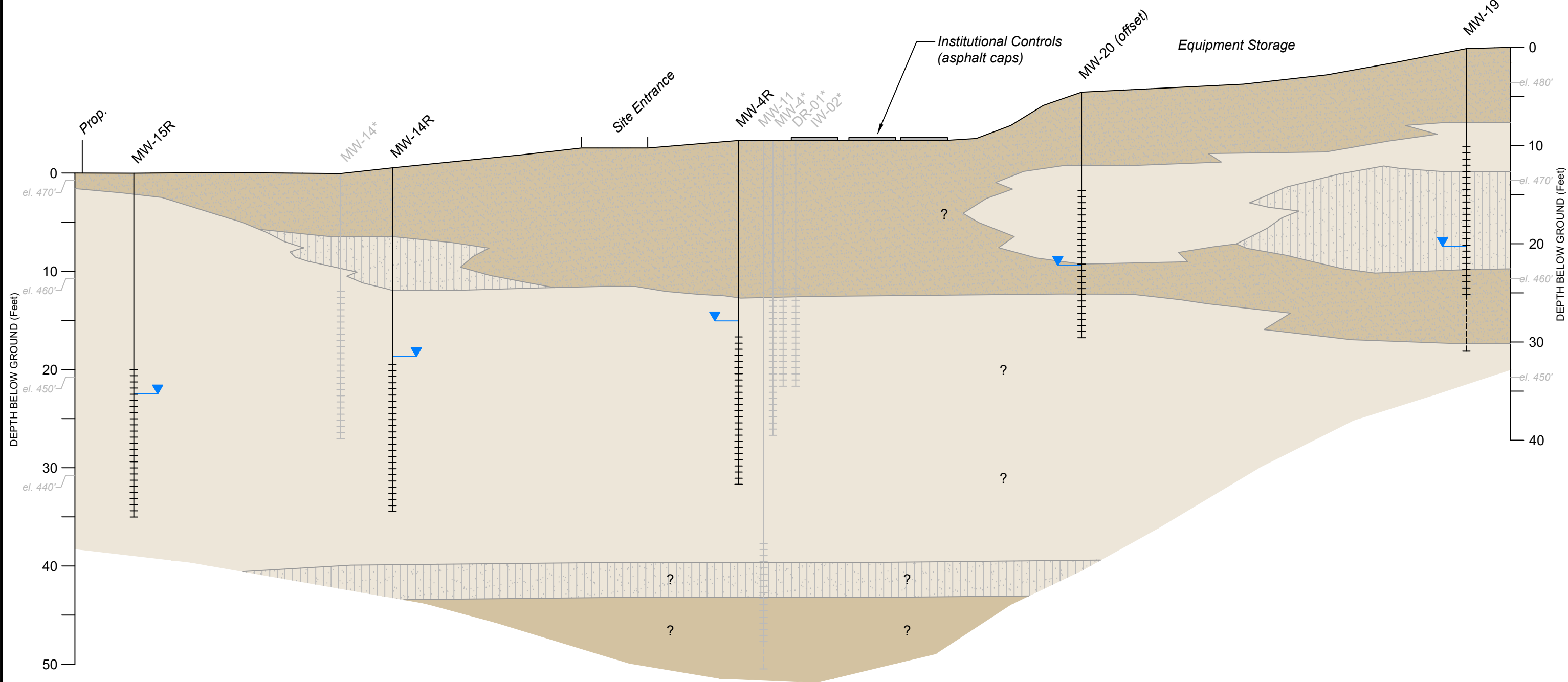
NUTRIEN - PASCO BRANCH
3482 GLADE ROAD NORTH
PASCO, WASHINGTON

DESIGNED BY: SPF	DETAILED BY: SPF	CHECKED BY: TLL
DATE: 12/16/2021	20220203 RBK Pasco WA Fig 3-X-sec Loc.dwg	
PROJECT NO.: 03031-2021	PLOT SCALE: APPROX. 1" = 150'	

FIGURE 3

A
SOUTHWEST

A'
NORTHEAST



▼ Approximate Static Groundwater Elevation (November 2021)

Prop. Approximate Nutrien Property Boundary

el. 470' = Surveyed elevation above mean sea level

WELL

DECOMMISSIONED WELL

Casing

Screen

Bottom of well boring

Silt

Sand

Silty Sand

? = Assumed extent

*Only geology from decommissioned well MW-11 is shown



320 Flint Street
Reno, Nevada 89501
(775) 622-0857

**GEOLOGIC
CROSS SECTION A-A'**

NUTRIEN - PASCO BRANCH
3482 GLADE ROAD NORTH
PASCO, WASHINGTON

DESIGNED BY: SPF	DETAILED BY: SPF	CHECKED BY: TLL
DATE: 1/4/2022		
PROJECT NO.: 03031-2022		HORIZ. PLOT SCALE: APPROX. 1" = 80'

FIGURE 4

TABLES

WELL REPLACEMENT & 2021 GROUNDWATER MONITORING AND SAMPLING REPORT - AMENDED

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

TABLE 1
WELL CONSTRUCTION DETAILS
Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID	TOC Elevation (feet amsl)	Ground Elevation (feet amsl)	Well Diameter (inches)	Well Depth (feet bgs)	Screen Interval (feet bgs)	
					Top	Bottom
Current Well Network						
MW-4R	476.72	474.08	2	35	20	35
MW-14R	473.79	471.30	2	35	20	35
MW-15R	473.63	470.76	2	35	20	35
MW-19	483.07	483.43	2	25	10	25
MW-20	478.69	479.01	2	21	11	21
Facility Supply Wells						
Well #1	--	--	--	50	--	--
Well #2	--	--	6	81	53	81
Decommissioned Wells						
MW-3	491.10	491.10	2	34	24	34
MW-4	472.78	473.32	2	30	15	30
MW-5 ¹	490.75	490.75	2	33	23	33
MW-6	489.02	491.59	2	35	20	35
MW-7	488.67	491.05	2	35	20	35
MW-8	473.04	475.71	2	22	11	22
MW-10 ¹	483.10	485.48	2	25	15	25
MW-11	472.92	475.81	2	51	41	51
MW-12	473.00	475.45	2	48	38	48
MW-13	488.95	491.40	2	60	50	60
MW-14	470.19	472.98	2	27	11.5	27
MW-15	476.65	476.65	2	33	18	33
MW-16	473.64	473.64	2	31.5	21	31.5
MW-17	466.37	466.37	2	22.5	12.5	22.5
MW-18 ¹	489.03	489.03	2	32.5	22.5	32.5
IW-01	470.18	470.85	2	25	15	25
IW-02	470.15	470.68	2	25	15	25
DR-01	470.16	470.73	2	25	15	25

Notes:

feet amsl = Feet above mean sea level

feet bgs = Feet below ground surface

¹ = Wells MW-5, MW-10, and MW-18 planned for decommission in 2022.

Facility Supply and Decommissioned Well details estimated from historical information.

Well #1 and Well #2 are onsite water supply wells used for industrial purposes

Top of Casing and ground elevations of current well network surveyed December 2021 by AHBL. Elevations are referenced to NAVD88 vertical datum.

Top of Casing and ground elevations for MW-4, IW-01, IW-02, and DR-01 were surveyed December 2013 by Taylor Engineering CPS.

TABLE 2
NOVEMBER 2021 GROUNDWATER GAUGING AND ANALYTICAL DATA

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID	Sample Date	Depth to Groundwater		Groundwater Elevation (ft amsl)	Water Column Height (feet)	Nitrate-N (mg/L)
		Below Top of Casing (feet)	Below Ground (feet)			
MW-4R	11/21/2021	21.00	18.36	455.72	16.80	28.4
MW-14R	11/21/2021	21.71	19.22	452.08	16.42	38.1
MW-15R	11/21/2021	25.35	22.48	448.28	12.14	41.5
MW-19 / DUP	11/21/2021	19.77	20.13	463.30	4.83	45.9 / 45.7
MW-20	11/21/2021	17.33	17.65	461.36	3.70	29.0
Cleanup Concentration ¹						17.7

Notes:

mg/L = Milligrams per liter

DUP = Duplicate sample

Bold = Concentration exceeds cleanup Level

ft amsl = Feet above mean sea level

-- = Not measured / analyzed

All Nitrate-N results are reported from a dilution.

Top of Casing and ground elevations surveyed December 2021 by AHBL. Elevations are referenced to NAVD88 vertical datum.

¹ = Site-specific cleanup concentration established in July 2003 WA Ecology Draft Cleanup Action Plan and based on background concentrations from wells MW-6 and MW-7.

TABLE 3
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - CURRENT WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)	
Cleanup Concentration				17.7 ²	7 ³	NE	
MW-4 472.78	12/11/96	19.02	453.76	46.6	<1.00	--	
	07/16/98	18.40	454.38	--	--	--	
	01/15/99	17.98	454.80	68.7	9.36	--	
	02/23/99	18.07	454.71	--	--	--	
	03/16/99	18.15	454.63	--	--	--	
	04/14/99	18.25	454.53	109	4.11	--	
	05/05/99	18.30	454.48	--	--	--	
	06/16/99	18.33	454.45	--	--	--	
	07/12/99	18.40	454.38	22.3	3.46	--	
	08/18/99	18.33	454.45	--	--	--	
	09/20/99	18.28	454.50	--	--	--	
	10/13/99	18.13	454.65	44.5	--	--	
	11/16/99	17.97	454.81	--	2.28	--	
	12/16/99	17.96	454.82	--	--	--	
	10/25/00	17.90	454.88	--	--	--	
	02/15/01	17.83	454.95	34.9	2.39	--	
	05/21/01	18.13	454.65	38.3	<2.00	--	
	08/21/01	18.50	454.28	40.6	<2.00	--	
	11/13/01	17.80	454.98	37.0	<2.00	--	
	02/05/02	18.22	454.56	31.6	<2.00	--	
	05/16/02	18.08	454.70	33.8	<2.00	--	
	08/06/02	18.08	454.70	37.8	<2.00	--	
	11/12/02	17.59	455.19	32.1	<2.00	--	
	09/14/04	17.60	455.18	44.2	--	--	
	03/18/05	17.64	455.14	45.9	--	--	
	09/08/05	17.76	455.02	36.1	3.90	--	
	03/02/06	17.43	455.35	33.3	--	--	
	09/28/06	17.65	455.13	36.8	3.30	--	
	03/27/07	17.59	455.19	40.0	--	--	
	09/26/07	17.72	455.06	30.0	1.90	--	
	04/04/08	15.50	457.28	37.0	--	--	
	09/17/08	17.68	455.10	33.0	1.50	--	
	03/24/09	17.74	455.04	34.0	--	--	
	10/14/09	17.74	455.04	29.2	2.60	--	
	12/23/09		455.05	--	--	--	
	03/11/10	D	17.19	455.59	36.1 / 35.8	4.5 / 4.6	--
	06/24/10		17.97	454.81	--	--	--
	09/21/10		17.72	455.06	32.7	3.46	--
	12/15/10		17.34	455.44	--	--	--
	03/30/11		21.20	451.58	10.8	--	--
	09/29/11		17.85	454.93	38.6	--	--
	03/14/12		17.85	454.93	38.9	--	--
	09/25/12		17.70	455.08	36.1	--	3.48
	03/12/13	D	17.76	455.02	43 / 42	--	2.9 / 1.9
	10/14/13		17.77	455.01	35.0	--	1.74
	11/16/13	D	17.64	455.14	34.7 / 34.5	--	3.4 / 3.1
	04/10/14	D	18.00	454.78	38.8 / 39.8	--	3.55 / 3.65
	10/27/14	D	17.68	455.10	27 / 27	--	2.64 / 2.69
	05/01/15	D	18.18	454.60	31.8 / 32.3	--	4.26 / 4.35
	06/06/16	D	18.21	454.57	34 / 35	--	5.3 / 5.8
	06/20/17	D	18.03	454.75	36.2 / 30.4	--	3.84 / 3.98
	06/25/18	D	18.26	454.52	44.3 / 42.3	--	2.99 / 2.91
	06/03/19	D	17.99	454.79	40.2 / 40.7	--	2.42 / 2.21
	09/23/20	D	17.98	454.80	41.9 / 41.2	--	--
	11/21/21			Well Decommissioned			
MW-4R 476.72	11/21/21	21.00	455.72	28.4	--	--	
MW-14 470.19	10/25/00	19.98	450.21	40.0	<2.00	--	
	02/15/01	19.78	450.41	33.7	<2.00	--	
	05/21/01	20.37	449.82	42.2	<2.00	--	
	08/21/01	20.69	449.50	47.4	<2.00	--	
	11/14/01	19.91	450.28	48.7	<2.00	--	
	02/05/02	20.27	449.92	40.6	<2.00	--	

TABLE 3
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - CURRENT WELLS
Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ²	7 ³	NE
MW-14 (cont.)	05/16/02	20.53	449.66	43.5	<2.00	--
	08/06/02	20.55	449.64	48.9	<2.00	--
	11/12/02	19.60	450.59	48.7	<2.00	--
	09/14/04	19.91	450.28	52.7	--	--
	03/18/05	19.92	450.27	43.3	--	--
	09/08/05	20.25	449.94	53.2	<2.00	--
	03/02/06	19.63	450.56	26.8	--	--
	09/28/06	20.07	450.12	59.5	<1.89	--
	03/27/07	20.01	450.18	34.0	--	--
	09/26/07	20.37	449.82	50.0	<0.022	--
	04/04/08	17.46	452.73	33.0	--	--
	09/17/08	20.37	449.82	56.0	0.06	--
	03/24/09	20.24	449.95	39.0	--	--
	10/14/09	20.63	449.56	58.4	<0.25	--
	12/23/09	20.55	449.64	--	--	--
	03/11/10	20.61	449.58	40.0	<0.12	--
	06/24/10	20.99	449.20	--	--	--
	09/21/10	20.68	449.51	52.1	0.370 J	--
	12/15/10	20.10	450.09	--	--	--
	03/30/11	20.66	449.53	31.2	<0.40	--
	09/29/11	21.03	449.16	48.9	--	--
	03/14/12	21.00	449.19	46.3	--	--
	09/25/12	20.77	449.42	49.2	--	2.83
	03/12/13	20.73	449.46	37.0	--	2.10
	11/16/13	20.48	449.71	40.1	--	2.37
	04/10/14	21.22	448.97	35.6	--	2.78
	10/27/14	20.89	449.30	31.8	--	2.40
	05/01/15	21.58	448.61	29.8	--	4.56
	06/06/16	21.55	448.64	33	--	5.5
	06/20/17	21.61	448.58	33.5	--	3.00
	06/25/18	21.86	448.33	41.7	--	2.04
	06/03/19	21.70	448.49	35.5	--	1.34
	09/23/20	21.73	448.46	40.7	--	--
	11/21/21			Well Decommissioned		
MW-14R 473.79	11/21/21	21.71	452.08	38.1	--	--
MW-15 476.65	02/16/01	28.60	448.05	17.3	<2.00	--
	05/21/01	29.54	447.11	16.7	<2.00	--
	08/22/01	29.55	447.10	16.6	<2.00	--
	11/13/01	28.79	447.86	16.6	<2.00	--
	02/04/02	29.01	447.64	17.5	<2.00	--
	05/17/02	30.07	446.58	16.9	<2.00	--
	08/07/02	29.84	446.81	17.4	<2.00	--
	11/12/02	28.55	448.10	17.1	<2.00	--
	09/13/04	28.85	447.80	--	--	--
	03/18/05	28.99	447.66	--	--	--
	09/07/05	29.44	447.21	--	--	--
	03/01/06	28.68	447.97	--	--	--
	09/27/06	28.98	447.67	--	--	--
	03/27/07	28.89	447.76	--	--	--
	09/11/07	29.27	447.38	--	--	--
	04/04/08	27.26	449.39	34.0	--	--
	09/16/08	29.23	447.42	--	--	--
	03/24/09	29.15	447.50	--	--	--
	10/14/09	29.48	447.17	--	--	--
	12/23/09	29.37	447.28	--	--	--
	03/10/10	29.57	447.08	--	--	--
	06/24/10	30.00	446.65	--	--	--
	09/20/10	29.29	447.36	--	--	--
	12/15/10	28.79	447.86	--	--	--
	03/29/11	29.58	447.07	--	--	--
	09/29/11	29.74	446.91	--	--	--

