GLORIETA GEOSCIENCE, INC.
P.O. Box 5727 Santa Fe, NM 87502
(505) 983-5446 Fax (505) 983-6482
E-mail: ggi@glorietageo.com
Web Address: www.glorietageo.com

RE: Variance Request Before the New Mexico Water Quality Control Commission

Dear Commissioners,

Glorieta Geoscience, Inc. is submitting this variance petition on behalf of our client, Ironhorse Permian Basin, LLC (IPB). IPB purchased the former Lakeside Dairy in 2014 after the dairy had terminated its dairy operations and removed all cows from the facility. IPB has since redeveloped the property into a railroad terminal facility for the transfer, loading and unloading of products. IPB through a sister company, Ironhorse Water Producers, LLC, also provides commercial water sales to various customers at the property.

On August 28, 2020, IPB was issued a Discharge Permit Renewal for Closure, DP-796 under the Dairy Rules and 20.6.6 NMAC. The DP was issued to protect human health and the groundwater resource by requiring controls on the presence and distribution of water contaminants associated with the former dairy facility operations and to address permanent closure activities and oversight of post-closure monitoring. The closure requirements include the removal of all former dairy operating structures, removal of dairy waste and waste control structures and continued sampling of groundwater quality at the facility.

This variance petition request is to retain part of the wastewater control structure for beneficial use by the current property owners.

Pursuant to the variance petition requirements under 20.6.2.1210.A NMAC, the following information is provided for your consideration.

1. Petitioner Name and Address
   Ironhorse Permian Basin, LLC - Kevin Ramage, CFO
   49 East Atoka Road
   Artesia, NM 88210

2. Petition Date – October 16, 2020

3. Facility or Activity Description
   The property was used for dairy operations between approximately 1991 and 2013 as Cornerstone Dairy and then Lakeside Dairy. Under the discharge permits the dairies were allowed to discharge up to 90,000 gallon per day of wastewater to two different sets of green water lagoons and then land applied to 220 to 385 acres of cropland. The western (original) lagoons were properly closed out in 2013 under the DP requirements and after the second synthetically lined impoundment system was installed. The synthetically lined lagoon system still exists on the property. Lakeside Dairy ceased dairy operations, removed cows, and discontinued green water discharge in August 2013.

IPB bought the property in 2014 and has transformed the property into a railroad terminal for off-loading and reloading primarily oil industry supplies such as oil, frac sands, oil field pipe, and water. The company has constructed 45,000 feet of tracks including two 13,600-foot track loops that occupy the areas of the former dairy corrals and most of the former South Field and southernmost portion of the Torres Field land application areas. A sister company, Ironhorse Water Producers LLC, is permitted by the New Mexico Office of the State Engineer for commercial water sales.

The synthetically-lined impoundments (two settling ponds and one green water lagoon) that are at issue in this variance petition were constructed in 2012. All three impoundments are lined with a synthetic, 40 mil High Density Polyethylene (HDPE) liner. The total capacity of the three impoundments is 52-acre feet.

4. Address of Property
   49 East Atoka Road, Artesia, NM 88210
   Township 18S, Range 26E, Sections 4 and 9 in Eddy County NM
   See attached Site/Groundwater Elevation Map

5. Body of Water Impacted
   The body of water affected by this variance is the shallow groundwater aquifer within the Roswell Basin. The shallow aquifer occurs at a depth of approximately 50 feet below ground surface (bgs) and extends to a depth of approximately 260 feet bgs. The shallow groundwater flow is to the east at a gradient of 0.018 ft/ft. See attached GWE map. Background groundwater chemistry for constituents of concern include: total dissolved solid (TDS) - approximately 1100 mg/L, nitrate - <10.0 mg/L, chloride - <250 mg/L, and sulfate - <2500 mg/L (one-time sampling event). A monitoring well borehole log is attached to provide information on the typical lithology beneath the site. The shallow groundwater aquifer is used for domestic water supply and for crop irrigation and livestock watering.

   There is no surface water course within the property. The nearest surface water is the Pecos River located approximately 3 miles east of the facility.

