JLA Geosciences, Inc.
HYDROGEOLOGIC CONSULTANTS

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May 22, 2017 **via Electronic Mail**

Mr. William Flippin
Florida Power & Light (FPL) Company
700 Universe Blvd
Juno Beach, Florida 33408

RE: FPL Okeechobee Clean Energy Center, Aquifer Performance Testing Report

Dear Mr. Flippin:

JLA Geosciences, Inc. (JLA), is pleased to provide this letter report summarizing the methods and findings of the Aquifer Performance Test (APT) performed at the above referenced project site. The overall project includes construction and operation of a new combined cycle natural gas fired generating unit, providing approximately 1,600 megawatts nominal of electric generation. The electric generating unit is located on a 2,341-acre site in Okeechobee County, Florida. JLA Geosciences, Inc. was tasked to provide construction management, oversight and reporting services for a component of the project that includes the construction, testing and operation of wells completed in the Upper Floridan Aquifer (UFA) and completed in the Avon Park Producing Zone (APPZ). The wells will be used to provide makeup water for the cooling towers. JLA also was tasked with implementing an APT utilizing the newly constructed wells. A site location map specific to the APT is included as **Figure 1**.

Condition of Certification Requirements

This report serves to satisfy the requirements of the Conditions of Certification (COC), PA 15-058, Section B, Part IV.Z., issued by Florida Department of Environmental Protection (FDEP) to Florida Power and Light (FPL) on June 29, 2016. Part IV.Z specifically states the following (italic font):

Z. No later than 90 days after the APT is complete, Licensee shall provide an APT final report ("APT Report") documenting well construction, APT procedures, data analysis, and APT results to the FDEP SCO and SJRWMD for review and approval in accordance with Condition XX, "Procedures for Post-Certification Submittals". The APT Report shall be signed and sealed by a Florida Registered Professional Geologist or Professional Engineer.

Prior to implementation of the APT, and in accordance with Section B, Part IV.Y. of the COC, FPL submitted, and secured approval for, the APT plan dated November 16, 2016. The approved plan is included as **Attachment 1**. Subsequent to receiving written approval, FPL requested and received approval from St. Johns River Water Management District (SJRWMD) to modify the APT plan to include an additional observation well (Well FA-3 installed into the UFA).

Testing and Data Collection Summary

As described in the APT plan, the test included the sustained pumping of Well FA-1 (pumped well) while observing changes in water levels in Well FA-1 and the designated observation wells, FA-2 (both UFA and APPZ zones), FA-3 and MW-1. A primary objective of the APT is to estimate transmissivity, leakance, and storage coefficient of the UFA in the vicinity of the FPL OCEC site. Construction details of the pumped well and observation wells are included in **Attachment 2**. For purposes of showing the geologic and hydrogeologic conditions at each well location, geophysical log plots are also included in **Attachment 2**. A summary of the open-hole intervals and distances from Well FA-1 is shown below.

Well	Open Hole Interval (feet bls)	Distance from Pumped Well (feet)
FA-1	372 - 800 (UFA)	
FA-2	471 - 808 (UFA)	1886
	863 - 910 (APPZ)	
FA-3	358 - 603 (UFA)	1620
MW-1	367 - 804 (UFA)	2620

The construction and testing of the wells noted above were completed by February 21, 2017. By April 2, 2017 the activities listed below were completed in preparation of the APT.

- Wellheads for the observation wells were installed and surveyed to North American Vertical Datum (NAVD) of 1988.
- The observation wells were purged to ensure remnants of salt "kill" (from installation of wellheads) were removed and conductivity values were near the concentrations observed at the time the associated step-rate pumping testing was performed.
- Discharge piping was routed from FA-1 to the discharge location as shown on **Figure 1.**
- A calibrated flowmeter was installed in-line with the discharge piping at FA-1 and calibrated pressure transducers (and backup transducers) were installed in the pumped and observation wells.
- Preliminary pump testing was performed at FA-1 to ensure that the desired pump rates could be achieved (and sustained), to ensure no leaks were present, to identify appropriate valve and pump settings and to ensure remnants of salt "kill" was removed. The duration of the preliminary test was approximately 24 hours.
- Transducers commenced collection of background water level measurements.

- Efforts were made to maintain a stable pumping rate in the existing Ag Well ("Ag" well identified in **Figure 1**) located approximately 520 feet southwest of Well FA-3. These efforts continued throughout the background, pumping and recovery periods of the APT. Prior investigations showed that the Ag Well is completed with an open-hole production interval within the UFA between 214 and 821 feet below land surface (bls). The well currently serves as a water source for OCEC site preparation activities.

Following preliminary testing and prior to starting the pumping portion of the APT, the background water levels were monitored with pressure transducers for approximately 42 hours. On April 4, 2017, the pumping portion of the APT began at 12:00 p.m. During the APT, a volume of 12,841,975 gallons of water was pumped from Well FA-1 at an overall average pumping rate of 2,966 gpm (4.3 mgd) for 72 hours, 10 minutes. Throughout the test, water levels and flow rates were collected at intervals consistent with the intervals stated in the APT plan (**Attachment 1**). A composite hydrograph of water levels recorded during the APT is presented as **Figure 2**.