TABLE 3
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - CURRENT WELLS
Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ²	7 ³	NE
MW-15 (cont.)	03/14/12	29.86	446.79	--	--	--
	09/25/12	29.41	447.24	--	--	--
	03/12/13	29.48	447.17	41.0	--	2.20
	11/16/13	28.91	447.74	30.8	--	2.47
	04/10/14	30.12	446.53	24.7	--	2.92
	10/27/14	29.52	447.13	22.4	--	2.61
	05/01/15	30.44	446.21	21.6	--	4.43
	06/06/16	30.44	446.21	32	--	5.6
	06/20/17	30.51	446.14	66.9	--	3.78
	06/25/18	30.55	446.10	70.3	--	2.75
	06/03/19	30.62	446.03	65.9	--	1.89
	09/23/20	30.54	446.11	42.5	--	--
Well Decommissioned						
MW-15R 473.63	11/21/21	25.35	448.28	41.5	--	--
MW-19 483.07	04/03/08	20.03	463.04	67.0	--	--
	09/16/08	20.13	462.94	--	--	--
	03/24/09	20.02	463.05	--	--	--
	10/14/09	19.86	463.21	95.8	--	--
	12/23/09	19.80	463.27	--	--	--
	03/10/10	19.93	463.14	64.1	--	--
	06/24/10	20.02	463.05	--	--	--
	09/21/10	19.56	463.51	106	--	--
	12/15/10	19.44	463.63	--	--	--
	03/30/11	19.72	463.35	80.5	--	--
	09/29/11	19.73	463.34	96.1	--	--
	03/14/12	19.93	463.14	--	--	--
	09/25/12	19.59	463.48	70.9	--	2.50
	03/12/13	19.78	463.29	53.0	--	1.90
	11/16/13	19.53	463.54	35.4	--	2.80
	04/10/14	19.95	463.12	30.8	--	2.48
	10/27/14	19.65	463.42	34.3	--	2.14
	05/01/15	20.00	463.07	49.7	--	3.88
	06/06/16	20.11	462.96	60	--	5.6
	06/20/17	19.95	463.12	87.6	--	3.25
	06/25/18	20.08	462.99	62.2	--	2.18
	06/03/19	19.95	463.12	69.0	--	1.50
	09/23/20	19.81	463.26	42.7	--	--
	11/21/21	19.77	463.30	45.9	--	--
	11/21/21 D	--	--	45.7	--	--
MW-20 478.69	04/04/08	17.41	461.28	27.0	--	--
	09/16/08	17.32	461.37	--	--	--
	03/24/09	17.42	461.27	--	--	--
	10/14/09	17.33	461.36	--	--	--
	12/23/09	17.33	461.36	--	--	--
	03/10/10	17.36	461.33	--	--	--
	03/10/10	17.53	461.16	--	--	--
	09/20/10	17.16	461.53	--	--	--
	12/15/10	16.93	461.76	--	--	--
	03/29/11	17.25	461.44	--	--	--
	09/29/11	17.33	461.36	--	--	--
	03/14/12	17.45	461.24	--	--	--
	09/25/12	17.18	461.51	27.9	--	2.54
	03/12/13	17.26	461.43	31.0	--	1.90
	11/16/13	17.05	461.64	30.4	--	1.86
	04/10/14	17.46	461.23	27.2	--	2.53
	10/27/14	17.19	461.50	21.4	--	2.12
	05/01/15	17.62	461.07	21.6	--	1.85
	06/06/16	17.65	461.04	24	--	5.4
	06/20/17	17.48	461.21	31.2	--	3.31
	06/25/18	17.64	461.05	32.8	--	2.03

TABLE 3
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - CURRENT WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ²	7 ³	NE
MW-20 (cont.)	06/03/19	17.52	461.17	38.9	--	1.42
	09/23/20	17.43	461.26	28.9	--	--
	11/21/21	17.33	461.36	29.0	--	--

Notes:

ft amsl = Feet above mean sea level

-- = Not measured / not analyzed

mg/L = Milligrams per liter

µg/L = Micrograms per liter

Bold = values that exceed the established regulatory cleanup level

UJ = Estimated value because surrogate recoveries were outside of the established quality control limits

J = Estimated value

NE = Not Established

D = Duplicate sample

¹ All active wells surveyed December 2021 by AHBL. Elevations are referenced to NAVD88 vertical datum. Historical groundwater elevations for MW-19 and MW-20 were corrected to 2021 surveyed elevation.

² = Site-specific cleanup concentration established in July 2003 WA Ecology Draft Cleanup Action Plan and based on background concentrations from wells MW-6 and MW-7.

³ = Washington State Department of Ecology Model Toxics Control Act Method B cleanup level

Analytical Methods:

Nitrate-N = Nitrate as nitrogen (-N). Analyzed by EPA Methods 300.0, 353.2, or 353.3. Since 2013 nitrate-N reported as nitrate-N + nitrite-N.

Dinoseb = by EPA Method 8151A

TOC = Total Organic Carbon by Standard Method 5310B/C or EPA 415.1

TABLE 4
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - DECOMMISSIONED WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-3 491.10	12/11/99	30.49	460.61	38.0	20.8	--
	07/16/98	30.73	460.37	--	--	--
	01/15/99	30.65	460.45	24.7 / 25.7	78.7 / 81.1	--
	02/23/99	30.71	460.39	--	--	--
	03/16/99	30.75	460.35	--	--	--
	04/15/99	30.82	460.28	41.2 / 30.3	20.6 / 25.3	--
	05/05/99	30.86	460.24	--	--	--
	06/16/99	30.88	460.22	--	--	--
	07/12/99	30.91	460.19	13.5	16.9	--
	08/18/99	30.84	460.26	--	--	--
	09/20/99	30.85	460.25	--	--	--
	10/14/99	30.74	460.36	20 / 19.7	--	--
	11/17/99	30.61	460.49	--	21.8 / 34	--
	12/16/99	30.61	460.49	--	--	--
	10/24/00	30.69	460.41	--	--	--
	02/16/01	30.76	460.34	16.4	16.8	--
	05/22/01	31.02	460.08	12.4	4.36	--
	08/21/01	30.97	460.13	12.9	3.54J	--
	11/13/01	30.57	460.53	14.8	12.3	--
	02/05/02	30.76	460.34	17.0	14.0	--
	05/16/02	30.93	460.17	12.3	4.96	--
	08/06/02	30.86	460.24	10.9	<2.00	--
	11/12/02	30.50	460.60	12.8	10.6 J	--
	09/13/04	30.39	460.71	--	6.05	--
	03/18/05	30.59	460.51	--	<2.00	--
	09/08/05	30.49	460.61	--	<2.00	--
	03/02/06	30.44	460.66	--	<1.89	--
	09/27/06	30.38	460.72	--	<1.89	--
	03/27/07	30.45	460.65	--	0.045	--
	09/26/07	30.41	460.69	--	<0.023	--
	04/04/08	28.27	462.83	8.8	<0.023	--
	09/17/08	30.37	460.73	--	<0.022	--
	03/24/09	30.57	460.53	--	0.042	--
	10/14/09	30.32	460.78	--	<0.25 / <0.25	--
	12/23/09	30.27	460.83	--	<0.12	--
	03/11/10	30.40	460.70	--	<0.12	--
	06/24/10	30.55	460.55	--	--	--
	09/21/10	30.00	461.10	--	0.362 J	--
	12/16/10	29.90	461.20	--	<0.40 / 0.334 J	--
	03/30/11	30.25	460.85	--	<0.40	--
	09/29/11	30.15	460.95	--	--	--
	03/14/12	30.42	460.68	--	--	--
	09/25/12	30.03	461.07	--	--	--
	03/12/13	30.29	460.81	--	--	--
	11/16/13	29.99	461.11	--	--	--
	04/09/14	30.44	460.66	--	--	--
	10/27/14	30.11	460.99	--	--	--
	05/01/15	30.55	460.55	--	--	--
	06/06/16	30.59	460.51	--	--	--
	06/20/17	30.42	460.68	--	--	--
	06/25/18	30.60	460.50	--	--	--
	06/03/19	30.50	460.60	--	--	--
	09/22/20			Well Decommissioned		
MW-5 490.75	12/11/96	30.82	459.93	14.6	4.38	--
	07/16/98	31.27	459.48	--	--	--
	01/15/99	31.07	459.68	14.0	5.26	--
	02/23/99	31.18	459.57	--	--	--
	03/16/99	31.23	459.52	--	--	--
	04/14/99	31.32	459.43	28.7	2.98	--
	05/05/99	31.38	459.37	--	--	--
	06/16/99	31.40	459.35	--	--	--
	07/12/99	31.41	459.34	10.5	5.30	--

TABLE 4
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - DECOMMISSIONED WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-5 (cont.)	08/18/99	32.36	458.39	--	--	--
	09/20/99	31.34	459.41	--	--	--
	10/14/99	31.21	459.54	13.4	--	--
	11/17/99	31.09	459.66	--	2.52	--
	12/16/99	31.06	459.69	--	--	--
	10/24/00	31.19	459.56	--	--	--
	02/15/01	31.24	459.51	10.8	2.84	--
	05/22/01	31.56	459.19	10.7	2.60	--
	08/22/01	31.54	459.21	10.9	3.02J	--
	11/13/01	31.08	459.67	28.9	2.45	--
	02/04/02	31.25	459.50	11.0	<2.00	--
	05/17/02	31.50	459.25	9.5	<2.00	--
	08/07/02	31.45	459.30	10.5	<2.00	--
	11/12/02	31.03	459.72	11.0	<2.00	--
	09/13/04	30.93	459.82	--	--	--
	03/18/05	31.05	459.70	--	--	--
	09/07/05	31.05	459.70	--	--	--
	03/01/06	31.01	459.74	--	--	--
	09/27/06	30.89	459.86	--	--	--
	03/27/07	30.91	459.84	--	--	--
	09/11/07	30.89	459.86	--	--	--
	04/04/08	29.04	461.71	11.0	--	--
	09/16/08	30.93	459.82	--	--	--
	03/24/09	31.04	459.71	--	--	--
	10/14/09	30.69	460.06	--	--	--
	12/23/09	29.62	461.13	--	--	--
	03/10/10	30.84	459.91	--	--	--
	06/24/10	31.03	459.72	--	--	--
	09/20/10	30.47	460.28	--	--	--
	12/15/10	30.20	460.55	--	--	--
	03/29/11	30.70	460.05	--	--	--
	09/29/11	30.63	460.12	--	--	--
	03/14/12	30.78	459.97	--	--	--
	09/25/12	30.34	460.41	--	--	--
	03/12/13	30.61	460.14	--	--	--
	11/16/13	30.24	460.51	--	--	--
	04/09/14	30.78	459.97	--	--	--
	10/27/14	30.47	460.28	--	--	--
	05/01/15	30.93	459.82	--	--	--
	06/06/16	30.99	459.76	--	--	--
	06/20/17	30.84	459.91	--	--	--
	06/25/18	30.94	459.81	--	--	--
	06/03/19	30.93	459.82	--	--	--
	09/23/20	--	--	--	--	--
MW-6 489.02	01/15/99	27.53	461.49	8.92	<1.00	--
	02/23/99	27.63	461.39	--	--	--
	03/16/99	27.70	461.32	--	--	--
	04/14/99	27.80	461.22	17.9	<2.00	--
	05/05/99	27.82	461.20	--	--	--
	06/16/99	27.86	461.16	--	--	--
	07/12/99	27.85	461.17	9.36	<2.00UJ	--
	08/18/99	27.78	461.24	--	--	--
	09/20/99	27.73	461.29	--	--	--
	10/14/99	27.59	461.43	10.5	--	--
	11/16/99	27.44	461.58	--	<2.27	--
	12/16/99	27.46	461.56	--	--	--
	10/24/00	27.50	461.52	--	--	--
	02/15/01	27.68	461.34	--	--	--
	05/21/01	27.96	461.06	--	--	--
	08/21/01	27.96	461.06	--	--	--
	11/13/01	27.41	461.61	--	--	--
	02/04/02	27.71	461.31	--	--	--

TABLE 4
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - DECOMMISSIONED WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-6 (cont.)	05/16/02	27.91	461.11	--	--	--
	08/06/02	27.82	461.20	--	--	--
	11/12/02	27.35	461.67	--	--	--
	09/13/04	27.18	461.84	--	--	--
	03/18/05	27.43	461.59	--	--	--
	09/07/05	27.31	461.71	--	--	--
	03/01/06	27.32	461.70	--	--	--
	09/27/06	27.15	461.87	--	--	--
	03/27/07	27.29	461.73	10.0	--	--
	09/11/07	27.16	461.86	8.6	--	--
	04/03/08	NM	--	--	--	--
	09/16/08	27.15	461.87	--	--	--
	03/24/09	27.41	461.61	--	--	--
	10/14/09	27.00	462.02	--	--	--
	12/23/09	26.96	462.06	--	--	--
	03/10/10	27.21	461.81	--	--	--
	06/24/10	27.38	461.64	--	--	--
	09/20/10	26.63	462.39	--	--	--
	12/15/10	26.50	462.52	--	--	--
	03/29/11	27.00	462.02	--	--	--
	09/29/11	26.83	462.19	--	--	--
	03/14/12	27.13	461.89	--	--	--
	09/25/12	26.60	462.42	--	--	--
	03/12/13	26.95	462.07	--	--	--
	11/16/13	26.52	462.50	--	--	--
	04/09/14	27.15	461.87	--	--	--
	10/27/14	26.77	462.25	--	--	--
	05/01/15	22.14	466.88	--	--	--
	06/06/16	27.31	461.71	--	--	--
	06/20/17	27.17	461.85	--	--	--
	06/25/18	27.33	461.69	--	--	--
	06/03/19	27.30	461.72	--	--	--
	09/22/20	Well Decommissioned				
MW-7 488.67	01/15/99	28.44	460.23	9.32	<1.00	--
	02/23/99	28.57	460.10	--	--	--
	03/16/99	28.62	460.05	--	--	--
	04/14/99	28.72	459.95	18.1	<2.00	--
	05/05/99	28.78	459.89	--	--	--
	06/16/99	28.82	459.85	--	--	--
	07/12/99	28.81	459.86	9.79	<2.00	--
	08/18/99	28.75	459.92	--	--	--
	09/20/99	28.72	459.95	--	--	--
	10/14/99	28.58	460.09	12.4	--	--
	11/16/99	28.45	460.22	--	<2.25	--
	12/16/99	28.44	460.23	--	--	--
	10/24/00	28.55	460.12	--	--	--
	02/15/01	28.61	460.06	--	--	--
	05/21/01	28.99	459.68	--	--	--
	08/21/01	28.97	459.70	--	--	--
	11/13/01	28.44	460.23	--	--	--
	02/04/02	28.70	459.97	--	--	--
	05/16/02	28.91	459.76	--	--	--
	08/06/02	28.84	459.83	--	--	--
	11/12/02	28.41	460.26	--	--	--
	09/13/04	28.26	460.41	--	--	--
	03/18/05	28.43	460.24	--	--	--
	09/07/05	28.40	460.27	--	--	--
	03/01/06	28.38	460.29	--	--	--
	09/27/06	28.22	460.45	--	--	--
	03/27/07	28.25	460.42	10.0	--	--
	09/11/07	28.24	460.43	10.0	--	--
	04/03/08	NM	--	--	--	--