6. Regulation From Which Variance Is Sought
   The variance is sought from compliance with the "Dairy" Regulations 20.6.6.30A(c), (e), and (f) NMAC.
   Paragraph (c) requires all stormwater and combination wastewater/stormwater impoundments to be emptied of stormwater within one year of cessation of wastewater discharge.
   Paragraph (e) requires complete removal of all manure solids from stormwater and combination wastewater/stormwater impoundments shall be achieved within two years of cessation of wastewater discharge.
   Paragraph (f) requires impoundment liners be perforated or removed and the impoundments shall be re-graded with clean fill to blend with surface topography to

prevent ponding within two years of permanently ceasing wastewater discharge.

The regulations are memorialized in the discharge permit under Discharge Permit 796 Section B101A and Table B1 – the Permittee shall permanently close all impoundments, ponds, and/or settling basins at the former dairy facility as identified in Section A104 above in accordance with 20.6.6 NMAC and the conditions summarized in Table B1.

7. Extent of Variance
   Ironhorse Permian Basin proposes to forego the emptying and closure of the two settlement impoundments and the green water lagoon and retain them for beneficial use. The impoundment/lagoon system would serve two purposes:
   1. The primary purpose for the lagoon would be for storage of groundwater pumped from facility wells to be used for commercial water sales.
   2. A secondary use is for continued use to provide stormwater control and retention at the facility. IPB has purposely designed, engineered and developed the rail terminal and track layout and site drainage to utilize the existing impoundments for stormwater collection. The developed property consists of tack beds, roads and loadout areas that are less permeable to stormwater infiltration than under the former dairy operation. Without the existing impoundments, stormwater runoff would damage multiple tracks, switching facilities and potentially flood neighboring farmer's fields. (Attached aerial photos).

8. Why Compliance to Regulation Imposes Unreasonable Burden
   The impoundment system was constructed at a cost of $458,000 and was used for less than two years before the dairy ceased operation. Additional costs were expended during construction of the rail terminal to incorporate the new stormwater control network with the existing impoundments. There would be significant cost to remove the little used system that is in good condition and can be put to beneficial use by the current land owner. The lagoon will only store clean water, and as such, no contamination will result from the continued use of the lagoons.

9. Abatement of Pollution
   IPB is currently drafting a closure plan to meet the requirements set out in the closure permit for the removal of waste, closure of the dairy structures. and implementation of a groundwater monitoring program.

   As it relates to the green water/stormwater impoundment, slightly elevated nitrate concentrations were observed in monitoring well, MW-6A, located immediately downgradient from the green water lagoon. However, the elevated nitrate is likely associated with the former land application area (former South Field) located west (upgradient) of the green water lagoon that was present prior to construction of the lagoon and not from the lagoon itself. It is anticipated that the nitrate concentration at this location will meet the WQCC standard since the source activities were discontinued in 2013. See attached graph.