Within the first hour of pumping, water levels in Well FA-1 were approaching stabilization with a drawdown of approximately 53 feet. Water levels in FA-1 generally remained stable for the remainder of the test with an additional 1.8 feet of drawdown by the end of the pumping portion. Plots showing the pumping rate and water levels in Well FA-1 are provided in **Figure 3**.

Field water quality also was regularly monitored and recorded. A summary of performance and field water quality data in Well FA-1 is presented as **Table 1**. A water quality sample was collected within 3 hours from termination of pumping for laboratory analysis. A summary of the laboratory results is included in **Table 2,** and the complete laboratory report is enclosed.

As shown in **Figure 2**, oscillating water level trends are observed in wells FA-2 (both zones) and MW-1 throughout the background, pumping and recovery portions of the APT. Also noted in **Figure 2** is a major rain event that occurred after approximately 4 hours of pumping. The rain event coincides with an upward spike of water levels observed in Well FA-1 and the observation wells. It is reasonable to assume that these spikes were caused by an abrupt decrease in barometric pressure during the storm event.

The greatest impact in water levels of the observation wells occurred in Well FA-3. A maximum drawdown in Well FA-3 of 1.9 feet occurred after approximately 20 hours of pumping. Throughout the test, slight variations in water levels are observed in Well FA-3. The primary cause of these variations is minor fluctuations in the pumping rate of the Ag Well (located south of Well FA-3). Plots of the FA-1 and Ag Well pump rates and the water levels of FA-1 and FA-3 are provided in **Figure 4**.

After approximately 72 hours of pumping, the pump was turned off, the valve at Well FA-1 was closed and the recovery portion of the test commenced. Water level monitoring in Well FA-1 and the observation wells continued for an additional 24 hours during the recovery period. Pertinent field data collected during the APT test are provided in **Attachment 3**. Electronic (Excel) files of the water level transducer data are enclosed.

Determination of Aquifer Properties

Calculation of aquifer properties involved curve-fitting methodologies typically applied for a leaky confined aquifer, consistent with UFA hydrogeologic conditions at the site. This included application of analytical equations according to the Hantush-Jacob (1955) approach for leaky confined aquifers which provided the best match to the APT data. It was determined that confined aquifer solutions of Theis (1935) and Cooper Jacob (1946) were not appropriate because site hydrogeologic conditions clearly indicate a leaky confining layer. Attempts were made to evaluate the drawdown data using the Hantush (1960) and Moench (1985) solutions for leaky confining layers; however, results did not provide suitable matches to applicable type curves as was found for the Hantush-Jacob approach as described below.

The AquiferWin32 computer program assisted with evaluation of the APT data using the Hantush-Jacob approach. Aquifer properties estimated by the approach include the following:

Transmissivity (T) – The measure of the rate at which water may be transmitted through a unit width of the saturated thickness of the aquifer under a unit hydraulic gradient;

Storativity or storage coefficient (S) — The volume of water that can be withdrawn or injected into an aquifer per unit surface area per unit change in head; and

Leakance — A quantitative estimate of water that passes through semi-confining beds that bracket the production zone. For the UFA production zone evaluated during the APT, it is assumed that only flow from underlying less permeable limestone/dolomite strata below the well completion intervals contribute to the leakance estimates. The movement of water across these less permeable beds is typically referred to as leakage, which is accounted for by the leakance aquifer parameter.

The Hantush-Jacob approach calculates transmissivity according to the following equation:

$$T = \frac{Q * 4\pi * W(u, r/B)}{s}$$

Where: T = transmissivity [volume (V) / time (T) / length (L)]

Q = discharge rate (V/T)

W(u, r/B) = well function

s = drawdown (L)

$u = r^2S/4Tt$ (dimensionless)

r = radial distance between pumping well and monitoring well (L)

S = storativity (dimensionless)

t = time (T)

$B = (T*b'/K')^{0.5}$ (L)

b' = thickness of underlying confining layer (L)

K' = vertical hydraulic conductivity of confining layer (L/T)

Based on the above, storativity equates to:

$$S = \frac{4 * T * t * u}{r^2}$$

Leakance is derived from the B parameter as described above, and equates to:

$K'/b' = \text{leakance } (T^{-1})$

Aquifer Properties Results

Figures 5 through 7 present graphical results for the evaluation of drawdown data from the APT using the Hantush-Jacob method. Results provide estimated aquifer properties based on analyses for drawdown observed in FA-3, MW-1 and the UFA open-hole interval at FA-2. This includes estimates of transmissivity and storativity at the corresponding r/B parameter, from which (B) values for leakance can be derived. Each Figure depicts a comparison of the observed drawdown data with corresponding plots of predicted drawdown, based on type-curve matches for each observation well.