TABLE 4
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - DECOMMISSIONED WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-7 (cont.)	09/16/08	28.24	460.43	--	--	--
	03/24/09	25.41	463.26	--	--	--
	10/14/09	28.01	460.66	--	--	--
	12/23/09	27.93	460.74	--	--	--
	03/10/10	28.22	460.45	--	--	--
	06/24/10	28.34	460.33	--	--	--
	09/20/10	27.74	460.93	--	--	--
	12/15/10	27.49	461.18	--	--	--
	03/29/11	27.96	460.71	--	--	--
	09/29/11	28.02	460.65	--	--	--
	03/14/12	28.15	460.52	--	--	--
	09/25/12	27.60	461.07	--	--	--
	03/12/13	27.95	460.72	--	--	--
	11/16/13	27.53	461.14	--	--	--
	04/09/14	28.13	460.54	--	--	--
	10/27/14	27.74	460.93	--	--	--
	05/01/15	28.33	460.34	--	--	--
	06/06/16	28.34	460.33	--	--	--
	06/20/17	28.18	460.49	--	--	--
	06/25/18	28.29	460.38	--	--	--
	06/03/19	28.27	460.40	--	--	--
				Well Decommissioned		
MW-8 473.04	01/15/99	15.80	457.24	17.2	8.28	--
	02/23/99	15.81	457.23	--	--	--
	03/16/99	15.85	457.19	--	--	--
	04/13/99	15.93	457.11	38.5	11.5	--
	05/05/99	15.97	457.07	--	--	--
	06/16/99	15.97	457.07	--	--	--
	07/12/99	16.04	457.00	13.6 / 14.7	10.8 / 10.3	--
	08/18/99	15.91	457.13			--
	09/20/99	16.04	457.00	--	--	--
	10/13/99	15.94	457.10	17.5	--	--
	11/16/99	15.87	457.17	--	13.5	--
	12/16/99	15.87	457.17	--	--	--
	10/24/00	15.82	457.22	--	--	--
	02/15/01	15.72	457.32	9.6	12.3	--
	05/21/01	16.07	456.97	14.2	7.86	--
	08/21/01	16.46	456.58	12.2	4.63J	--
	11/13/01	15.86	457.18	13.5	9.74	--
	02/05/02	16.31	456.73	14.9	9.45	--
	05/16/02	16.08	456.96	12.1	7.12	--
	08/06/02	16.02	457.02	11.1	3.25	--
	11/12/02	15.76	457.28	12.2	9.41J	--
	09/13/04	15.65	457.39	--	16.5	--
	03/18/05	15.75	457.29	--	11.4J	--
	09/08/05	15.78	457.26	--	2.05	--
	03/02/06	15.62	457.42	--	27.7	--
	09/28/06	15.69	457.35	--	3.69	--
	03/27/07	15.63	457.41	--	7.50	--
	09/26/07	15.73	457.31	--	2.70	--
	04/04/08	13.36	459.68	12.0	7.50	--
	09/17/08	15.67	457.37	--	0.41	--
	03/24/09	15.83	457.21	--	5.50	--
	10/14/09	15.71	457.33	--	0.85J	--
	12/23/09	15.75	457.29	--	7.9 / 6.8	--
	03/10/10	15.73	457.31	--	8.4	--
	06/24/10	15.91	457.13	--	0.44J	--
	09/21/10	15.54	457.50	--	0.482	--
	12/16/10	15.50	457.54	--	0.567	--
	03/30/11	15.70	457.34	--	<0.40	--
	09/29/11	15.79	457.25	--	--	--
	03/14/12	15.83	457.21	--	--	--

TABLE 4
HISTORICAL GROUNDWATER ELEVATION AND ANALYTICAL DATA - DECOMMISSIONED WELLS

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-8 (cont.)	09/25/12	16.67	456.37	--	--	--
	03/12/13	15.78	457.26	--	--	--
	11/16/13	15.61	457.43	--	--	--
	04/09/14	15.90	457.14	--	--	--
	10/27/14	15.62	457.42	--	--	--
	05/01/15	15.98	457.06	--	--	--
	06/06/16	16.02	457.02	--	--	--
	06/20/17	15.91	457.13	--	--	--
	06/25/18	16.05	456.99	--	--	--
	06/03/19	15.88	457.16	--	--	--
	09/22/20	Well Decommissioned				
MW-9 477.16	01/15/99	Dry	--	17.4	--	--
	02/23/99	Dry	--	--	--	--
	03/16/99	Dry	--	--	--	--
	04/13/99	Dry	--	--	--	--
	05/05/99	Dry	--	--	--	--
	06/16/99	Dry	--	--	--	--
	07/12/99	Dry	--	--	--	--
	08/18/99	Dry	--	--	--	--
	09/20/99	Dry	--	--	--	--
	10/13/99	Dry	--	--	--	--
	11/16/99	Dry	--	--	--	--
	12/16/99	Dry	--	--	--	--
	10/24/00	Well Decommissioned				
MW-10 483.10	01/15/99	22.24	460.86	14.6	<1.00	--
	02/23/99	22.33	460.77	--	--	--
	03/16/99	22.39	460.71	--	--	--
	04/15/99	22.48	460.62	26.7	<2.00	--
	05/05/99	22.52	460.58	--	--	--
	06/16/99	22.54	460.56	--	--	--
	07/12/99	22.54	460.56	13.7	<2.00	--
	08/18/99	22.47	460.63	--	--	--
	09/20/99	22.48	460.62	--	--	--
	10/13/99	22.35	460.75	18.4	--	--
	11/17/99	22.22	460.88	--	<2.26	--
	12/16/99	22.22	460.88	--	--	--
	10/24/00	22.31	460.79	--	--	--
	02/15/01	22.41	460.69	13.1	<2.00	--
	05/22/01	22.69	460.41	12.8	<2.00	--
	08/22/01	22.84	460.26	13.1	<2.00	--
	11/14/01	22.21	460.89	15.9	<2.00	--
	02/05/02	22.61	460.49	14.3	<2.00	--
	05/17/02	22.66	460.44	11.4	<2.27	--
	08/07/02	22.58	460.52	11.8	<2.00	--
	11/12/02	22.19	460.91	13.5	<2.00	--
	09/13/04	21.96	461.14	--	--	--
	03/18/05	22.17	460.93	--	--	--
	09/07/05	22.09	461.01	--	--	--
	03/01/06	22.06	461.04	--	--	--
	09/27/06	21.95	461.15	--	--	--
	03/27/07	22.04	461.06	--	--	--
	09/11/07	21.97	461.13	--	--	--
	04/04/08	19.80	463.30	12 / 13	--	--
	09/16/08	21.95	461.15	--	--	--
	03/24/09	22.14	460.96	--	--	--
	10/14/09	21.85	461.25	--	--	--
	12/23/09	21.81	461.29	--	--	--
	03/10/10	22.00	461.10	--	--	--
	06/24/10	22.13	460.97	--	--	--
	09/20/10	21.51	461.59	--	--	--
	12/15/10	21.40	461.70	--	--	--

TABLE 4
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Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7 ^a	7 ^b	NE
MW-10 (cont.)	03/29/11	21.85	461.25	--	--	--
	09/29/11	21.78	461.32	--	--	--
	03/14/12	25.44	457.66	--	--	--
	09/25/12	21.52	461.58	--	--	--
	03/12/13	21.79	461.31	--	--	--
	11/16/13	21.43	461.67	--	--	--
	04/09/14	21.98	461.12	--	--	--
	10/27/14	21.61	461.49	--	--	--
	05/01/15	22.08	461.02	--	--	--
	06/06/16	22.15	460.95	--	--	--
	06/20/17	22.09	461.01	--	--	--
	06/25/18	22.13	460.97	--	--	--
	06/03/19	22.08	461.02	--	--	--
	09/24/20	--	--	--	--	--
MW-11 472.92	01/15/99	--	--	--	--	--
	02/23/99	18.05	454.87	--	--	--
	03/16/99	20.79	452.13	--	--	--
	04/13/99	20.93	451.99	--	--	--
	05/05/99	20.93	451.99	--	--	--
	06/16/99	20.97	451.95	--	--	--
	07/12/99	21.03	451.89	--	--	--
	08/18/99	20.95	451.97	--	--	--
	09/20/99	20.92	452.00	--	--	--
	10/13/99	20.78	452.14	--	--	--
	11/16/99	20.60	452.32	--	--	--
	12/16/99	20.65	452.27	--	--	--
	10/24/00	20.73	452.19	--	--	--
	02/15/01	20.52	452.40	--	--	--
	05/21/01	21.18	451.74	--	--	--
	09/21/10	21.12	451.80	11.3 / 11.1	--	--
	12/15/10	20.74	452.18	--	--	--
	09/21/20	Well Decommissioned				
MW-12 473.00	02/23/99	16.27	456.73	--	--	--
	03/16/99	16.51	456.49	--	--	--
	04/13/99	16.61	456.39	--	--	--
	05/05/99	16.59	456.41	--	--	--
	06/16/99	16.56	456.44	--	--	--
	07/12/99	16.59	456.41	--	--	--
	08/18/99	16.42	456.58	--	--	--
	09/20/99	16.59	456.41	--	--	--
	10/13/99	16.44	456.56	--	--	--
	11/16/99	16.32	456.68	--	--	--
	12/16/99	16.35	456.65	--	--	--
	10/24/00	16.32	456.68	--	--	--
	02/15/01	16.04	456.96	--	--	--
	05/21/01	16.67	456.33	--	--	--
	09/21/10	16.32	456.68	10.7	--	--
	12/15/10	16.29	456.71	--	--	--
	09/22/20	Well Decommissioned				
MW-13 488.95	10/24/00	30.55	458.40	--	--	--
	02/15/01	30.82	458.13	--	--	--
	05/21/01	31.22	457.73	--	--	--
	09/21/10	30.30	458.65	10.9	--	--
	12/15/10	30.19	458.76	--	--	--
	09/22/20	Well Decommissioned				
MW-16 473.64	09/14/04	22.37	451.27	15.4	<2.00	--
	03/18/05	22.39	451.25	16.5	<2.00	--
	09/08/05	22.63	451.01	14.2	<2.00	--
	03/01/06	22.64	451.00	14.6	<1.90	--
	09/28/06	22.57	451.07	14.3	<1.89	--
	03/27/07	22.51	451.13	17.0	0.66	--

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Nutrien Ag Solutions, Inc.
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Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)	
Cleanup Concentration				17.7 ^a	7 ^b	NE	
MW-16 (cont.)	09/11/07	22.77	450.87	15.0	<0.022	--	
	04/03/08	20.15	453.49	16.0	<0.022	--	
	09/17/08	22.81	450.83	13.0	<0.022	--	
	03/24/09	22.77	450.87	17.0	0.11	--	
	10/14/09	23.05	450.59	14.6	<0.25	--	
	12/23/09	22.93	450.71	--	<0.12	--	
	03/11/10	22.93	450.71	20.6	<0.12	--	
	06/24/10	23.25	450.39	12.1	--	--	
	09/21/10	22.99	450.65	16.5	--	--	
	12/16/10	22.50	451.14	17.7	--	--	
	03/30/11	23.13	450.51	19.5	<0.40	--	
	09/29/11	23.47	450.17	18.9 / 19.6	--	--	
	03/14/12	21.00	452.64	19.4	--	--	
	09/25/12	23.04	450.60	18.4	--	2.97	
	03/12/13	23.08	450.56	21.0	--	2.00	
	11/16/13	22.90	450.74	--	--	--	
	04/09/14	23.45	450.19	21.2	--	4.04	
	10/27/14	23.22	450.42	15.3	--	2.29	
	05/01/15	23.79	449.85	17.9	--	4.29	
	06/06/16	23.86	449.78	19	--	5.6	
	06/20/17	23.90	449.74	21.1	--	3.36	
	06/25/18	24.13	449.51	23.8	--	2.15	
	06/03/19	23.92	449.72	20.5	--	1.51	
	09/23/20	23.95	449.69	19.9	--	--	
	11/21/21	Well Decommissioned					
MW-17 466.37	09/14/04	19.77	446.60	38.1	--	--	
	03/18/05	19.66	446.71	39.7	--	--	
	09/08/05	20.16	446.21	31.4	--	--	
	03/02/06	19.43	446.94	35.9	--	--	
	09/28/06	20.01	446.36	31.6	--	--	
	03/27/07	19.94	446.43	40.0	--	--	
	09/11/07	20.37	446.00	33.0	--	--	
	04/03/08	20.29	446.08	32.0	--	--	
	09/17/08	20.46	445.91	25.0	--	--	
	03/24/09	20.28	446.09	35.0	--	--	
	10/14/09	20.77	445.60	25.5	--	--	
	12/23/09	20.72	445.65		--		
	03/11/10	20.74	445.63	29.5	--	--	
	06/24/10	21.12	445.25		--		
	09/21/10	20.70	445.67	33.5	--	--	
	12/15/10	20.30	446.07		--		
	03/30/11	20.73	445.64	19.4	--	--	
	09/29/11	21.39	444.98	39.1	--	--	
	03/14/12	21.18	445.19	32.5	--	--	
	09/25/12	20.93	445.44	35.8	--	3.22	
	03/12/13	20.89	445.48	35.0	--	2.90	
	11/16/13	20.66	445.71	37.9	--	2.40	
	04/09/14	21.46	444.91	35.8	--	2.53	
	10/27/14	21.15	445.22	29.8	--	2.33	
	05/01/15	21.80	444.57	26.5	--	4.39	
	06/06/16	21.78	444.59	32	--	4.0	
	06/20/17	21.89	444.48	33.5	--	3.35	
	06/25/18	Unable to locate well					
	06/03/19	Dry					
	09/23/20	22.16	Well Decommissioned				
	11/21/21						
MW-18 489.03	04/04/08	27.70	461.33	12	--	--	
	09/16/08	27.47	461.56	--	--	--	
	03/24/09	27.69	461.34	--	--	--	
	10/14/09	27.38	461.65	--	--	--	
	12/23/09	27.36	461.67	--	--	--	