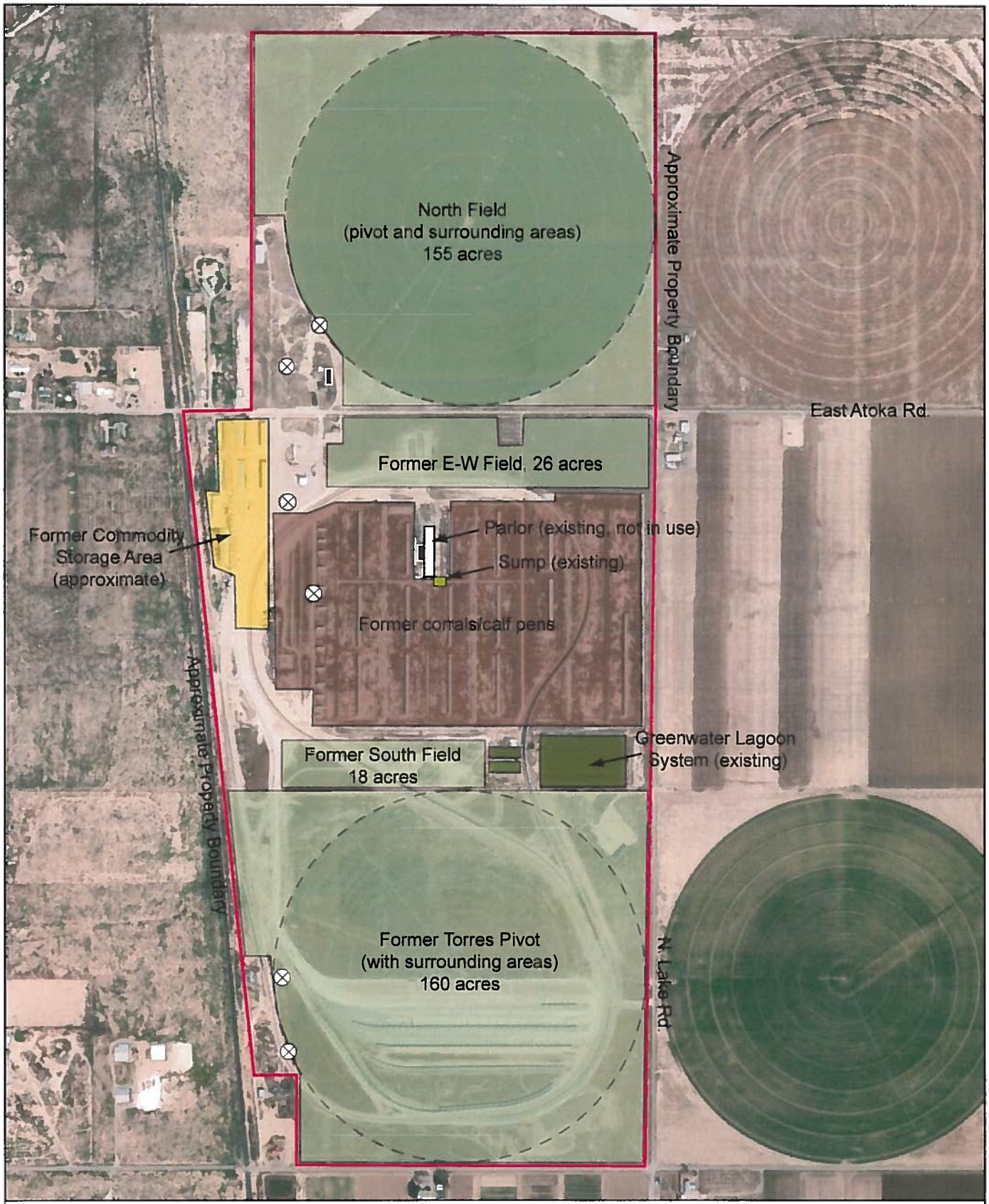
   As part of the closure permit requirements, a groundwater monitoring well will be

installed immediately downgradient of the former green water lagoon to monitor groundwater conditions. As prescribed in the permit the well will be sampled on a quarterly basis until termination of the discharge permit 796.

10. Period of Time
    Until Closure Discharge Permit 796 is terminated.

Attachments

Site Maps
Groundwater Elevation Map
Monitoring Well Log
Aerial Photos of Rail Terminal Facility and Drainage
Groundwater Nitrate Trend Graph MW-6/6A



Ironhorse Permian Basin, LLC(Formerly Lakeside Dairy) Site Map

Google Earth Aerial Imagery, March 12, 2016

0 500 1,000 2,000 Feet

⊗ Supply well

■ Septic System

Glorieta Geoscience, Inc.

