



Humphrey Queen Battery

MONITOR WELL REPORT

API No. 30-025-11424

Release Date: N/A

Unit Letter G, Section 3, Township 25 South, Range 37 East

April 14, 2016

Prepared by:

Michael Burton, Environmental Operations Director
Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
Phone: (575)964-8394
Fax: (575)393-8396

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Humphrey Queen Battery

1 INTRODUCTION

Linn Energy (Linn) has retained Diversified Field Service, Inc. (DFSI) to address environmental issues for the site detailed herein.

The site is located east of Jal, NM, in Lea County. The area in question is a historical cement pad located on the pad near the battery. An initial C-141 was submitted to NMOCD on August 26, 2016 and approved on October 13, 2015 (Appendix I).

2 SITE ACTIVITIES

On August 28, 2015, DFSI personnel responded to the location to attain measurements of the cement pit and take preliminary photos.

On September 1, 2015, a third-party company, C&M Roustabout, responded to the location to begin work. The pits were cleaned of all debris, and the sides of the pit were pushed in. Fresh caliche was brought in to backfill, and the site was restored. No surface restoration work was warranted as this site is encompassed within an operating battery and lease road, constantly impacted by oilfield traffic. Moreover, the vegetation adjacent to the site is near normal capacity (Appendix II).

The most recent groundwater samples, taken March 10, 2016 and March 18, 2016, resulted in elevated chloride concentrations (Appendix III). MW-4, furthest north, resulted in a chloride concentration of 870 mg/L. MW-5, furthest east, resulted in a chloride concentration of 1,000 mg/L. MW-1, the furthest south, resulted in a chloride concentration of 27,500 mg/L. MW-2, furthest west, resulted in a chloride concentration of 14,440 mg/L. MW-3, MW-6 and MW-7 resulted in chloride concentrations of 510, 860 and 11,400 mg/L, respectively (Appendix IV).

3 CONCLUSION

Monitor well installation data determines that the average depth to groundwater beneath the site is 45 ft. bgs. Given that this site is within a known, historically chloride impacted area, these data indicate that this site is not contributing significant chloride to groundwater. Any remaining constituents will be addressed during site abandonment.

Appendix I

INITIAL C-141

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company	Linn Operating Inc.	Contact	E.L. Gonzales
Address	2130 W Bender Blvd Hobbs, NM 88240	Telephone No.	575-738-1739
Facility Name	Humphrey Queen Battery (HQU #10)	Facility Type	Battery
Surface Owner	Private	Mineral Owner	
		API No. 30-025-11424 Closest well	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	03	25S	37E	1650	North	1650	East	Lea

Latitude 32.1620255 Longitude -103.1475677

NATURE OF RELEASE

Type of Release	NA	Volume of Release	Volume Recovered
Source of Release		Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?		Date and Hour	
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

RECEIVED

By JKeyes at 12:26 pm, Oct 13, 2015

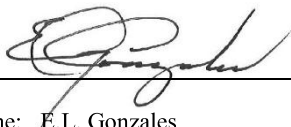

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Linn has identified a historic structure at this location. Decommissioning to prevent misuse and hazards to general public. Further remediation efforts are will be addressed at site abandonment.

Describe Area Affected and Cleanup Action Taken.*

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION		
Printed Name: E.L. Gonzales	Approved by Environmental Specialist: 		
Title: Production Supervisor	Approval Date: 10/13/2015	Expiration Date: 12/13/2015	
E-mail Address: elgonzales@linenergy.com	Conditions of Approval: Discrete site samples required. Delineate and remediate per NMOCD guidelines. Geotagged photos required.		Attached <input type="checkbox"/> IRP 3914
Date: 08/26/2015	Phone: 505-504-8002		