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Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well ID and TOC Elevation ¹ (ft amsl)	Sample Date	Depth to Groundwater Below Top of Casing (feet)	Groundwater Elevation (ft amsl)	Nitrate-N (mg/L)	Dinoseb (µg/L)	TOC (mg/L)
Cleanup Concentration				17.7^a	7^b	NE
MW-18 (cont.)	03/10/10	27.57	461.46	--	--	--
	06/24/10	27.67	461.36	--	--	--
	09/20/10	27.05	461.98	--	--	--
	12/15/10	26.92	462.11	--	--	--
	03/29/11	27.37	461.66	--	--	--
	09/29/11	27.47	461.56	--	--	--
	03/14/12	27.50	461.53	--	--	--
	09/25/12	27.02	462.01	--	--	--
	03/12/13	27.33	461.70	--	--	--
	11/16/13	26.95	462.08	--	--	--
	04/09/14	27.51	461.52	--	--	--
	10/27/14	27.15	461.88	--	--	--
	05/01/15	27.58	461.45	--	--	--
	06/06/16	27.66	461.37	--	--	--
	06/20/17	27.55	461.48	--	--	--
	06/25/18	27.65	461.38	--	--	--
	06/03/19	27.62	461.41	--	--	--
	09/23/20	--	--	--	--	--
IW-01 470.18	05/01/15	15.03	455.15	--	--	--
	06/06/16	15.10	455.08	--	--	--
	06/20/17	15.04	455.14	--	--	--
	06/25/18	15.22	454.96	--	--	--
	06/03/19	14.98	455.20	--	--	--
	09/21/20	Well Decommissioned				
IW-02 470.15	05/01/15	15.05	455.10	--	--	--
	06/06/16	15.11	455.04	--	--	--
	06/20/17	14.97	455.18	--	--	--
	06/25/18	15.16	454.99	--	--	--
	06/03/19	14.93	455.22	--	--	--
	09/21/20	Well Decommissioned				
DR-01 470.16	10/14/13	16.90	453.26	29.1	--	1.02
	11/16/13	14.96	455.20	11.6	--	168.00
	04/09/14	15.26	454.90	31.6	--	3.18
	05/01/15	15.53	454.63	26.0	--	4.14
	06/06/16	15.39	454.77	27	--	5.9
	06/20/17	15.20	454.96	31.8	--	3.82
	06/25/18	15.51	454.65	35.3	--	3.08
	06/03/19	15.25	454.91	35.6	--	2.11
	09/21/20	Well Decommissioned				

Notes:

ft amsl = Feet above mean sea level

-- = Not measured / not analyzed

mg/L = Milligrams per liter

µg/L = Micrograms per liter

Bold = values that exceed the established regulatory cleanup level

UJ = Estimated value because surrogate recoveries were outside of the established quality control limits

J = Estimated value

NE = Not Established

D = Duplicate sample

¹ = All active wells surveyed December 2021 by AHBL. Elevations are referenced to NAVD88 vertical datum.

All historical groundwater elevations for MW-19 and MW-20 are corrected to the current surveyed elevation.

² = Site-specific cleanup concentration established in July 2003 WA Ecology Draft Cleanup Action Plan and based on background concentrations from wells MW-6 and MW-7.

³ = Washington State Department of Ecology Model Toxics Control Act Method B cleanup level

Analytical Methods:

Nitrate-N = Nitrate as nitrogen (-N). Analyzed by EPA Methods 300.0, 353.2, or 353.3. Since 2013 nitrate-N reported as nitrate-N + nitrite-N.

Dinoseb = by EPA Method 8151A

TOC = Total Organic Carbon by Standard Method 5310B/C or EPA 415.1

TABLE 5
GROUNDWATER MONITORING AND SAMPLING PROGRAM

Nutrien Ag Solutions, Inc.
3482 Glade Road North
Pasco, WA

Well Identification	Water Levels	Field Parameters ¹	Nitrate-N (EPA 353.2)
MW-4R	Quinquennially	Quinquennially	Quinquennially
MW-14R	Quinquennially	Quinquennially	Quinquennially
MW-15R	Quinquennially	Quinquennially	Quinquennially
MW-19	Quinquennially	Quinquennially	Quinquennially
MW-20	Quinquennially	Quinquennially	Quinquennially

Notes:

Nitrate-N = Nitrate as nitrogen (analyzed as nitrate-N + nitrite-N)

TOC = Top of casing

Quinquennially = Every 5 years in June

¹ = Temperature, pH, specific conductance, dissolved oxygen, oxidation reduction potential, and turbidity

APPENDIX A

**FRANKLIN COUNTY PERMIT TO CONSTRUCT
WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

Contractor's Work Order # _____

10031

PERMISSION TO CONSTRUCT

Upon the condition, stipulations, and considerations hereinafter stated, permission is hereby granted by
Franklin County to NUTRIEN AG SOLUTIONS, INC. of
Kathleen Bergholm 208.390.4097 Kathleen.Bergholm@nutrien.com to construct REMOVE MONITORING WELLS
across AND ALONG WEST HALF OF GLADE NORTH ROAD
located SEE ATTACHED SITE PLAN FOR LIMITS OF CONSTRUCTION of
Section 25, Township 10 North, Range 29 E.W.M., as per provision numbers.

Contractor's Name and Phone# SHANE FITCH, RUBIK ENVIROMENTAL CONSULTING
(775)-432-0044, sfitch@rubikenv.com

PROVISIONS:

- ☒ 1. Proper signs, barricades, flagmen, lights, or flares will be maintained as specified in the Manual on Uniform Traffic Control Devices.
- ☒ 2. A minimum of one-way traffic shall be maintained during all operations.
- ☐ 3. A detour will be maintained.
- ☒ 4. Access will be made available to property owner(s) along the road.
- ☐ 5. The crossing will be made by boring under the roadway and any damage to the roadway will be the responsibility of the holder of this permit.
- ☐ 6. Before excavation the pavement shall be cut to neat lines and all repairs made on neat straight lines perpendicular to the center line of the road.
- ☒ 7. Under no condition will the paved roadway surface or curb and gutter sections be cut or disturbed.
- ☒ 8. No excavation shall be left open over night.
- ☐ 9. The top of the pipe, conduit, or cable is to be at least four feet below the roadway surface.
- ☐ 10. The top of the pipe, conduit, or cable is to be at least _____ feet below the roadway surface.
- ☒ 11. Backfill will be well compacted using a mechanical tamper.
- ☐ 12. The top 16 inches of backfill will consist of compacted layers of the following materials: 2 inch minus ballast; 2 layers each 4 inches thick, a total of 8 inches; top course 5/8 minus, 1 layer 4 inches thick, and asphaltic concrete, 2 layers each 2 inches thick, a total of 4 inches.
- ☐ 13. The top 10 inches of backfill will consist of compacted layers of the following materials: top course 5/8 minus, 2 layers each 3 inches thick, a total of 6 inches; and asphaltic concrete, 2 layers each 2 inches thick, a total of 4 inches.
- ☐ 14. Gravel road backfill will consist of top course 5/8 minus, 1 layer 4 inches thick.
- ☒ 15. All excess excavated material shall be hauled away and disposed of.
- ☒ 16. Backfill material shall consist of clean native material granular material compacted in layers not to exceed 6 inches.
- ☒ 17. The roadway will be returned to a state of good repair.
- ☒ 18. The shoulders will be repaired and re-graveled and the holder of this permit shall dispose of any excess materials.
- ☐ 19. The cable or pipe is to be sleeved when crossing road.
- ☒ 20. Cable or pipe is to be kept in outside 5 feet of right-of-way.
- ☒ 21. There is a \$ 0.00 deposit in the County Engineer's Office ~~to insure the asphalt surface of the roadway is properly patched. If this is not satisfactorily completed within 30 days from the date of this permit, the deposit will be forfeited.~~
- ☒ 22. Construction will be done in accordance with provisions set forth in Resolution No. 2000-330.
- ☒ 23. The County Road Engineer's Office shall be notified prior to any work.
- ☒ 24. 48 hours before any excavation will start; the grantee will call 811 for location of underground utilities.
- ☐ 25. The ACP/BST surface of the roadway shall be properly patched before AS SOON AS PRACTICAL.
- ☐ 26. All ACP/BST surface roads must be patched the same day work is done.

Comments:

-Condition 21 should read "There is no deposit to be provided by the applicant for construction inspection services to be provided by Franklin County Public Works.", however a record of time spent on the inspection, preliminary review, and any time utilized working on this project by Franklin County Engineering staff will be directly billed to applicant.

-Notification to County inspector required for any work conducted within the right of way. Contractor shall meet the requirements and conditions of the approved construction plans.

THE GRANTEE DOES HEREBY AGREE AND UNDERTAKE TO CONSTRUCT AND MAINTAIN THE WORKS OR SUBJECT MATTER HEREIN REFERRED TO INSUCH A MANNER AS TO ABSOLUTELY PROTECT ALL USERS OF THE HIGHWAY UPON WHICH THE SAME IS CONSTRUCTED OR MAINTAINED AND DOES HEREBY AGREE AND UNDERTAKE TO INDEMNIFY AND SAVE HARMLESS FRANKLIN COUNTY OR ITS OFFICERS, AGENTS, OR SERVANTS FROM ALL SUITS ACTIONS, CLAIMS, OR PROCEEDINGS OF EVERY NAME OR DESCRIPTION IN LAW OR IN EQUITY BROUGHT AGAINST FRANKUN COUNTY, ITS OFFICERS, AGENTS, OR SERVANTS FOR OR ON ACCOUNT OF ANY INJURIES OR DAMAGES RECEIVED OR SUSTAINED BY ANY PERSON . STRUCTURE, OR PROPERTY BY REASON OF OR INCIDENTAL TO THE CONSTRUCTION AND MAINTENANCE OF THE WORKS OR SUBJECT MATTER HEREIN REFERRED TO.

IT IS EXPRESSLY UNDERSTOOD BY THE SAID GRANTEE THAT THE PERMISSION HEREIN GRANTED IS NOT A PERMANENT OR PERPETUAL PERMISSION. EASEMENT, OR FRANCHISE. BUT THAT THE PERMISSION HEREIN GRANTED IS A PERMISSION BY SUFFERANCE ONLY AND THAT FRANKLIN COUNTY RESERVES THE RIGHT IN THE GRANTING OF THIS PERMISSION TO AT ANY TIME AND FOR ANY REASON REVOKE AND TERMINATE THE SAME AND TO REMOVE THE WORKS OR SUBJECT MATTER HEREIN REFERRED TO AT ANY TIME AT THE COST OF SAID GRANTEE.

THE CONSTRUCTION AND MAINTENANCE OF THE WORKS OR SUBJECT MATTER HEREIN REFERRED TO SHALL, AT ALL TIMES, BE SUBJECT TO THE APPROBATION AND APPROVAL OF THE COUNTY ENGINEER OF FRANKUN COUNTY.

THIS PERMIT IS SUBJECT TO APPLICABLE LAWS AND IT IS THE PERMITTEE'S RESPONSIBILITY TO RESEARCH AND VERIFY RIGHT-OF-WAY BEFORE INSTALLATION.

Date: 9/21/2021

Accepted:

Signature

Shane Fitch
Print Name

THIS PERMIT EXPIRES _____
or in 6 months if not noted

Franklin County Public Works Department
3416 Stearman Avenue
Pasco, WA 99301 (509)545-3514

Craig Erdman P.E.

County Road Engineer

BY Robert B. Mendez
Robert B. Mendez
ASSOCIATE ENGINEER

INSTRUCTION FOR APPLICANTS

Applicants for permits to occupy Franklin County property or right-of-way, with utilities or road approaches, or holders of granted franchise rights contemplating work upon, along, over, under or across any Franklin County road, bridge, wharf, trestle, public place, street, avenue or alley on property in the County, shall first file with the County Engineer, his/her or their application to do such work.

Such applications shall be accompanied by drawings, in triplicate, as required by the County Engineer. Drawings shall be to a working scale, showing position and location of work names or numbers and width of roads, streets, etc., showing their location in plats, or subdivisions of sections, township and range, showing the relative position of such work to existing utilities, constructed, laid, installed or erected upon such roads, streets or public places.

All work shall be done in accordance with the *Franklin County Design Standards for the Construction of Roads and Bridges*. The applicant shall specify the type of construction by submitting plans showing the class of material and the manner in which the work is to be accomplished. All such materials and equipment shall be of the highest quality and the manner of excavation, fills, construction, installation, erection of temporary structures, traffic turnouts, road obstruction, barricades, etc., shall meet with the provisions of the *Franklin County Design Standards for the Construction of Roads and Bridges*, and shall require approval by the County Engineer. Signing, barricades and traffic control in the vicinity of the work shall strictly conform to provisions of "The Manual On Uniform Traffic Control Devices for Streets and Highways." The applicant shall pay to the County all costs of, and expenses incurred in the examination, inspection and supervision of such work on account of granting said permits.

The actual location of the work to be done under this permit, it's depth below or above surface or grade of any County structure, road, street, avenue, alley or public place shall be approved by the County Engineer prior to commencement of any work by the petitioner.