N

Ironhorse Permian Basin, LLC, DP-796

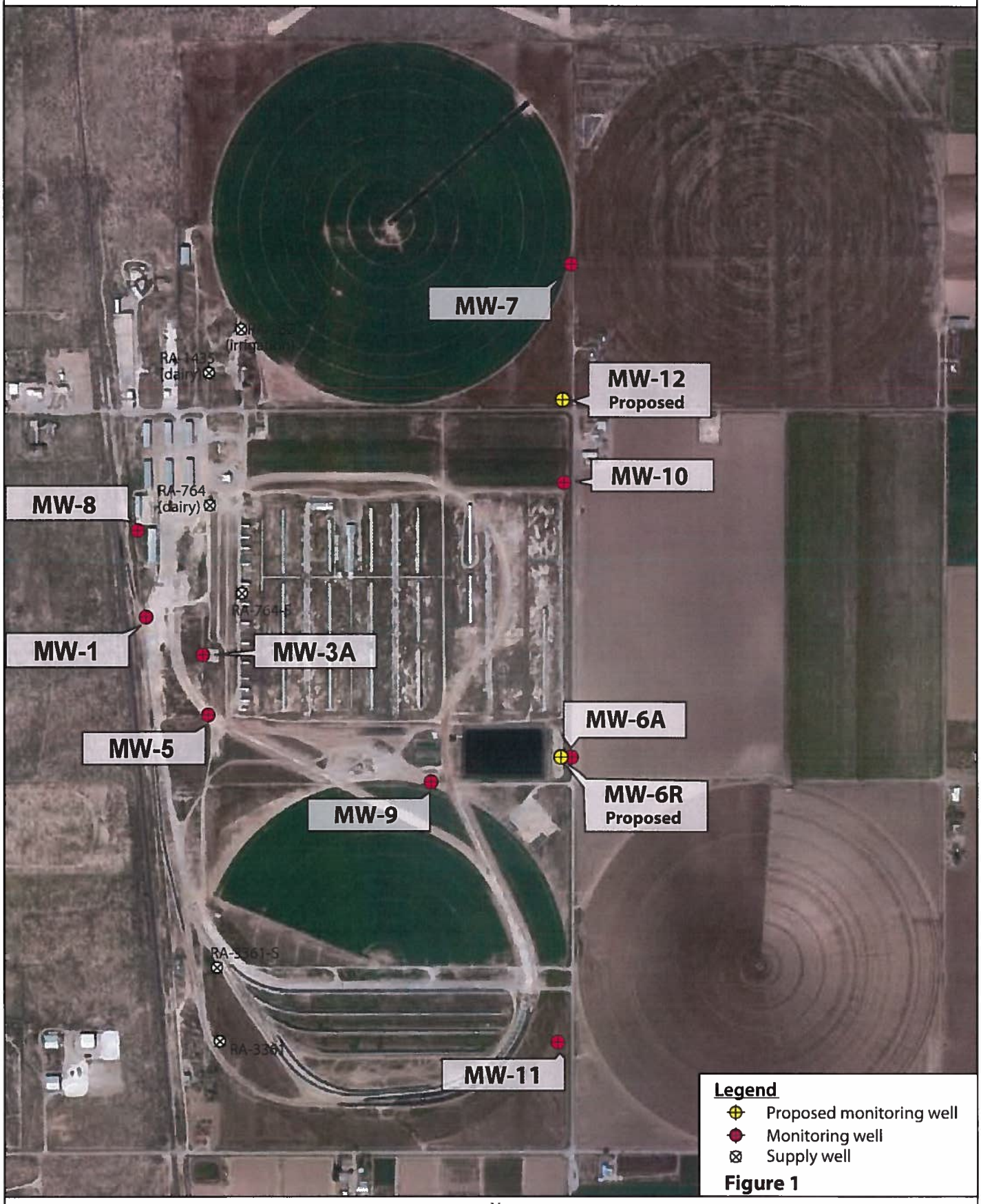


Figure 1

0 0.25 0.5 Miles

N

T18S, R26E, Sec 4&9
Eddy County

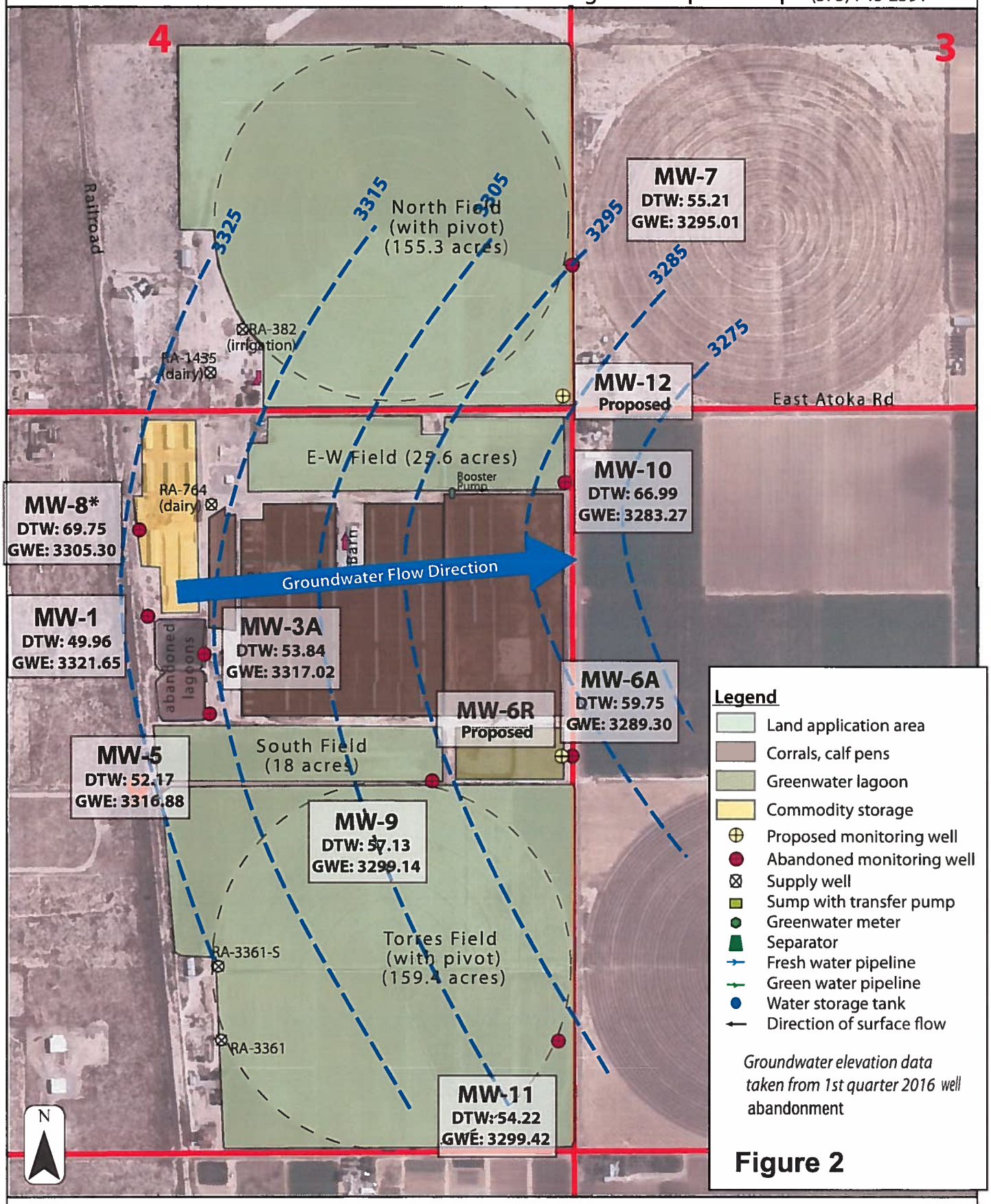
GLORIETA GEOSCIENCE, INC.

T18S, R26E, Sec 4, and 9
Eddy County

LAKESIDE DAIRY, DP-796

Groundwater Elevation and Monitoring Well Proposal Map

49 East Atoka Rd.
Artesia, NM 88210
(575) 748-2591



Legend

- Land application area
- Corrals, calf pens
- Greenwater lagoon
- Commodity storage
- Proposed monitoring well
- Abandoned monitoring well
- Supply well
- Sump with transfer pump
- Greenwater meter
- Separator
- Fresh water pipeline
- Green water pipeline
- Water storage tank
- Direction of surface flow

Groundwater elevation data taken from 1st quarter 2016 well abandonment

Figure 2

*MW-8 groundwater elevation was not used as it is not indicative of the shallow water level at the facility.