Figures 5 through 7 also include corresponding values of horizontal hydraulic conductivity of the UFA production zone (K) and vertical hydraulic conductivity of the underlying leaky confining layer (K'). These K and K' values originate from the T and leakance estimates for each well, based on assumed values for the respective thicknesses of the UFA production zone (b) and leaky confining layer (b'). Production zone thicknesses (b) reflect the open-hole intervals within the UFA at each well, whereas confining layer thicknesses (b') result from evaluation of the lithologic log for FA-2, which describes materials occurring to more than 1,200 feet bls, and thus into and beyond the APPZ production zone.

Based on lithologies described at FA-2, the leaky confining layer separating the UFA and APPZ production zones is on the order of 70 feet, which represents the assumed thickness applicable to FA-2 and MW-1 used to calculate K' at these wells. At well FA-3, the open-hole interval extends only about 250 feet to approximately 600 feet bls, compared to open-hole intervals extending to about 800 feet bls at FA-2 and MW-1. Consequently, the assumed confining layer thickness used to estimate K' from the corresponding leakance value is 262 feet, compared to the 70 feet thickness applied for FA-2 and MW-1.

The following table summarizes the aquifer property estimates derived from the analysis of the APT data:

Well	UFA Production Zone			Leaky Confining Layer		
	Transmissivity (T)	Thickness (b)	Hydraulic Conductivity (K)	Leakance	Thickness (b')	Hydraulic Conductivity (K')
	ft^2/d	ft	ft/d	d^{-1}	ft	ft/d
FA-3	96,500	245	394	0.0008	262	0.2
MW-1	170,900	437	391	0.0257	70	1.8
FA-2	129,800	337	385	0.129	70	9
Average	132,400	340	390	0.052	134	3.7
Prior Model Values	84,400	389.2	217	0.034	149.7	5.1

Included in the table are aquifer coefficients and layer thicknesses for the OCEC site from the SJRWMD East Central Florida Steady-State (ECFS) model. As part of the OCEC Site Certification Application, Tetra Tech prepared a Groundwater Modeling Report (November 2015) that applied the ECFS model in the impact assessment. The prior model values correspond to those applicable to the site. Such information provides for comparison of values estimated from the APT results, with those applied for the numeric model.

Please feel free to contact us if you have any questions or wish to discuss further.

Sincerely,

JLA Geosciences, Inc.

James L. Andersen, P.G.
Principal Hydrogeologist

JLA Geosciences, Inc.

Rodney J. Miller, P.G.
Senior Hydrogeologist

Figures:

1) APT Site Location Map
2) Water Level Elevation Plots of Pumped and Observation Wells
3) Well FA-1 Rates and Water Level Elevations
4) Well FA-1 and Ag Well Rates and FA-1 and FA-3 Water Level Elevations
5) Well FA-3 Drawdown Evaluation (Hantush Jacob 1955)
6) Well MW1 Drawdown Evaluation (Hantush Jacob 1955)
7) Well FA-2 Drawdown Evaluation (Hantush Jacob 1955)

Tables:

1) Summary of Well FA-1 Performance and Water Quality
2) Summary of Well FA-1 Water Quality Analytical Results

Attachments:

1) APT Plan
2) Well Construction Details and Geophysical Log Plots
3) APT Field Data

Enclosures:

1) Well FA-1 Water Quality Sample Laboratory Report
2) Electronic (Excel) Water Level Transducer Data

Figures:

1) APT Site Location Map
2) Water Level Elevation Plots of Pumped and Observation Wells
3) Well FA-1 Rates and Water Level Elevations
4) Well FA-1 and Ag Well Rates and FA-1 and FA-3 Water Level Elevations
5) Well FA-3 Drawdown Evaluation (Hantush Jacob 1955)
6) Well MW1 Drawdown Evaluation (Hantush Jacob 1955)
7) Well FA-2 Drawdown Evaluation (Hantush Jacob 1955)

WELL ID	NORTHING	EASTING	LATTITUDE	LONGITUDE
MW-1	1202821.11	723518.10	27.6425806°	-080.7919639°
FA-1	1200373.51	722487.70	27.6358526°	-080.7951591°
FA-2	1200491.91	724356.17	27.6361697°	-080.7893875°
FA-3	1198803.22	722487.90	27.6315332°	-080.7951666°
FA-4	1198848.83	724354.61	27.6316501°	-080.7894288°

FIGURE TITLE:

FLORIDA POWER AND LIGHT
OKEECHOBEE CLEAN ENERGY CENTER
WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1
APT SITE LOCATION MAP

JLA Geosciences, Inc.