PERMIT CONDITIONS

1. The applicant, designated herein as the "grantee," his successors and assigns, shall have the right and authority to enter upon the right-of-way of the County road, street, alley, public place or structure as indicated on the front of this form, for the purpose of doing such work as applied for, and approved by the County Engineer.
2. The location, type of work, materials and equipment used, manner of erection or construction, safeguarding of public traffic during work or after doing same, mode of operation and manner of maintenance of project petitioned for, shall be approved by the County Engineer prior to start of work and shall be subject to inspection by the County Engineer so as to assure proper compliance with the terms of this permit.
3. The grantee shall commence work within 30 days after the granting of this permit, if, at the end of one (1) year after the date of granting same the grantee shall have not completed the installation, then the rights herein conferred shall cease and terminate.
4. The grantee shall leave all roads, streets, alleys, public places, and structures after installation and operation or removal of facility, in is as good and safe condition in all respects as it was before commencement of work.
5. In case of any damage to roads, streets, alleys, public places, structures or public property of any kind on account of said work done by the grantee, he/she shall at once repair said damage at his/her sole cost and expense.
6. The County Engineer, his/her agents or representatives may so order, or have done any and all work considered necessary to restore to a safe condition any roads, streets, alleys, public places, structures or public property which is in a condition dangerous to life or property resulting from the grantee's facility or it's installation as permitted, herein, and upon demand the grantee shall pay to the County all costs of such work and materials.
7. If at any time the county deems it advisable to widen, grade, re-grade, plank, pave, improve, alter or repair any road, street, public place or structure, the grantee upon written notice by the County Engineer, his representatives or agents, will at his own sole cost and expense, raise, lower, change, move or reconstruct such installations to conform to the plans of work contemplated or ordered by the county.
8. If upon written notice by the County Engineer the grantee fails to relocate any portion or all of the project as granted under this permit, the county, its agents or representatives, may do any work at the cost and expense of the grantee, and all costs to remove or reconstruct same, shall be borne by the grantee.
9. All such changes, reconstruction or relocation by the grantees shall be done in such manner as will cause the least interference with any of the county's work and shall be subject to the same provisions which control an original installation. The county shall in no way be held liable for any damage to the grantee by reason of any such work by the county, its agents or representatives, or by the exercise of any rights by the county upon roads, streets public places or structures in question. The grantee shall have twenty-four (24) hours written notice by the County Engineer or its representative or agents of any blasting contiguous to the grantee's permit rights in order that he may protect his interests.
10. All provisions, conditions, regulations, and requirements herein contained shall be binding upon the successors and assigns of the grantee and all privileges of the grantee shall insure to such successors and assigns as if they were specifically mentioned.
11. The County Engineer may revoke, annul or terminate this permit if grantee fails to comply with any or all of its provisions, requirements or regulations as herein set forth or through willful or unreasonable neglect, fails to heed or comply with notices given him/her or if work herein permitted, is not installed or operated and maintained in conformity herewith or at all.
12. The Board of County Commissioners may at any time, change amend, modify, amplify or terminate any of the conditions herein enumerated so as to conform to any state statute or County regulation pertaining to the public welfare, safety, health or highway regulations as are, or may hereinafter be enacted, adopted or amended etc. The Board may terminate this permit if grantee fails to comply with any such changes.
13. The petitioner by accepting this permit agrees to notify and check with all utilities regarding their installations before commencing work, together with private property owners when such property is liable to injury or damage through the performance of such work, and the applicant shall make all necessary arrangements relative to the protection of such property and/or utilities.
14. In accepting this permit, the petitioner, his/her successors and assigns agrees to protect and save harmless the County from all claims, actions or damages of every kind and description which may accrue to or be suffered by any persons, corporation or property by reason of the performance of any such work, character of materials used or manner of installation, maintenance and operation or by the improper occupancy of rights-of-way or public place or public structure, and in case and such suit or action is brought against said County for damages arising out of or by reason of any of the above clauses, the petitioner, his successors or assigns will upon notice to him/her or them or commencement of such action defend the same at his/her or their sole cost and expense and will fully satisfy any judgment after the said suit or action shall have finally been determined if adversely to the County.
15. The County makes no guarantee as to the type, nature, and suitability of soils or other materials in the public right-of-way. If contaminated or hazardous material is discovered within or adjacent to the public right-of-way, the grantee shall stop Work and notify the County Engineer immediately.' All contaminated or hazardous material encountered by the grantee during work or excavation in the public right-of-way shall be handled, sampled, stored, and disposed of in accordance with federal, state and local regulations at the expense of the grantee. Before recommencing work within the public right-of-way, the grantee shall provide the County Engineer with documentation of plans which demonstrate that the contaminated or hazardous material has been properly handled and that continued work within the public right-of-way poses no threat to the environment and/or human health or safety of public or private property.

APPENDIX B

WELL CONSTRUCTION AND BORING LOGS

**WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

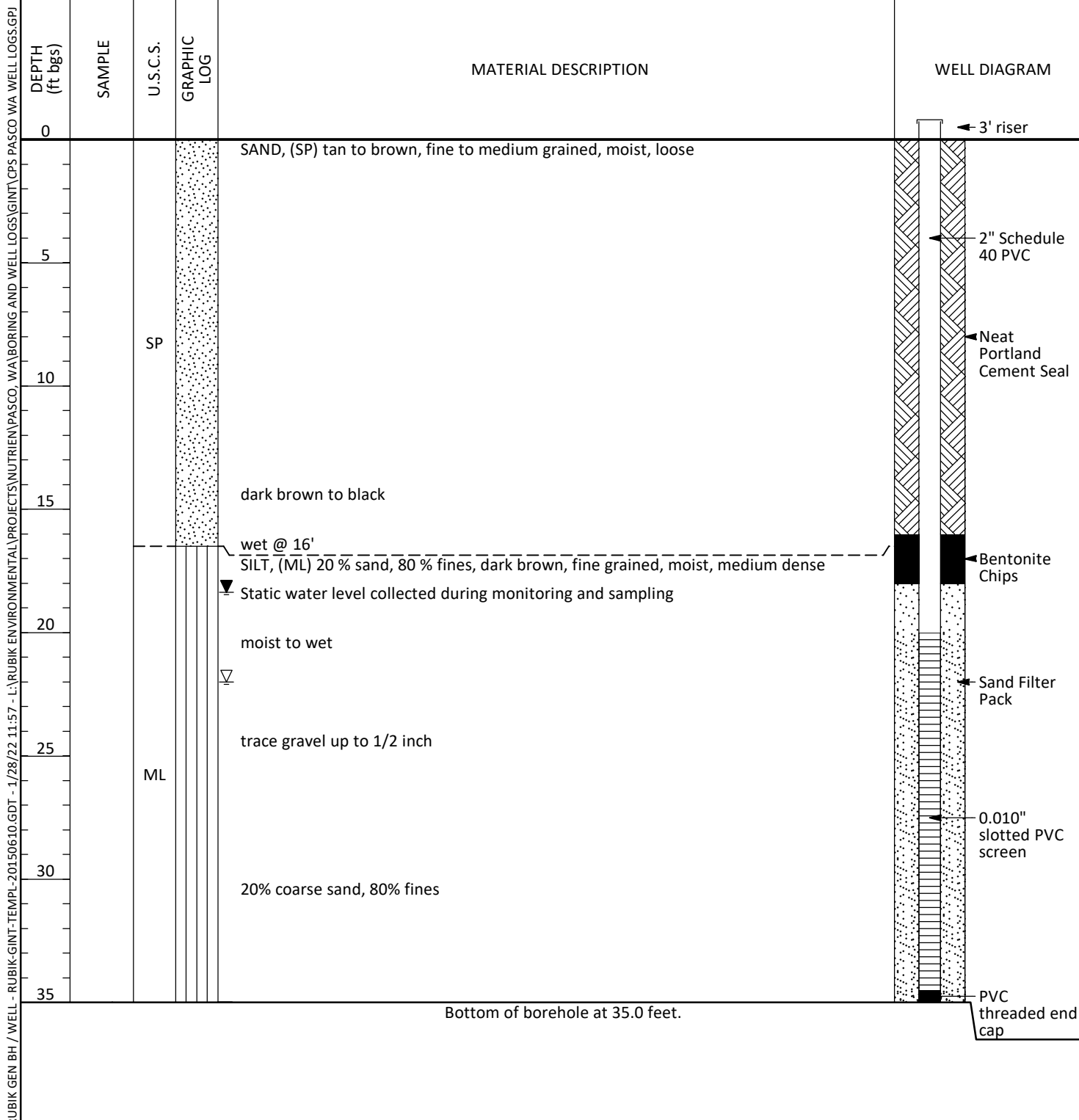


Rubik Environmental
320 Flint Street
Reno, NV 89501
Telephone: 775-622-0457

WELL: MW-4R

PAGE 1 OF 1

CLIENT	Nutrien Ag Solutions, Inc.	PROJECT NAME	Nutrien Pasco Facility
PROJECT NUMBER	03031-2021	PROJECT LOCATION	Pasco, Washington
DATE STARTED	11/18/21	COMPLETED	11/18/21
DRILLING CONTRACTOR	Cascade Drilling	GROUND ELEVATION	
DRILLING METHOD	Sonic	TOP OF CASING ELEVATION	
APPROVED BY	S. Fitch	LOCATION	
LOGGED BY	E. Farrar	GROUND WATER LEVELS:	
NOTES		▽ INITIAL	22 ft bgs
		▽ STATIC	18.36 ft bgs



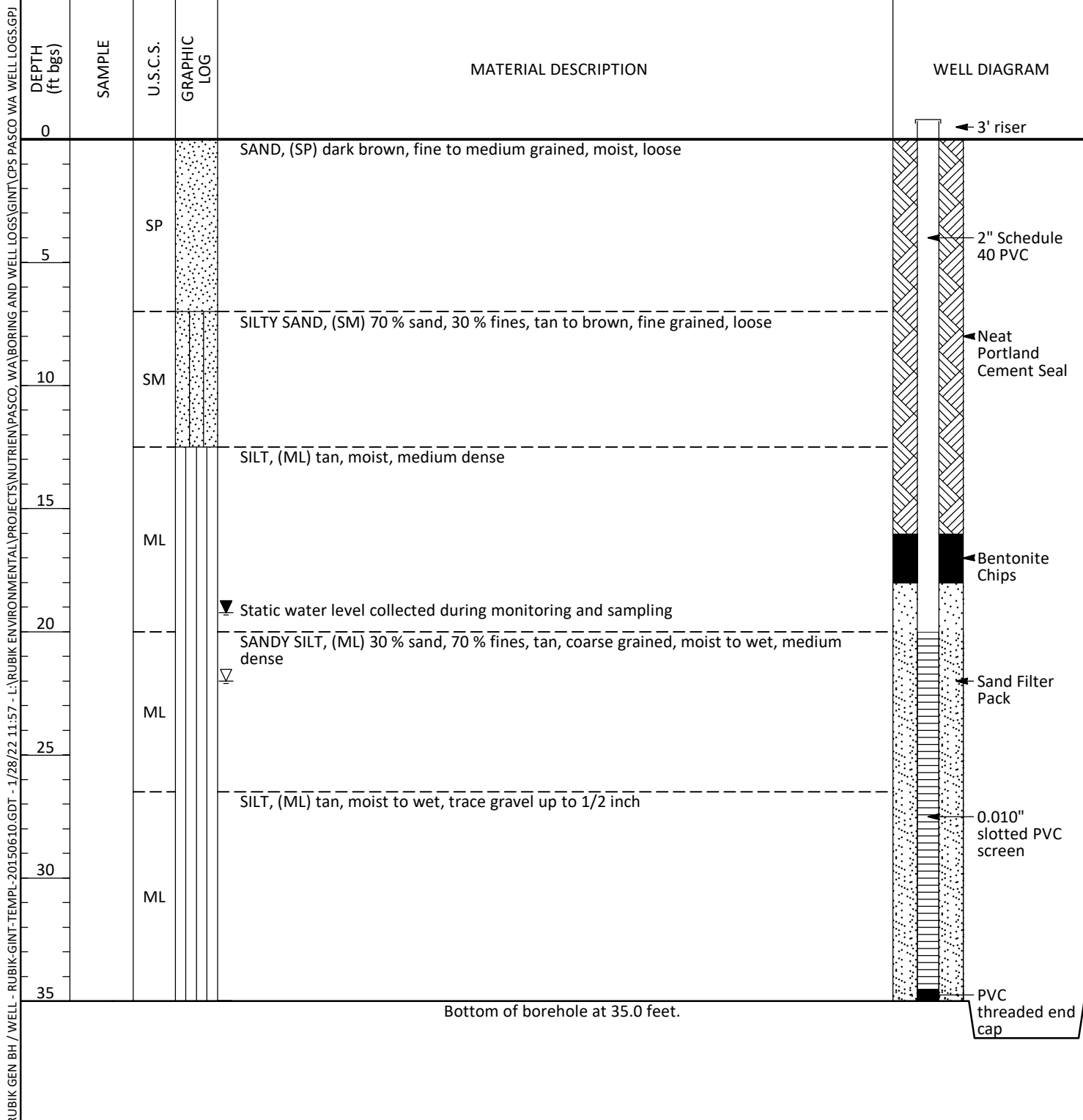


Rubik Environmental
320 Flint Street
Reno, NV 89501
Telephone: 775-622-0457

WELL: MW-14R

PAGE 1 OF 1

CLIENT <u>Nutrien Ag Solutions, Inc.</u>	PROJECT NAME <u>Nutrien Pasco Facility</u>
PROJECT NUMBER <u>03031-2021</u>	PROJECT LOCATION <u>Pasco, Washington</u>
DATE STARTED <u>11/18/21</u> COMPLETED <u>11/18/21</u>	GROUND ELEVATION _____
DRILLING CONTRACTOR <u>Cascade Drilling</u>	TOP OF CASING ELEVATION _____
DRILLING METHOD <u>Sonic</u> BORING DIAMETER <u>6 inches</u>	LOCATION _____
APPROVED BY <u>S. Fitch</u> LOGGED BY <u>E. Farrar</u>	GROUND WATER LEVELS:
NOTES _____	▽ INITIAL <u>22 ft bgs</u> ▽ STATIC <u>19.22 ft bgs</u>



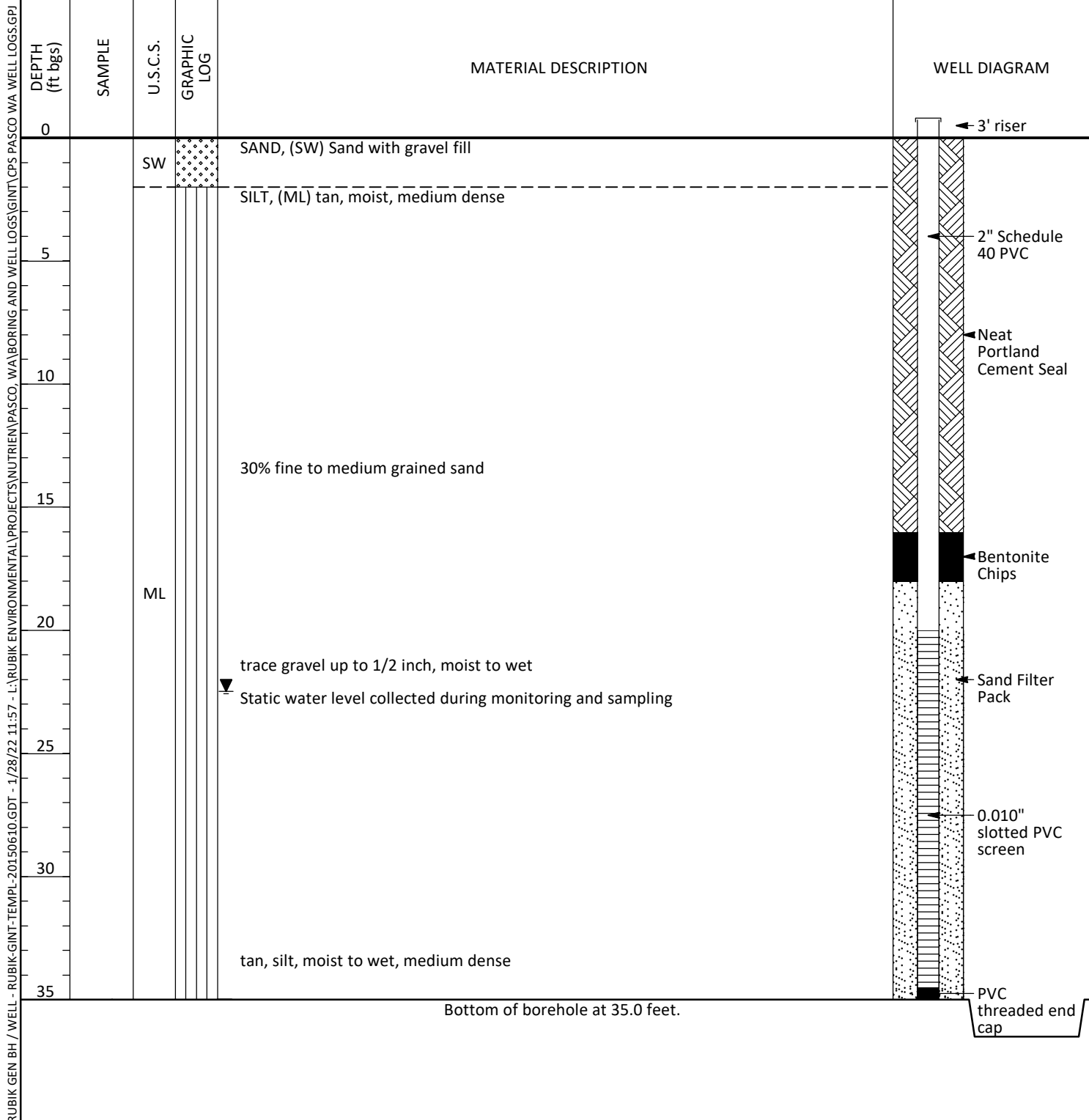


Rubik Environmental
320 Flint Street
Reno, NV 89501
Telephone: 775-622-0457

WELL: MW-15R

PAGE 1 OF 1

CLIENT	Nutrien Ag Solutions, Inc.	PROJECT NAME	Nutrien Pasco Facility
PROJECT NUMBER	03031-2021	PROJECT LOCATION	Pasco, Washington
DATE STARTED	11/18/21	COMPLETED	11/19/21
DRILLING CONTRACTOR	Cascade Drilling	GROUND ELEVATION	
DRILLING METHOD	Sonic	TOP OF CASING ELEVATION	
APPROVED BY	S. Fitch	LOCATION	
LOGGED BY	E. Farrar	GROUND WATER LEVELS:	
NOTES		INITIAL	
		STATIC	22.48 ft bgs



APPENDIX C

WELL DEVELOPMENT LOGS

**WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

[illegible]

[illegible]

[illegible]

APPENDIX D

WELL SURVEY REPORT

**WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

Surveyor's Report

Monitor Well Survey - Nutrien Ag Solutions

53482 Glade Road North, Pasco, WA

Notes: X, Y & Z SURVEY WAS CONDUCTED ON DECEMBER 9TH, 2021. X, Y & Z COLLECTED WITH SPECTRUM PRECISION SP85 GPS SYSTEM USING RTK METHODS. THE SURVEY WAS REFERENCED TO NAD83 HORIZONTAL DATUM & NAVD88 VERTICAL DATUM USING THE WASHINGTON STATE PLANE REFERENCE NETWORK (WSRN).