* Attach Additional Sheets If Necessary

pJXK1528644705

nJXK1528644642

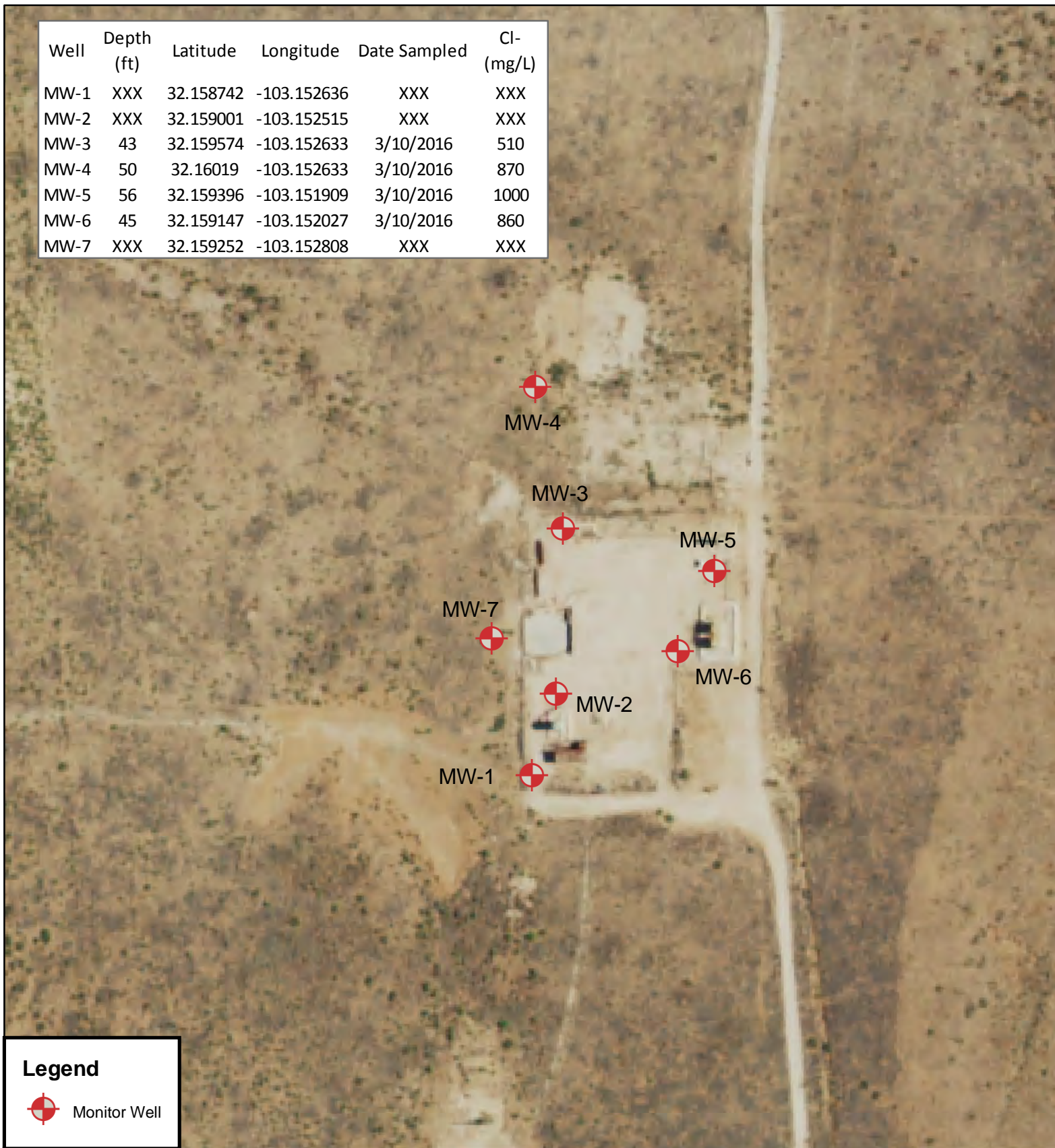
Appendix II

SITE MAP

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394

Monitor Wells

Well	Depth (ft)	Latitude	Longitude	Date Sampled	Cl- (mg/L)
MW-1	XXX	32.158742	-103.152636	XXX	XXX
MW-2	XXX	32.159001	-103.152515	XXX	XXX
MW-3	43	32.159574	-103.152633	3/10/2016	510
MW-4	50	32.16019	-103.152633	3/10/2016	870
MW-5	56	32.159396	-103.151909	3/10/2016	1000
MW-6	45	32.159147	-103.152027	3/10/2016	860
MW-7	XXX	32.159252	-103.152808	XXX	XXX



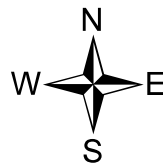
Legend



Monitor Well



Linn
Humphrey Queen Unit
Unit Letter G, Sec. 3, T25S, R37E
Lea County, NM
API #: 30-025-11424
NMOCD Case #: 1R-3914



Drafted by: L. Flores

0 37.5 75 150 225 300
 Feet

Appendix III

LABORATORY ANALYSIS

Diversified Field Service, Inc.
206 W. Snyder
Hobbs, NM 88240
(575) 964-8394



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

March 15, 2016

BOB AKIN

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: LANGLEIE MATTIX QUEEN UNIT