DATE: 05/04/2017	FIGURE NO: 1
DRAWN BY: CFS	
PROJECT NO: 16-031	

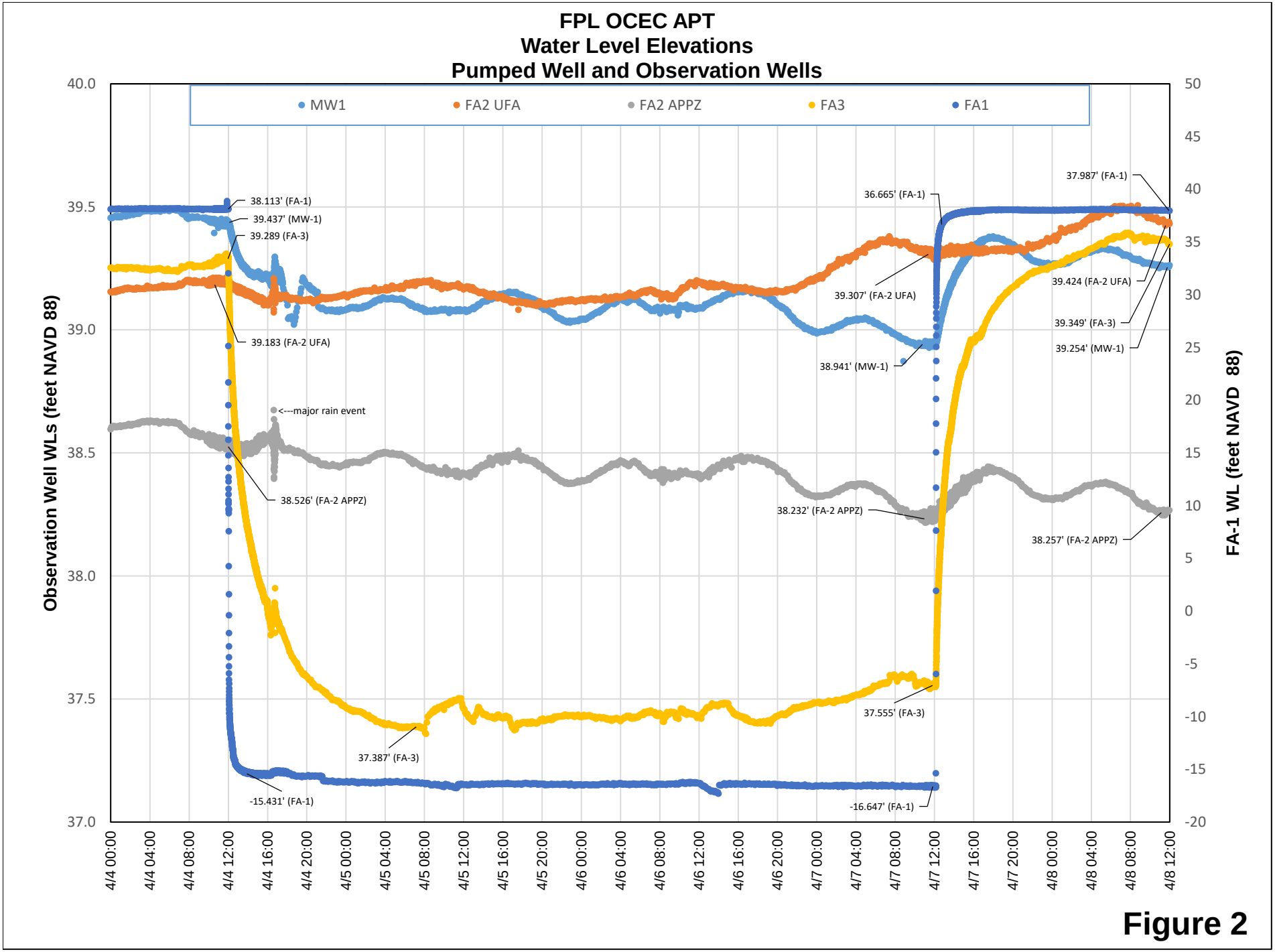
FPL OCEC APT
Water Level Elevations
Pumped Well and Observation Wells
MW1
FA2 UFA
FA2 APPZ
FA3
FA1
Observation Well WLs (feet NAVD 88)
FA-1 WL (feet NAVD 88)
40.0
39.5
39.0
38.5
38.0
37.5
37.0
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
4/4 00:00
4/4 04:00
4/4 08:00
4/4 12:00
4/4 16:00
4/4 20:00
4/5 00:00
4/5 04:00
4/5 08:00
4/5 12:00
4/5 16:00
4/5 20:00
4/6 00:00
4/6 04:00
4/6 08:00
4/6 12:00
4/6 16:00
4/6 20:00
4/7 00:00
4/7 04:00
4/7 08:00
4/7 12:00
4/7 16:00
4/7 20:00
4/8 00:00
4/8 04:00
4/8 08:00
4/8 12:00
38.113' (FA-1)
39.437' (MW-1)
39.289 (FA-3)
39.183 (FA-2 UFA)
<---major rain event
38.526' (FA-2 APPZ)
-15.431' (FA-1)
37.387' (FA-3)
36.665' (FA-1)
39.307' (FA-2 UFA)
38.941' (MW-1)
38.232' (FA-2 APPZ)
37.555' (FA-3)
-16.647' (FA-1)
37.987' (FA-1)
39.424 (FA-2 UFA)
39.349' (FA-3)
39.254' (MW-1)
38.257' (FA-2 APPZ)