WELL CASING ELEVATIONS WERE MEASURED ON THE NORTH EDGE OF THE WELL CASINGS (UNLESS OTHERWISE MARKED), USING A TRIMBLE 57 TOTAL STATION. ALL ELEVATIONS ARE REFERENCED TO NAVD88 DATUM DERIVED FROM WSRN.

THE SURVEY WAS CONDUCTED BY OR UNDER THE SUPERVISION OF JOHN W. BECKER P.L.S.# 38480.

Monitor Well Coordinates

Well ID	Latitude	Longitude	WA Zone III Northing	WA Zone III Easting	Casing Elevation	Ground Elevation
MW-19	N046° 19' 23.29"	W119° 07' 17.94"	363986.6410	1988627.3750	483.07	483.43
MW-20	N046° 19' 20.32"	W119° 07' 20.58"	363682.9850	1988447.5480	478.69	479.01
MW-4R	N046° 19' 20.30"	W119° 07' 25.19"	363674.7930	1988124.2840	476.72	474.08
MW-14R	N046° 19' 17.58"	W119° 07' 26.04"	363398.2590	1988069.5060	473.79	471.30
MW-15R	N046° 19' 15.50"	W119° 07' 26.03"	363187.6980	1988073.6200	473.63	470.76

NUTRIEN AG MONITORING WELLS
A PORTION OF THE E 1/2 OF SEC. 25, TWN. 10 N., RGE. 29 E., W.M.
CITY OF PASCO, FRANKLIN COUNTY, WASHINGTON.



VERTICAL DATUM

NAVD 1988 VERTICAL DATUM ON ORTHOMETRICALLY CORRECTED GPS OBSERVATIONS USING WSRN AND GEOID 2012A.

BASIS OF BEARING

NAD 1983/11 WASHINGTON STATE PLANE SOUTH PROJECTION, BASED ON GPS OBSERVATIONS USING WSRN AND GEOID 2012A. UNITS OF MEASUREMENT ARE US SURVEY FEET.

UTILITY NOTES

1. SURFACE UTILITY FACILITIES ARE SHOWN HEREON PER FIELD LOCATED VISIBLE EVIDENCE. THERE MAY BE UTILITIES THAT EXIST ON THIS SITE OTHER THAN THOSE GRAPHICALLY DEPICTED HEREON.
2. UNDERGROUND (BURIED) UTILITIES SHOWN HEREON ARE BASED ON COMBINATIONS OF VISIBLE SURFACE EVIDENCE, UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS). ALL UNDERGROUND UTILITIES SHOWN HEREON ARE APPROXIMATE AND, IN SOME CASES, ARE SHOWN AS STRAIGHT LINES BETWEEN FIELD LOCATED SURFACE UTILITY FACILITIES. UNDERGROUND UTILITIES MAY HAVE BENDS, CURVES OR CONNECTIONS WHICH ARE NOT SHOWN.
3. ALTHOUGH LOCATIONS OF UNDERGROUND UTILITIES BASED ON UTILITY LOCATOR MARKINGS AND RECORD DATA (SUCH AS AS-BUILT OR UTILITY DESIGN DRAWINGS) ARE DEEMED RELIABLE, AHBL, INC. ASSUMES NO LIABILITY FOR THE ACCURACY OF SAID DATA.
4. CALL 1-800-424-5555 BEFORE ANY CONSTRUCTION.

RELIANCE NOTE

THIS SURVEY WAS PREPARED AT THE REQUEST OF SHANE FITCH FOR THE SOLE AND EXCLUSIVE USE OF RUBIK ENVIRONMENTAL CONSULTING. RIGHTS TO RELY UPON AND, OR USE THIS SURVEY DO NOT EXTEND TO ANY OTHER PARTY EXCEPT THROUGH EXPRESS RECERTIFICATION BY THE PROFESSIONAL LAND SURVEYOR WHOSE STAMP AND SIGNATURE APPEAR HEREON.

EQUIPMENT USED

3" TOTAL STATION UTILIZING STANDARD FIELD TRAVERSE METHODS FOR CONTROL AND STAKING.

SURVEYOR'S CERTIFICATE

I, JOHN W. BECKER, A PROFESSIONAL LAND SURVEYOR IN THE STATE OF WASHINGTON, HEREBY CERTIFY THAT THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECT SUPERVISION IN DECEMBER 2021, AT THE REQUEST OF RUBIK ENVIRONMENTAL CONSULTING.

JOHN W. BECKER, PLS 38480 DATE



5804 Road 90, Suite H Pasco, WA 99301
509.380.5883 TEL 253.383.2572 FAX www.ahbl.com WEB

Project Title:

NUTRIEN AG
MONITORING WELLS

Client: RUBIK
ENVIRONMENTAL
CONSULTING
320 FLINT STREET
RENO, NEVADA 89501
SHANE FITCH
(775) 250-8288

Job No.

2210956.50

Issue Set & Date:

DECEMBER 13, 2021



NOTICE:
ALLEGATION OF THIS DOCUMENT SHALL INVALIDATE THE PROFESSIONAL SEAL AND SIGNATURE. PERMISSION OF THIS DOCUMENT DOES NOT DEROGATE FROM RECORD OR OTHER RIGHTS IN IT. THIS DOCUMENT IS FOR USE ONLY FOR THE PROJECT IDENTIFIED IN THE TITLE BLOCK AND IS NOT TO BE USED FOR OTHER PURPOSES, OR ADDITION TO THAT PROJECT OR FOR ANY OTHER PROJECT.

△

△

△

△

Revisions:

Sheet Title:

TOPOGRAPHIC
SURVEY

Designed by: Drawn by: Checked by:
EAF TAD

Sheet No.

1
1 of 1 Sheets

APPENDIX E

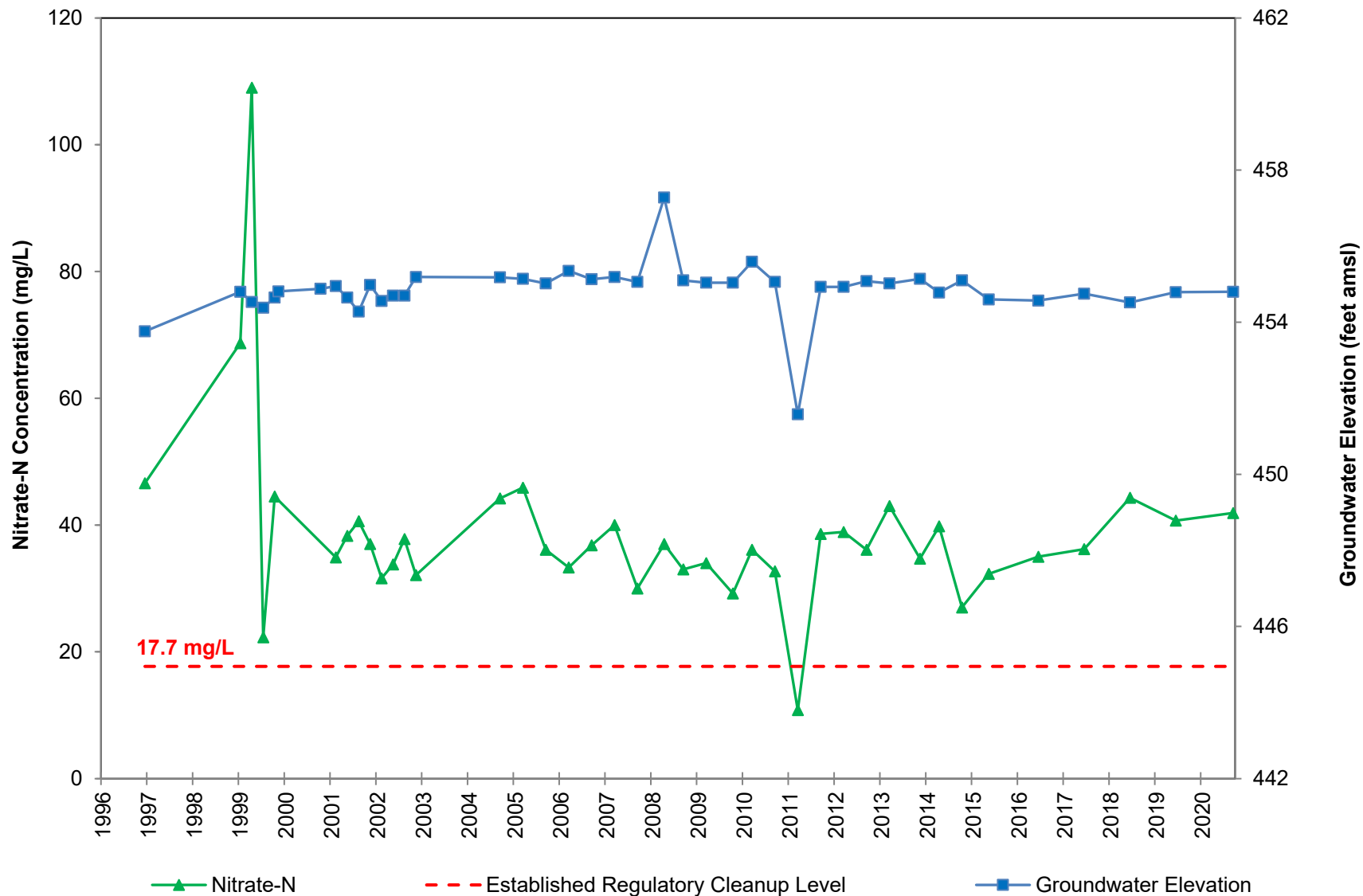
**GRAPHS OF COC CONCENTRATIONS AND
GROUNDWATER ELEVATIONS OVER TIME**

**WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

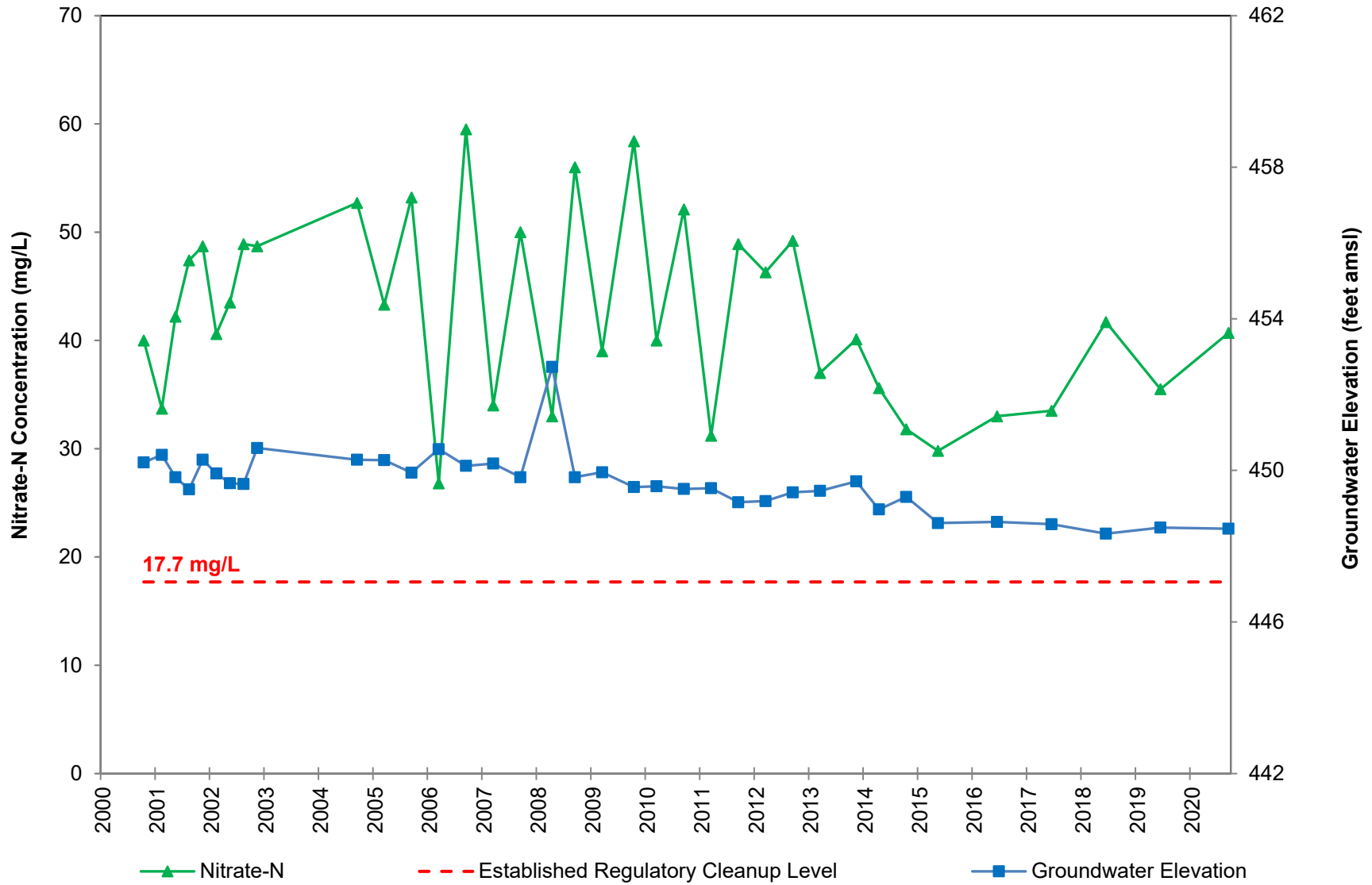
Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023