0 0.25 0.5 Miles

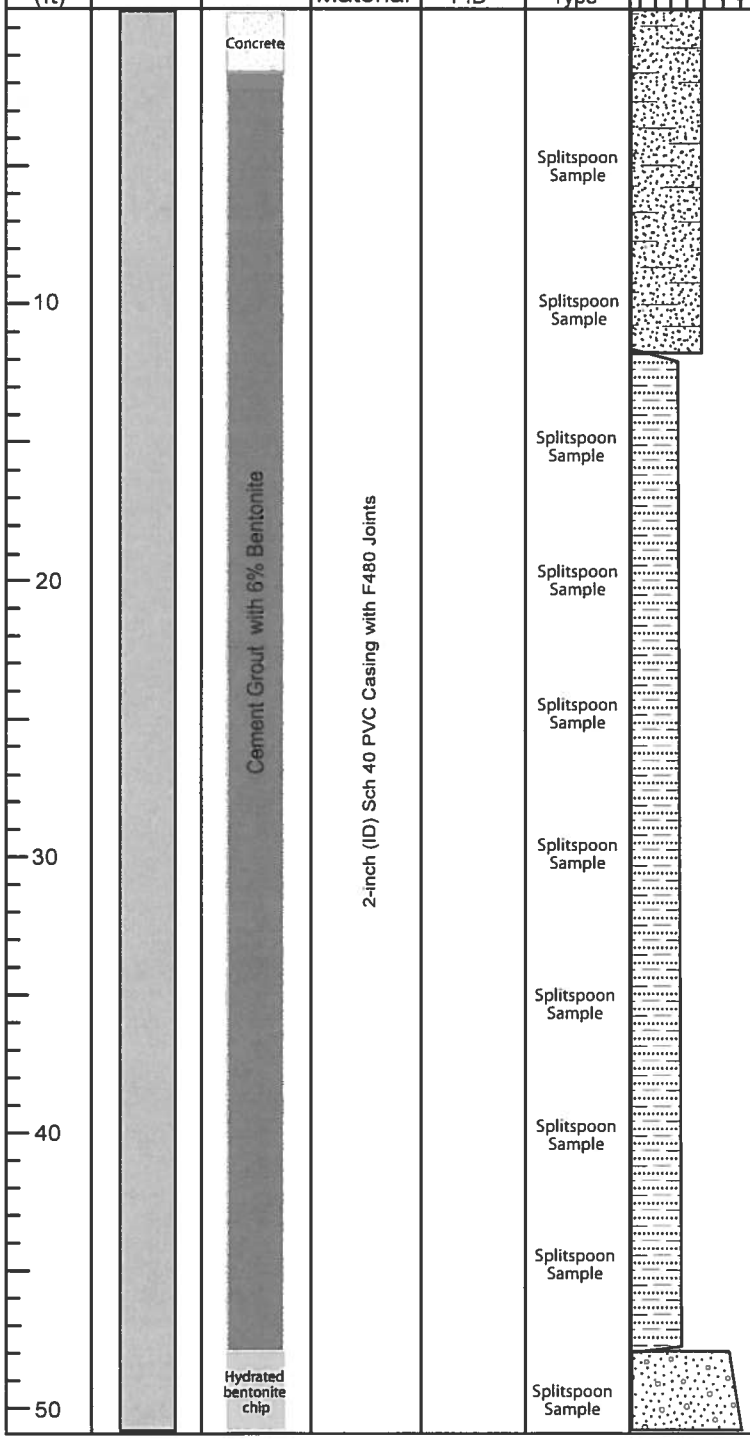
GLORIETA GEOSCIENCE, INC

LITHOLOGIC LOG

GLORIETA GEOSCIENCE, INC.

Project: Lakeside Dairy
Location: South of Artesia, NM;
East of New Lagoon System
Client: Lakeside Dairy
Drilling Company: Geomechanics Southwest, Inc.
Drilling Method: Hollow Stem Auger
Drilling Observation: C. E. Smith, GGI

Boring/Well Name: MW-6A
Date: April 11, 2012
Total Drilling Depth: 75 feet BGS
Total Depth of Casing: 74.1 feet BGS
Top of Casing Elevation: 3349.05 feet AMSL
Depth to Ground Water: 60.66 BGS
Surface Completion: Cement pad with steel shroud



Lithology: c - clay
s - silt
vf/f/m/c - very fine/fine/medium/coarse-grained sand
g - gravel