Enclosed are the results of analyses for samples received by the laboratory on 03/10/16 15:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 BOB AKIN
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	03/10/2016	Sampling Date:	03/10/2016
Reported:	03/15/2016	Sampling Type:	Water
Project Name:	LANGLIE MATTIX QUEEN UNIT	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: MONITOR WELL 1 @ 54' (H600530-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1880	4.00	03/11/2016	ND	100	100	100	7.69	

Sample ID: MONITOR WELL 2 @ 59' (H600530-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1580	4.00	03/11/2016	ND	100	100	100	7.69	

Sample ID: MONITOR WELL 3 @ 60' (H600530-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	880	4.00	03/11/2016	ND	100	100	100	7.69	

Sample ID: MONITOR WELL 4 @ 51' (H600530-04)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	1680	4.00	03/11/2016	ND	100	100	100	7.69	

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

Analytical Results For:LINN OPERATING-HOBBS
BOB AKIN
2130 W. BENDER
HOBBS NM, 88240
Fax To: (575) 738-1740

Received:	03/10/2016	Sampling Date:	03/10/2016
Reported:	03/15/2016	Sampling Type:	Water
Project Name:	LANGLIE MATTIX QUEEN UNIT	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: MONITOR WELL 8 @ 55' (H600530-05)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride*	660	4.00	03/11/2016	ND	100	100	100	7.69		

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Celey D. Keene, Lab Director/Quality Manager

Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



Page 5 of 5

(575) 393-2326 FAX (575) 393-2476

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

March 24, 2016

BOB AKIN

LINN OPERATING-HOBBS

2130 W. BENDER

HOBBS, NM 88240

RE: HUMPHREY QUEEN UNIT

Enclosed are the results of analyses for samples received by the laboratory on 03/21/16 15:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-15-7. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (*). For a complete list of accredited analytes and matrices visit the TCEQ website at www.tceq.texas.gov/field/qa/lab_accred_certif.html.

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Celey D. Keene

Lab Director/Quality Manager

Analytical Results For:

 LINN OPERATING-HOBBS
 BOB AKIN
 2130 W. BENDER
 HOBBS NM, 88240
 Fax To: (575) 738-1740

Received:	03/21/2016	Sampling Date:	03/18/2016
Reported:	03/24/2016	Sampling Type:	Water
Project Name:	HUMPHREY QUEEN UNIT	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Jodi Henson
Project Location:	NOT GIVEN		

Sample ID: MONITOR WELL #2 (H600608-01)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	14400	4.00	03/22/2016	ND	104	104	100	3.92	

Sample ID: MONITOR WELL #1 (H600608-02)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	27500	4.00	03/22/2016	ND	104	104	100	3.92	

Sample ID: MONITOR WELL #7 (H600608-03)

Chloride, SM4500Cl-B		mg/L		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride*	11400	4.00	03/22/2016	ND	104	104	100	3.92	

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Celey D. Keene, Lab Director/Quality Manager

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***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240
(575) 393-2326 FAX (575) 393-2476

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Cardinal</u>		P.O. #:		BILL TO												ANALYSIS REQUEST																									
Project Manager: <u>LPN</u>		Company:																																							
Address:		Attn:																																							
City:		Address:																																							
State:		City:																																							
Zip:		State:																																							
Phone #:		Phone #:																																							
Fax #:		Fax #:																																							
Project #:		Project Owner:																																							
Project Name: <u>LPN</u>		State:																																							
Project Location: <u>Humphrey Queen Unit</u>		Zip:																																							
Sample Name: <u>Chet's House</u>		Phone #:																																							
Fax #:																																									
FOR LAB USE ONLY																																									
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME													
<u>H000008</u>		<u>Monitor well #2</u>		<u>G</u>		<u>1</u>		<u>✓</u>														<u>✓</u>				<u>7/18/2016 10:00 AM</u>		<u>X</u>													
<u>2</u>		<u>Monitor well #1</u>		<u>G</u>		<u>1</u>		<u>✓</u>														<u>✓</u>				<u>7/21/2016 11:00 AM</u>		<u>X</u>													
<u>3</u>		<u>Monitor well #7</u>		<u>G</u>		<u>1</u>		<u>✓</u>														<u>✓</u>				<u>3/21/2016 9:00 AM</u>		<u>X</u>													