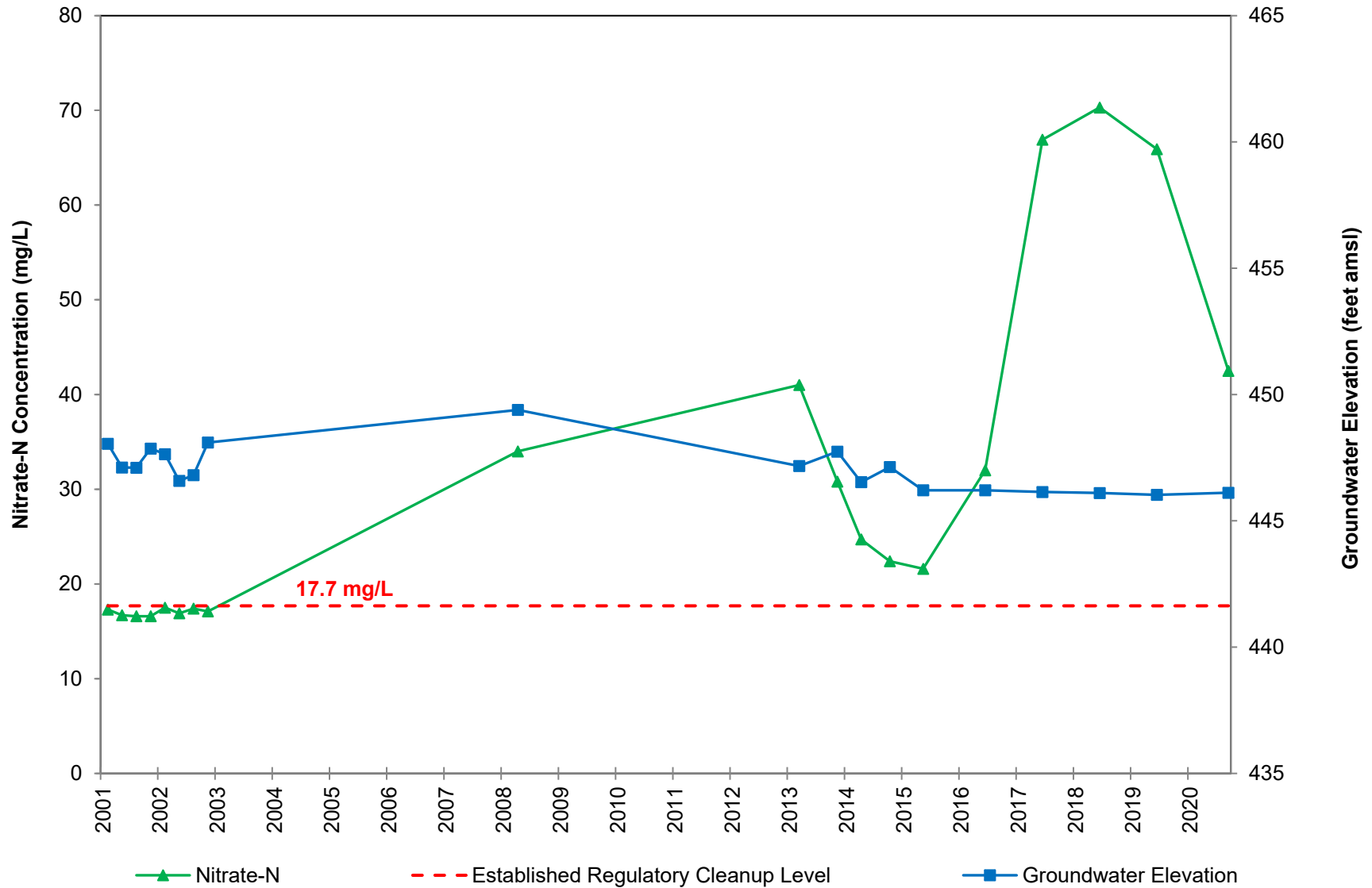
Well MW-4
Nutrien - Pasco WA
Nitrate-N and Groundwater Elevation vs. Time



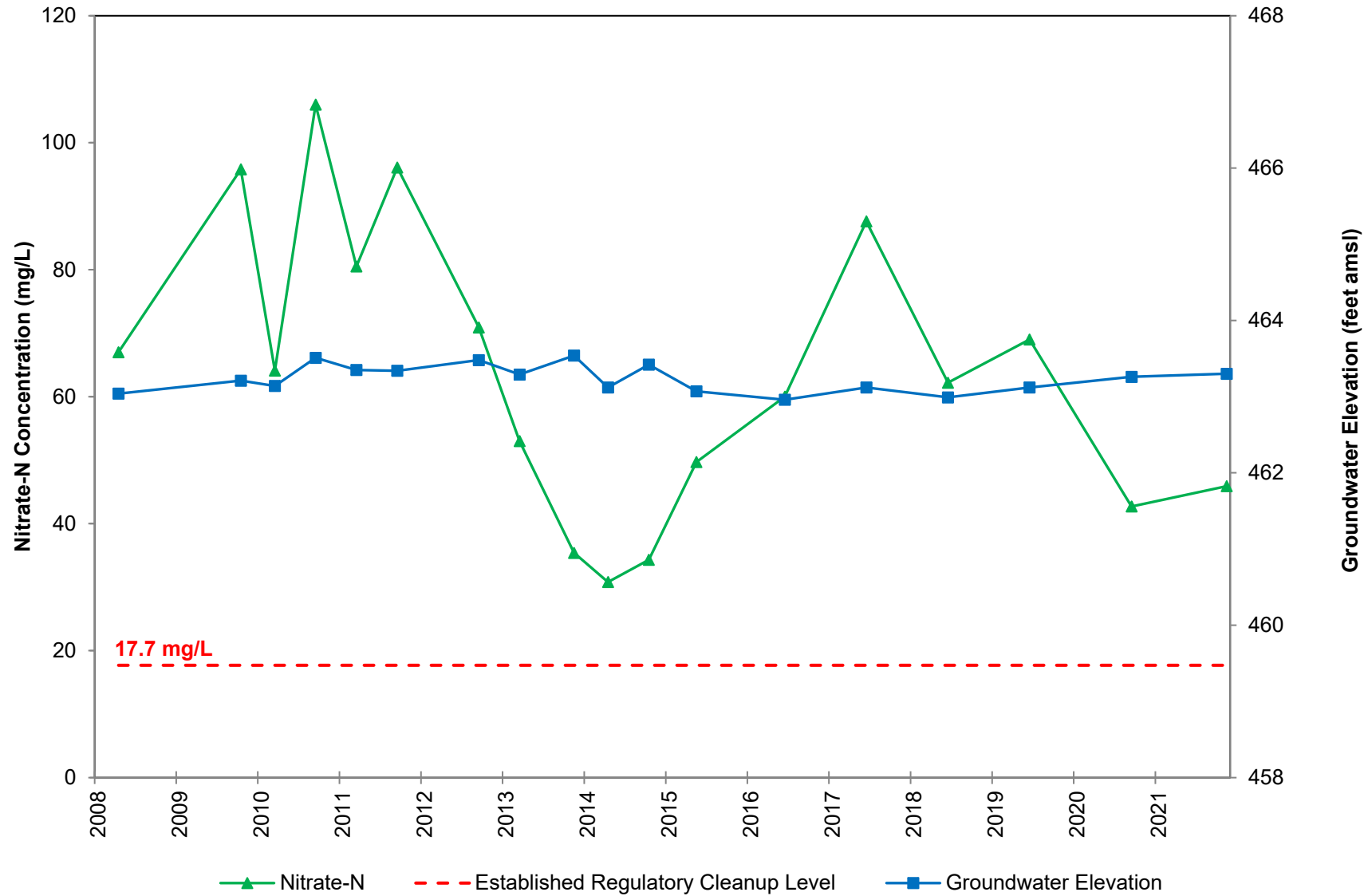
Well MW-14
Nutrien - Pasco WA
Nitrate-N and Groundwater Elevation vs. Time



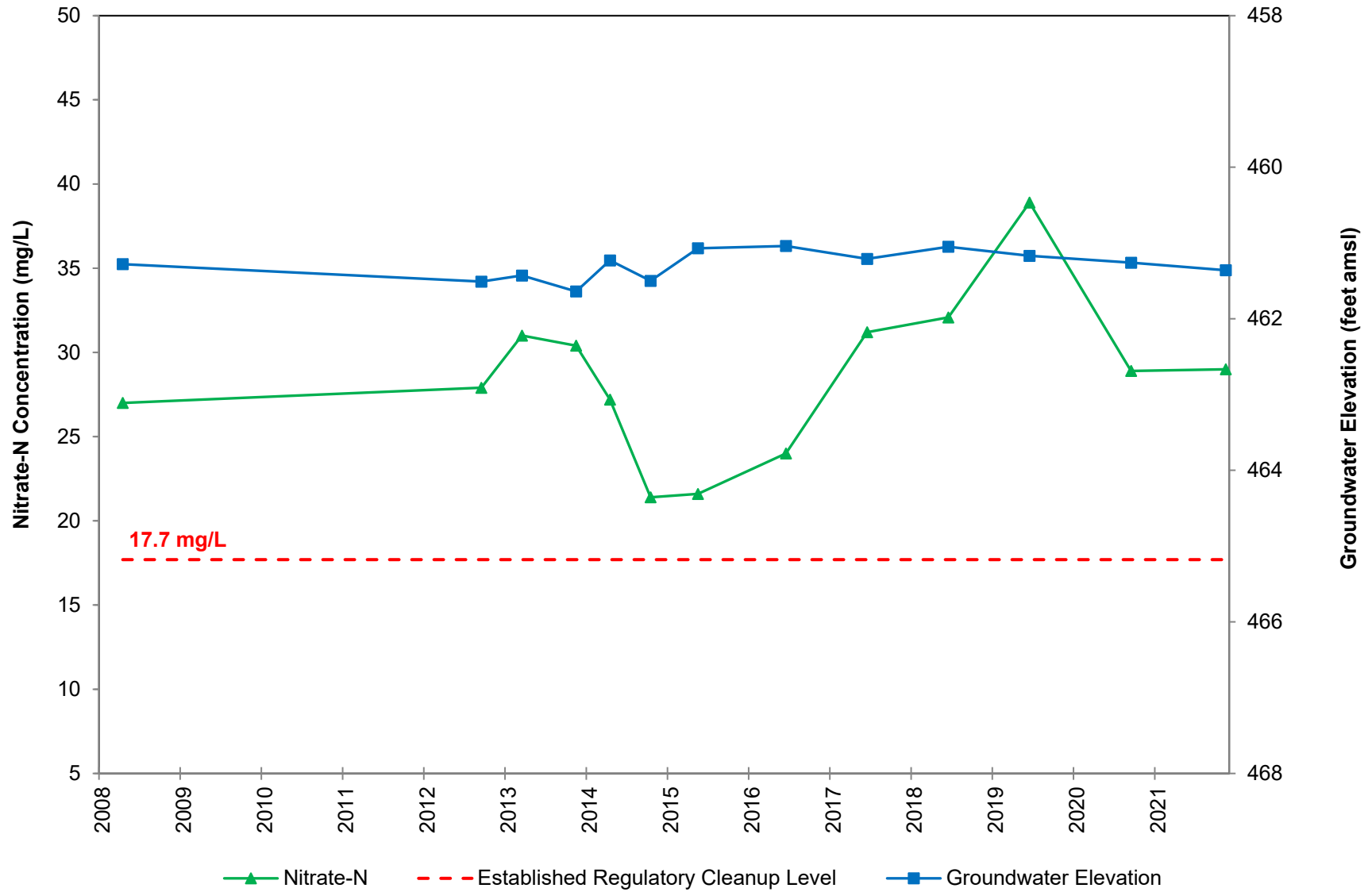
Well MW-15
Nutrien - Pasco, WA
Nitrate-N and Groundwater Elevation vs. Time



Well MW-19
Nutrien - Pasco, WA
Nitrate-N and Groundwater Elevation vs. Time



Well MW-20
Nutrien - Pasco, WA
Nitrate-N and Groundwater Elevation vs. Time



APPENDIX F

**MONITORING WELL GAUGING AND SAMPLING FIELD SHEETS
WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023



Rubik
320 Flint Street
Reno, Nevada 89501
rubikenvironmental.com
775-622-0857

LOW FLOW WELL SAMPLING FORM

Date: 202/11/24				Client: Nutrien				
Site: Agave				Field Personnel: EC				
Well ID: MW-4R				Ambient Temp: 30				
Purging Device: Bladder Pump				Pump Setting: 10/30				
Sampling Method: Bladder Pump				COMMENTS:				
Well Diameter (in): 2 (Stick up) Flush								
Depth to Water (ft btoc): 21.00								
Total Well Depth (ft btoc): 37.80								
Top / Bottom of Screen (ft btoc): 30/35								
Pump intake depth (ft btoc): 26								
TIME	PURGED VOLUME (mL)	DEPTH TO WATER (ft btoc)	TEMP (C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1551	0	21.10	12.5	7.20	711	3.48	202.5	22.1
1556	1000	21.15	13.8	7.24	741	0.67	196.5	12.0
1601	2000	"	14.3	7.26	747	0.45	192.0	62.1
1606	3000	21.17	14.3	7.25	749	0.41	189.5	20.1
Sample ID	Sample Date	Sample Time	Container type and number				Preservative	Method
MW-4R	11/21	1606	250p				2	353.2/4500
								8260
								524M
								504.1
								8151
								8321

Preservative key : 1=HCL 2=H2SO4 3=HNO3 4=Na2S2O3 5=Methanol



Rubik
320 Flint Street
Reno, Nevada 89501
rubikenvironmental.com
775-622-0857

LOW FLOW WELL SAMPLING FORM

Date: 2021/1/21				Client: N-Hr.4				
Site: P-100				Field Personnel: CF				
Well ID: MW-14R				Ambient Temp: 35				
Purging Device: Bladder Pump				Pump Setting: 10/30				
Sampling Method: Bladder Pump				COMMENTS:				
Well Diameter (in): 2 ☒ Stick up ☐ Flush								
Depth to Water (ft btoc): 21.71								
Total Well Depth (ft btoc): 38.13								
Top / Bottom of Screen (ft btoc): 20/35								
Pump intake depth (ft btoc): 28								
TIME	PURGED VOLUME (mL)	DEPTH TO WATER (ft btoc)	TEMP (C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1523	0	21.90	12.4	7.42	741	7.93	204.1	285
1528	1000	21.97	13.9	7.29	760	3.71	203.0	113
1533	2000	21.75	13.8	7.28	762	2.71	200.8	66.5
1538	3000	21.74	13.8	7.21	763	2.61	199.2	38.2
Sample ID	Sample Date	Sample Time	Container type and number				Preservative	Method
MW-14R	1/21	1539	250p				2	353.2/4500
								8260
								524M
								504.1
								8151
								8321