Figure 2

FPL OCEC APT
FA-1 Water Levels and Rates

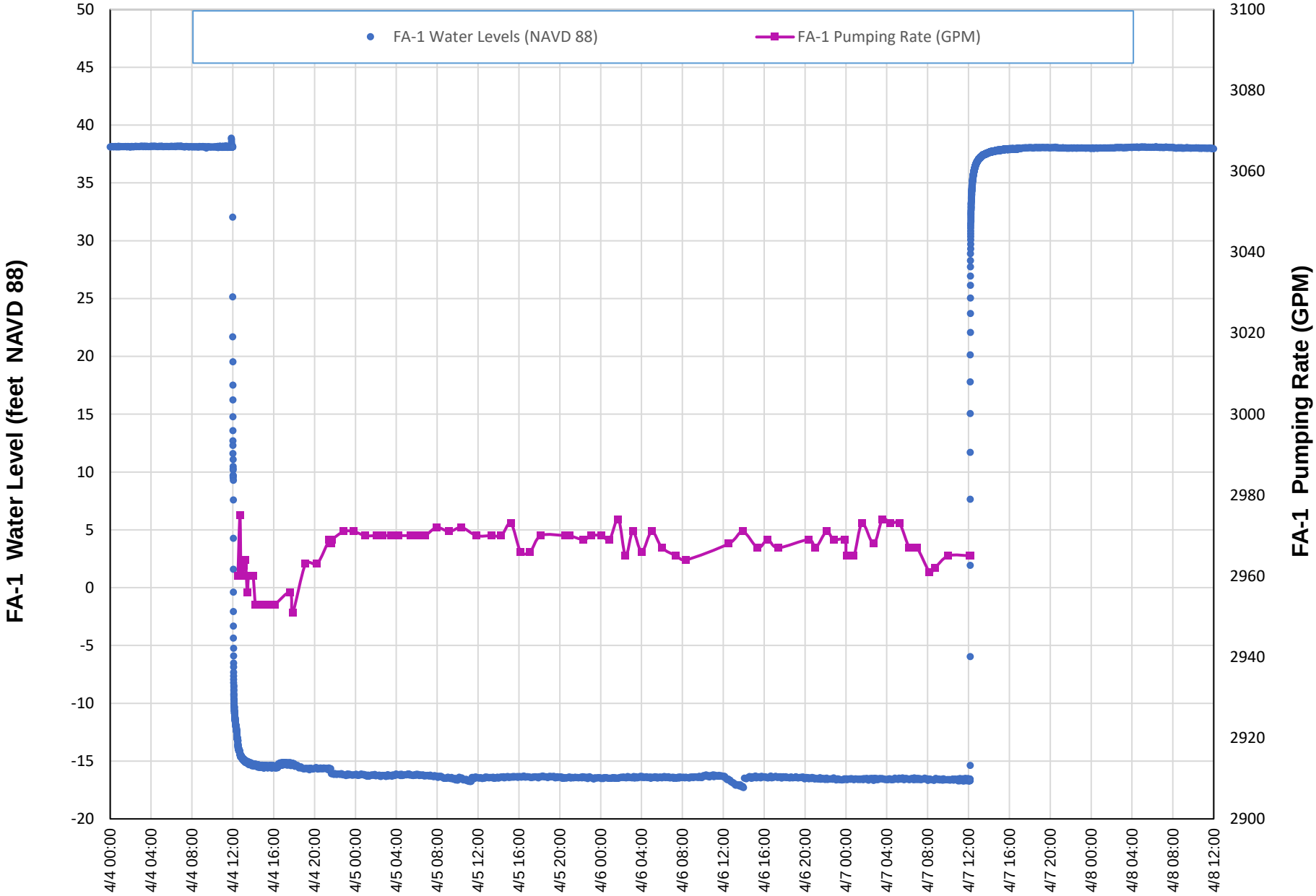

Figure 3

\\JLA_BACKUP\F_JLA Backup\1 JLA Project Archive\16-031 FPL - OCEC - CMS\016 APT\005 Crunched Trans_Manual Data\OCEC APT_DD_WL