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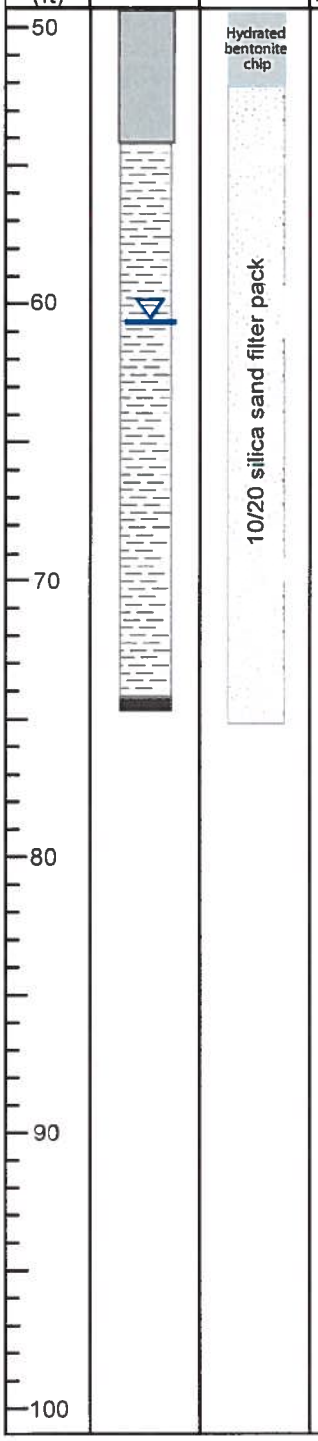
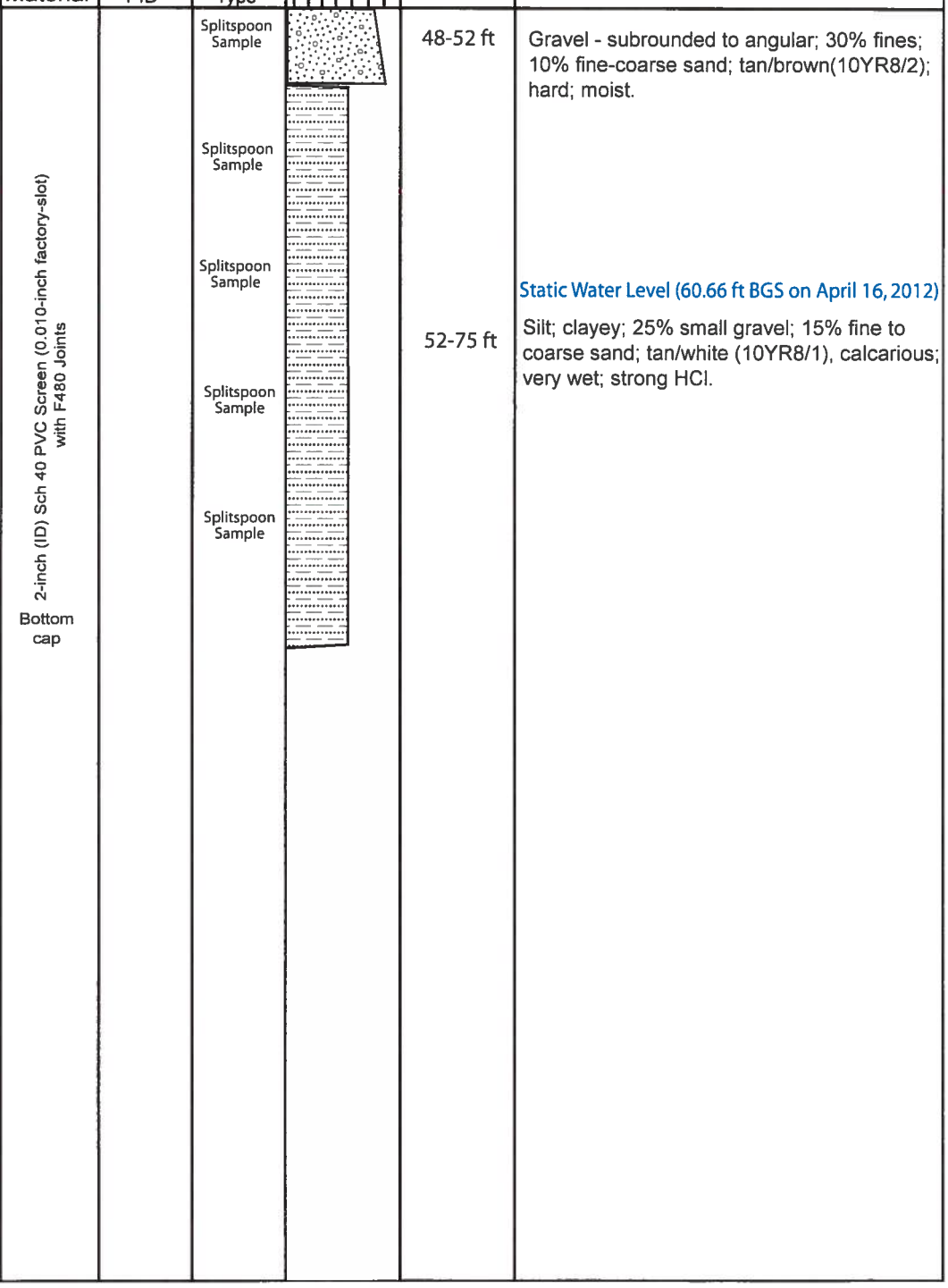