Preservative key : 1=HCL 2=H2SO4 3=HNO3 4=Na2S2O3 5=Methanol



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LOW FLOW WELL SAMPLING FORM

Date: 2011/2/1				Client: Nutrien				
Site: Pasco				Field Personnel: EJ				
Well ID: MW-15R				Ambient Temp: 30				
Purging Device: Bladder Pump				Pump Setting: 10/30				
Sampling Method: Bladder Pump				COMMENTS:				
Well Diameter (in): 2 ☒ Stick up ☐ Flush								
Depth to Water (ft btoc): 25.35								
Total Well Depth (ft btoc): 37.49								
Top / Bottom of Screen (ft btoc): 20/35								
Pump intake depth (ft btoc): 30								
TIME	PURGED VOLUME (mL)	DEPTH TO WATER (ft btoc)	TEMP (C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1456	0	25.35	10.4	7.99	739	6.97	257.1	245.2
1501	1000	25.40	13.5	7.60	852	7.09	244.7	207.7
1506	2000	25.70	13.7	7.56	899	7.24	220.2	58.2
1511	3000	25.75	13.9	7.54	884	6.55	201.8	18.7
Sample ID	Sample Date	Sample Time	Container type and number				Preservative	Method
MW-15R	11/21	1512	2rep				2	353.2/4500
								8260
								524M
								504.1
								8151
								8321

Preservative key : 1=HCL 2=H2SO4 3=HNO3 4=Na2S2O3 5=Methanol



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775-622-0857

LOW FLOW WELL SAMPLING FORM

Date: 2001/12/1		Client: Nyrcon	
Site: Pasco		Field Personnel: RL	
Well ID: MW-19		Ambient Temp: 30	
Purging Device: Bladder Pump		Pump Setting: 10/30	
Sampling Method: Bladder Pump		COMMENTS: Dwp collected here	
Well Diameter (in): 2 Stick up ☒ Flush			
Depth to Water (ft btoc): 19.77			
Total Well Depth (ft btoc): 24.60			
Top / Bottom of Screen (ft btoc): 10/25			
Pump intake depth (ft btoc): 23			

TIME	PURGED VOLUME (mL)	DEPTH TO WATER (ft btoc)	TEMP (C)	pH	COND. (μS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1653	C	19.77	7.1	7.21	594	17.26	189.3	62.1
1658	100cc	19.79	12.5	7.20	748	4.63	186.7	11.85
1703	200cc	19.82	12.4	7.28	724	5.29	182.3	260
1708	300cc	19.89	12.3	7.29	769	4.47	182.5	187

Sample ID	Sample Date	Sample Time	Container type and number	Preservative	Method
MW-19 Dwp	11/21	1710	250P	2	353.2/4500
					8260
					524M
					504.1
					8151
					8321

Preservative key : 1=HCL 2=H2SO4 3=HNO3 4=Na2S2O3 5=Methanol



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Reno, Nevada 89501
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LOW FLOW WELL SAMPLING FORM

Date: 2021/12/21				Client: Venturi				
Site: Price				Field Personnel: CF				
Well ID: MW-20				Ambient Temp: 32				
Purging Device: Bladder Pump				Pump Setting: 10/50				
Sampling Method: Bladder Pump				COMMENTS:				
Well Diameter (in): 2 Stick up ☒ Flush								
Depth to Water (ft btoc): 17.33								
Total Well Depth (ft btoc): 21.03								
Top / Bottom of Screen (ft btoc): 11/21								
Pump intake depth (ft btoc): 20								
TIME	PURGED VOLUME (mL)	DEPTH TO WATER (ft btoc)	TEMP (C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
1625	0	17.33	12.7	7.10	649	8.21	185.6	116
1630	100	17.35	12.1	7.15	662	3.56	182.8	112
1635	200	17.37	12.3	7.18	666	3.36	181.5	95.4
1640	300	17.38	12.5	7.19	671	4.09	180.8	86.2
Sample ID	Sample Date	Sample Time	Container type and number				Preservative	Method
MW-20	11/21	1641	250p				2	353.2/4500
								8260
								524M
								504.1
								8151
								8321

Preservative key : 1=HCL 2=H2SO4 3=HNO3 4=Na2S2O3 5=Methanol

APPENDIX G

**LABORATORY ANALYTICAL REPORT
WELL REPLACEMENT & 2021 GROUNDWATER MONITORING
AND SAMPLING REPORT - AMENDED**

Nutrien Ag Solutions, Inc.
Pasco, Washington

May 2022
Amended April 2023



December 06, 2021

Service Request No:K2113707

Steve Meninger
Rubik Environmental, Inc
320 Flint Street
Reno, NV 89501

Laboratory Results for: Nutrien Pasco

Dear Steve,

Enclosed are the results of the sample(s) submitted to our laboratory November 23, 2021
For your reference, these analyses have been assigned our service request number **K2113707**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Howard Holmes
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental



Narrative Documents

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Rubik Environmental, Inc
Project: Nutrien Pasco
Sample Matrix: Water

Service Request: K2113707
Date Received: 11/23/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Six water samples were received for analysis at ALS Environmental on 11/23/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

General Chemistry:

No significant anomalies were noted with this analysis.

Approved by



Date

12/06/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-4R		Lab ID: K2113707-001				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	28.4			2.5	mg/L	353.2
CLIENT ID: MW-14R		Lab ID: K2113707-002				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	38.1			2.5	mg/L	353.2
CLIENT ID: MW-15R		Lab ID: K2113707-003				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	41.5			2.5	mg/L	353.2
CLIENT ID: MW-19		Lab ID: K2113707-004				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	45.9			2.5	mg/L	353.2
CLIENT ID: MW-20		Lab ID: K2113707-005				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	29.0			1.3	mg/L	353.2
CLIENT ID: DUP		Lab ID: K2113707-006				
Analyte	Results	Flag	MDL	MRL	Units	Method
Nitrate+Nitrite as Nitrogen	45.7			2.5	mg/L	353.2



Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS

Service Request:K2113707

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
K2113707-001	MW-4R	11/21/2021	1606
K2113707-002	MW-14R	11/21/2021	1539
K2113707-003	MW-15R	11/21/2021	1512
K2113707-004	MW-19	11/21/2021	1710
K2113707-005	MW-20	11/21/2021	1641
K2113707-006	DUP	11/21/2021	

Chain of Custody Form

Page 1 of 1

ALS Environmental
1317 S. 13th Ave
Kelso, WA 98626
Tel: (360) 577-7222
Fax: (360) 636-1068
www.alsglobal.com

ALS Project Manager:				Howard Holmes		ALS Work Order #:								
Project Information							Parameter/Method Request for Analysis							
Project Name		Nutrien Pasco					TON (Nitrate + Nitrite as N) [EPA 353.2]						Comments	
Project Number		03031-2021-MS												
Company Name		Rubik Environmental, Inc												
Send Report To		Steve Meninger		Site Name		Nutrien Pasco								
Address		320 Flint Street		Site Address		3482 Glade Road North								
City/State/Zip		Reno, NV 89501		City/State/Zip		Pasco, WA 99301								
Phone		775-622-0857		Phone		(775) 250-8288								
Fax														
e-Mail Address		smeninger@rubikenv.com; data@rubikenv.com												
No.	Sample ID	Date	Time	Matrix	Pres. Key Numbers	# Bottles	A	B	C	D	E	F	Comments	
	MW-4R	2/21/12	1606	Liquid	3	1	X							
	MW-14R		1539	Liquid	3	1	X							
	MW-15R		1512	Liquid	3	1	X							
	MW-19		1710	Liquid	3	1	X							
	MW-20		1641	Liquid	3	1	X							
	DUP			Liquid	3	1	X							
Sampler(s): Please Print & Sign		Eric Fenn		Shipment Method:		FedEx		Required Turnaround Time: (Check Box)		☒ Standard - 10Wk Days		Results Due Date:		
								☐ 7 Wk Days ☐ 5 Wk Days ☐ 3 Wk Days ☐ 2 Wk Days ☐ 24 Hour						
Relinquished by:		Date:		Time:		Received by:		Date:		Time:		EDD Requested		
		2/21/12		1100				11/23/12		1010		☒ Yes ☐ No		
Relinquished by:		Date:		Time:		Received by:		Date:		Time:		Notes		
Relinquished by:		Date:		Time:		Received by (Laboratory):		Date:		Time:		ALS Cooler ID		
Logged by (Laboratory):		Date:		Time:		Checked by (Laboratory):		Date:		Time:		Cooler Temp		
												QC Package: (Check Box Below)		
												☒ Level II: Standard QC ☐ Level III: Raw Data		
												☐ TRRP LRC ☐ TRRP Level IV		
												☐ Level IV: SW846 Methods/CLP like		
												☐ Other:		
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-NaOH/ZnAcetate							Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS							

PM HH

Cooler Receipt and Preservation Form

Client Rubik Environmental Service Request K21 13707
 Received: 11/23/21 Opened: 11/23/21 By: ZH Unloaded: 11/23/21 By: ZH

- Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered
 - Samples were received in: (circle) Cooler Box Envelope Other NA
 - Were custody seals on coolers? NA Y N If yes, how many and where? 1 Front
 If present, were custody seals intact? Y N If present, were they signed and dated? Y N
 - Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
 If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
 - Were samples received within the method specified temperature ranges? NA Y N
 If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N
- If applicable, tissue samples were received: Frozen Partially Thawed Thawed

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
<u>2.0</u>		<u>1201</u>				<u>532556037985</u>	

- Packing material: Inserts Baggies Bubble Wrap Gel Packs Wet Ice Dry Ice Sleeves
- Were custody papers properly filled out (ink, signed, etc.)? NA Y N
- Were samples received in good condition (unbroken) NA Y N
- Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
- Did all sample labels and tags agree with custody papers? NA Y N
- Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
- Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below NA Y N
- Were VOA vials received without headspace? Indicate in the table below NA Y N
- Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____



Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

- # The control limit criteria is not applicable.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjllabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdwlabservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/analyte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

ALS Group USA, Corp.

dba ALS Environmental

Analyst Summary report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS

Service Request: K2113707

Sample Name: MW-4R
Lab Code: K2113707-001
Sample Matrix: Water

Date Collected: 11/21/21**Date Received:** 11/23/21**Analysis Method**

353.2

Extracted/Digested By

ESCHLOSS

Analyzed By

ESCHLOSS

Sample Name: MW-14R
Lab Code: K2113707-002
Sample Matrix: Water

Date Collected: 11/21/21**Date Received:** 11/23/21**Analysis Method**

353.2

Extracted/Digested By

ESCHLOSS

Analyzed By

ESCHLOSS

Sample Name: MW-15R
Lab Code: K2113707-003
Sample Matrix: Water

Date Collected: 11/21/21**Date Received:** 11/23/21**Analysis Method**

353.2

Extracted/Digested By

ESCHLOSS

Analyzed By

ESCHLOSS

Sample Name: MW-19
Lab Code: K2113707-004
Sample Matrix: Water

Date Collected: 11/21/21**Date Received:** 11/23/21**Analysis Method**

353.2

Extracted/Digested By

ESCHLOSS

Analyzed By

ESCHLOSS

Sample Name: MW-20
Lab Code: K2113707-005
Sample Matrix: Water

Date Collected: 11/21/21**Date Received:** 11/23/21**Analysis Method**

353.2

Extracted/Digested By

ESCHLOSS

Analyzed By

ESCHLOSS

ALS Group USA, Corp.
dba ALS Environmental

Analyst Summary report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS

Service Request: K2113707

Sample Name: DUP
Lab Code: K2113707-006
Sample Matrix: Water

Date Collected: 11/21/21
Date Received: 11/23/21

Analysis Method
353.2

Extracted/Digested By
ESCHLOSS

Analyzed By
ESCHLOSS



Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com



General Chemistry

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: MW-4R
Lab Code: K2113707-001

Service Request: K2113707
Date Collected: 11/21/21 16:06
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	28.4	mg/L	2.5	50	11/30/21 11:45	11/30/21	

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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: MW-14R
Lab Code: K2113707-002

Service Request: K2113707
Date Collected: 11/21/21 15:39
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	38.1	mg/L	2.5	50	11/30/21 11:45	11/30/21	

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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: MW-15R
Lab Code: K2113707-003

Service Request: K2113707
Date Collected: 11/21/21 15:12
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	41.5	mg/L	2.5	50	11/30/21 11:45	11/30/21	

ALS Group USA, Corp.
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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: MW-19
Lab Code: K2113707-004

Service Request: K2113707
Date Collected: 11/21/21 17:10
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	45.9	mg/L	2.5	50	11/30/21 11:45	11/30/21	

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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: MW-20
Lab Code: K2113707-005

Service Request: K2113707
Date Collected: 11/21/21 16:41
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	29.0	mg/L	1.3	25	11/30/21 11:45	11/30/21	

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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: DUP
Lab Code: K2113707-006

Service Request: K2113707
Date Collected: 11/21/21
Date Received: 11/23/21 10:10
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	45.7	mg/L	2.5	50	11/30/21 11:45	11/30/21	



QC Summary Forms

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Analytical Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water
Sample Name: Method Blank
Lab Code: K2113707-MB

Service Request: K2113707
Date Collected: NA
Date Received: NA
Basis: NA

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	Dil.	Date Analyzed	Date Extracted	Q
Nitrate+Nitrite as Nitrogen	353.2	ND U	mg/L	0.050	1	11/30/21 11:45	11/30/21	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water

Service Request: K2113707
Date Collected: 11/21/21
Date Received: 11/23/21
Date Analyzed: 11/30/21
Date Extracted: 11/30/21

Duplicate Matrix Spike Summary
Nitrate+Nitrite as Nitrogen

Sample Name: MW-4R
Lab Code: K2113707-001
Analysis Method: 353.2
Prep Method: Method

Units: mg/L
Basis: NA

Analyte Name	Matrix Spike K2113707-001MS				Duplicate Matrix Spike K2113707-001DMS					
	Sample Result	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec	% Rec Limits	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	28.4	76.9	50.0	97	76.7	50.0	97	90-110	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client: Rubik Environmental, Inc
Project Nutrien Pasco/03031-2021-MS
Sample Matrix: Water

Service Request: K2113707
Date Collected: 11/21/21
Date Received: 11/23/21
Date Analyzed: 11/30/21

Replicate Sample Summary
General Chemistry Parameters

Sample Name: MW-4R
Lab Code: K2113707-001

Units: mg/L
Basis: NA

				Duplicate Sample K2113707- 001DUP			
Analyte Name	Analysis Method	MRL	Sample Result	Result	Average	RPD	RPD Limit
Nitrate+Nitrite as Nitrogen	353.2	2.5	28.4	28.1	28.2	1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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dba ALS Environmental

QA/QC Report

Client: Rubik Environmental, Inc
Project: Nutrien Pasco/03031-2021-MS
Sample Matrix: Water

Service Request: K2113707
Date Analyzed: 11/30/21
Date Extracted: 11/30/21

Lab Control Sample Summary
Nitrate+Nitrite as Nitrogen

Analysis Method: 353.2
Prep Method: Method

Units: mg/L
Basis: NA
Analysis Lot: 747670

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2113707-LCS	9.08	9.11	100	90-110