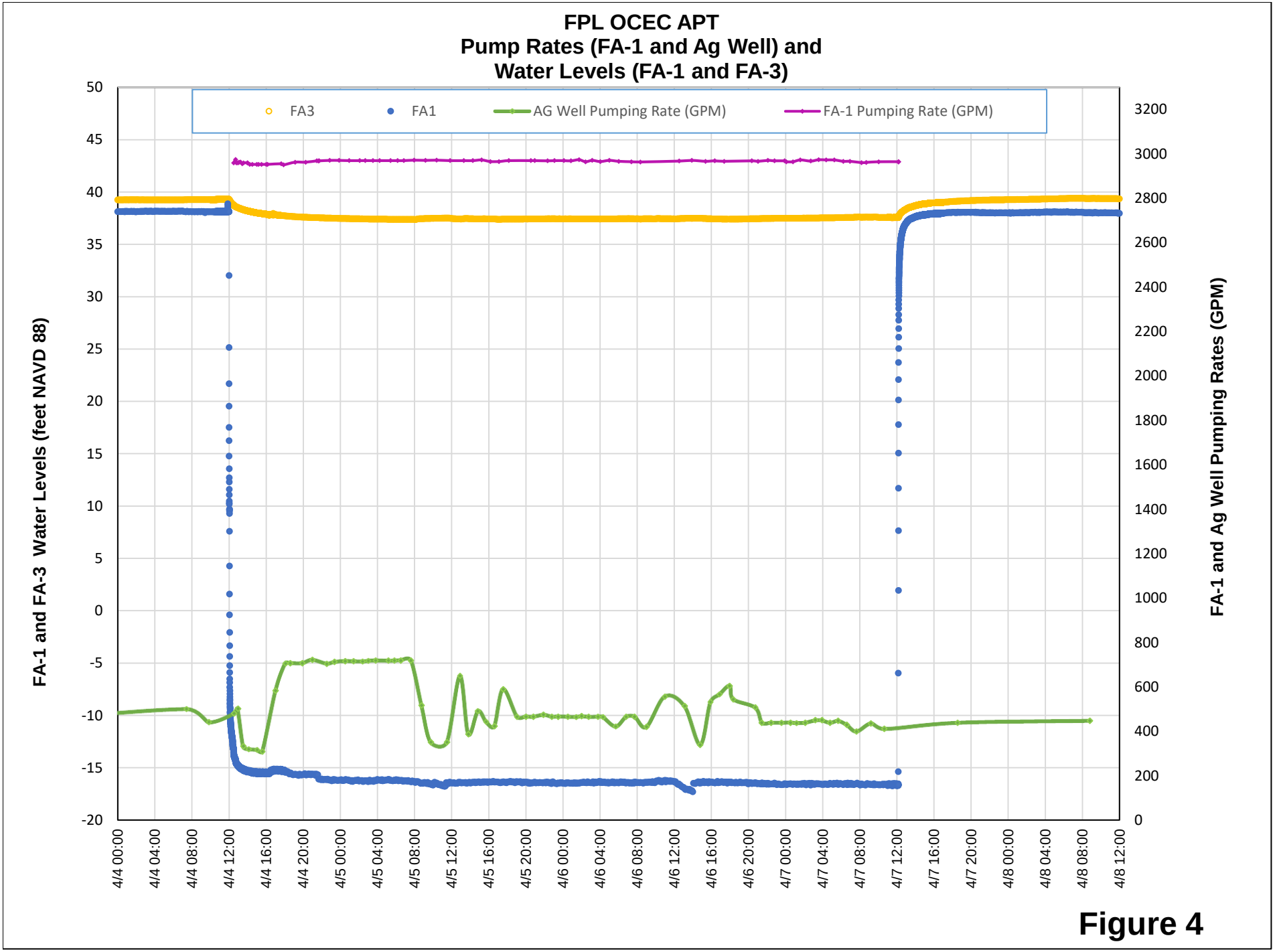

Figure 4

\\JLA_BACKUP\F_JLA Backup\1 JLA Project Archive\16-031 FPL - OCEC - CMS\016 APT\005 Crunched Trans_Manual Data\OCEC APT_DD_WL