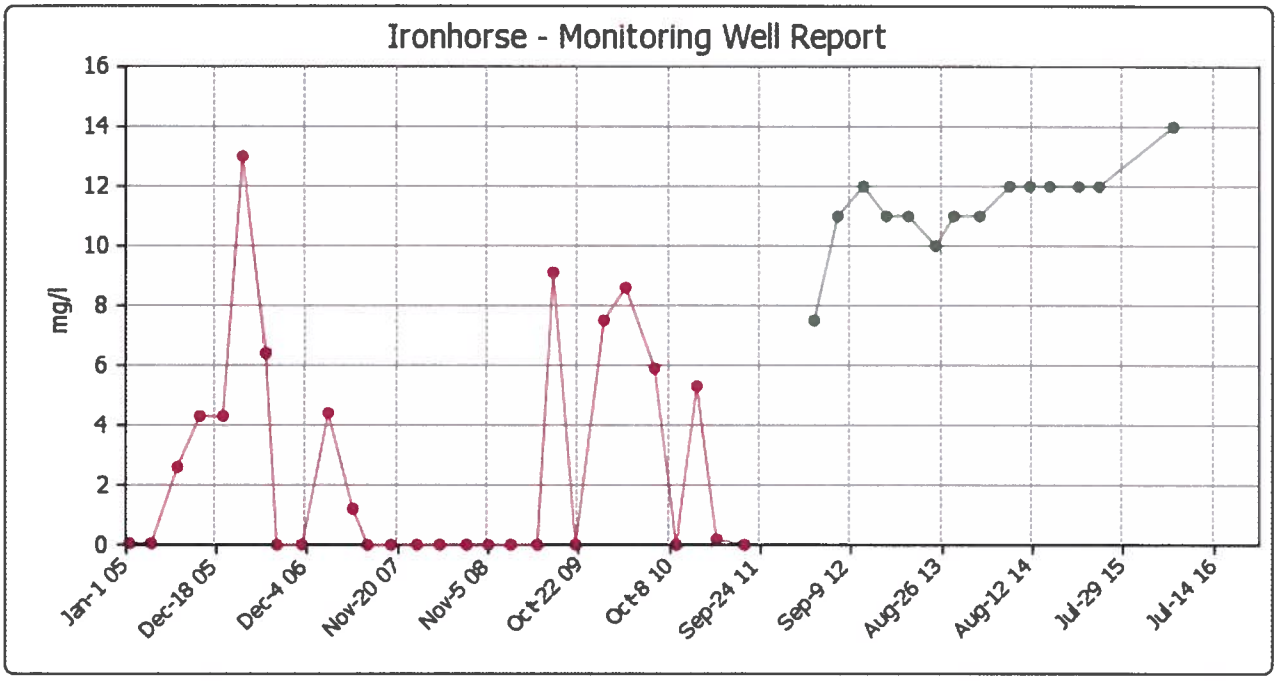


Depth	Comments
48-52 ft	Gravel - subrounded to angular; 30% fines; 10% fine-coarse sand; tan/brown(10YR8/2); hard; moist.
	Static Water Level (60.66 ft BGS on April 16, 2012)
52-75 ft	Silt; clayey; 25% small gravel; 15% fine to coarse sand; tan/white (10YR8/1), calcarious; very wet; strong HCl.

Lithology: c - clay
s - silt
vf/f/m/c - very fine/fine/medium/coarse-grained sand
g - gravel


New stromwater control ditches
Existing Greenwater/Stormwater Impoundments


New stromwater control
drainage features


Ironhorse - Monitoring Well Report
mg/l
16
14
12
10
8
6
4
2
0
Jan-1 05
Dec-18 05
Dec-4 06
Nov-20 07
Nov-5 08
Oct-22 09
Oct-8 10
Sep-24 11
Sep-9 12
Aug-26 13
Aug-12 14
Jul-29 15
Jul-14 16
MW-6 NO3-N (mg/l)
MW-6A NO3-N (mg/l)