FA-3 Hantush Jacob 1955

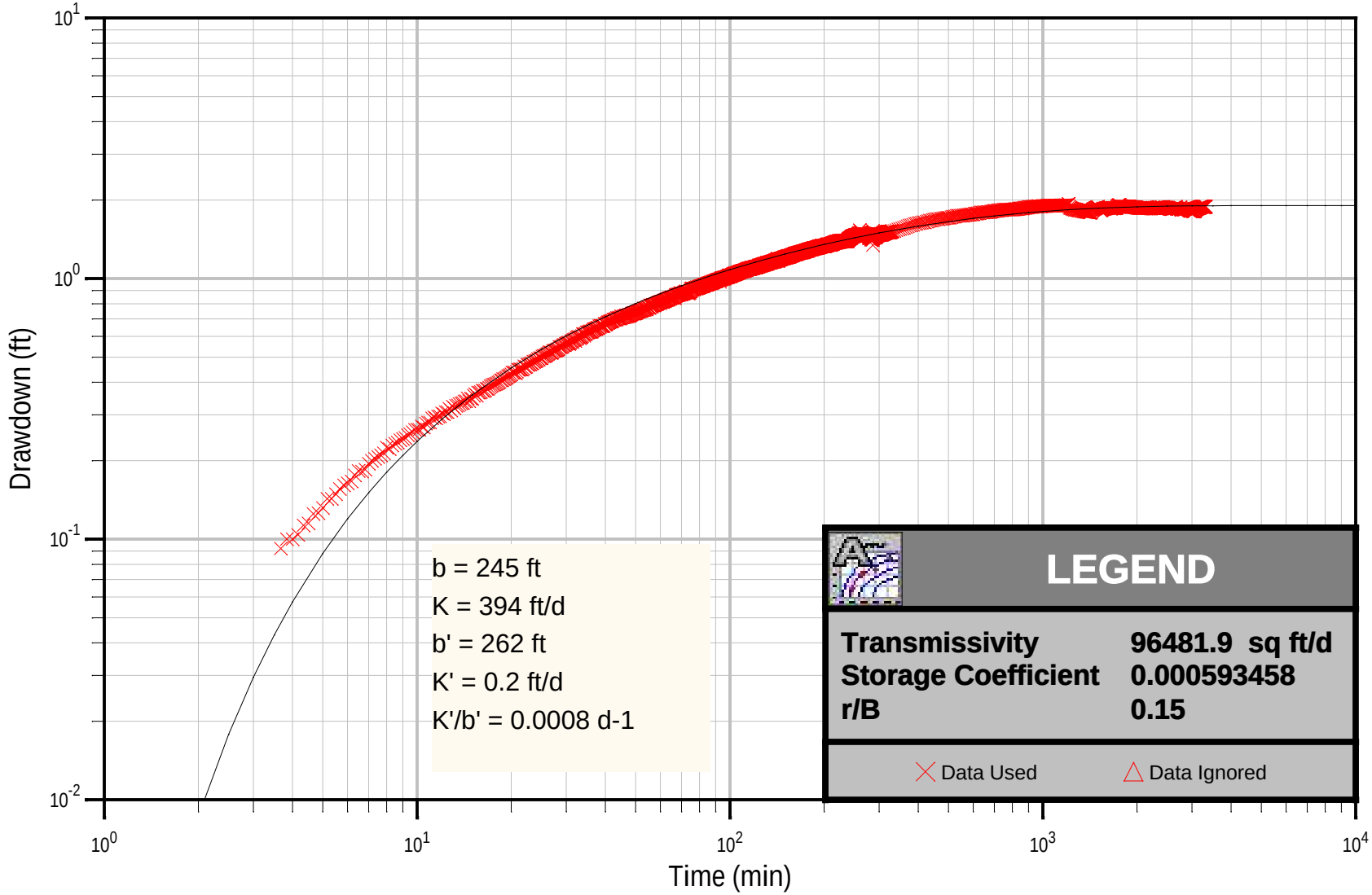

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Figure 5

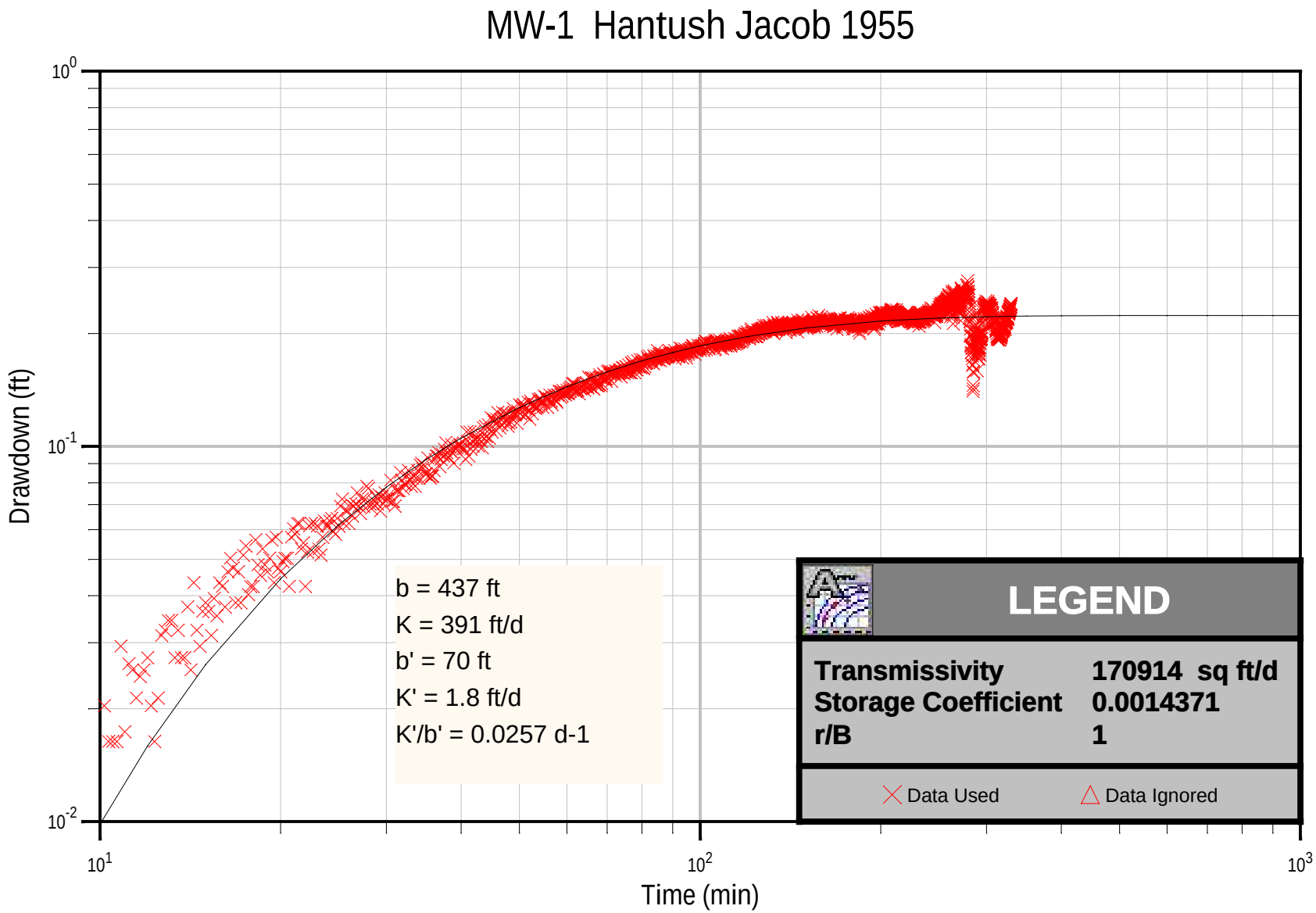

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Figure 6

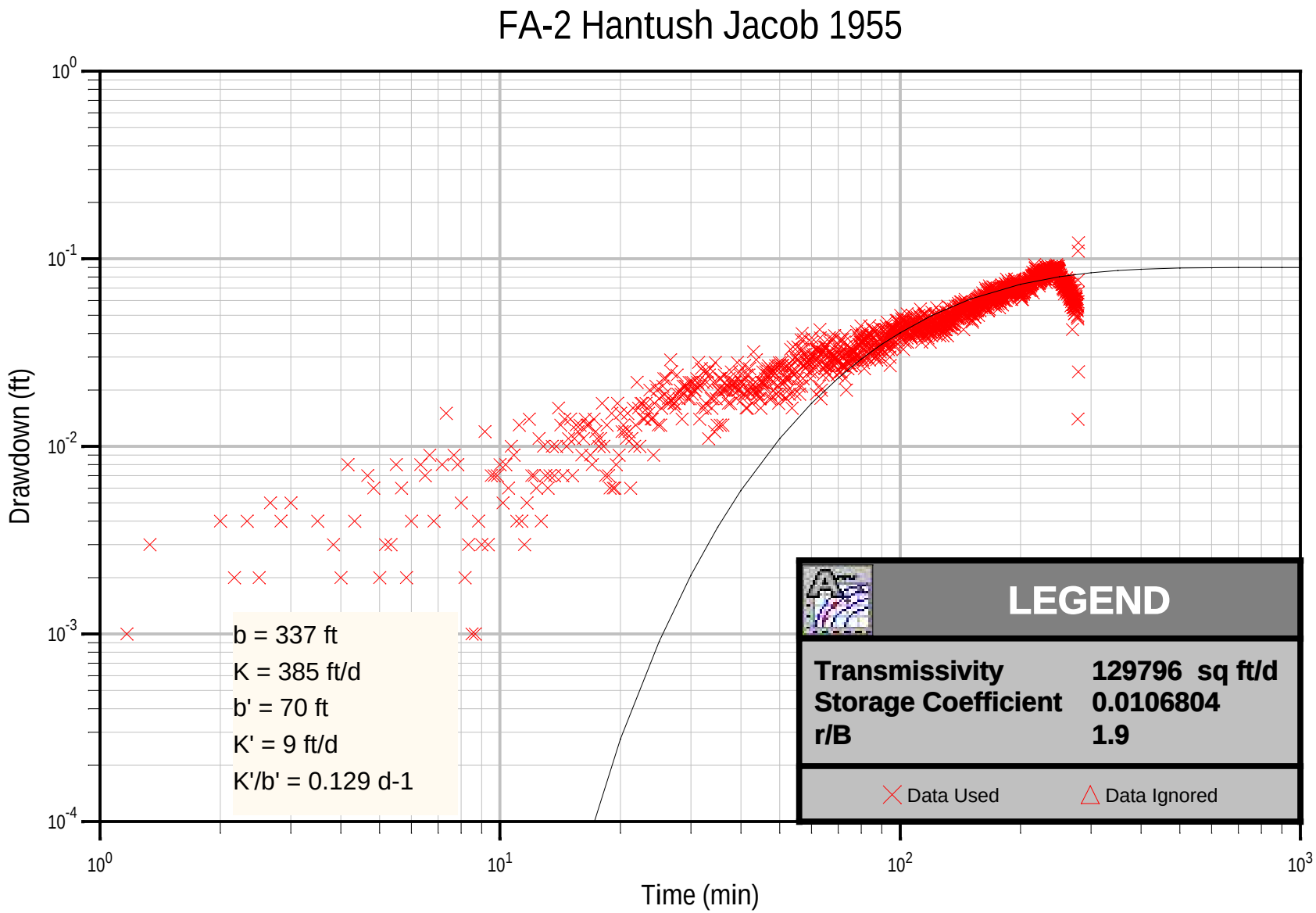

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Figure 7

Tables:

1) Summary of Well FA-1 Performance and Water Quality

2) Summary of Well FA-1 Water Quality Analytical Results

Table 1. Summary of APT Performance and Water Quality Data in Well FA-1

SUMMARY OF APT PERFORMANCE DATA				
Date & Time	**Pump Rate** (gpm)	**Duration** (hours)	**Water Level** (feet NAVD 88)	**Drawdown** (feet NAVD 88)
4/5/2017 0:00	2971	12	-16.19	-54.3
4/5/2017 12:00	2970	24	-16.47	-54.6
4/6/2017 0:00	2970	36	-16.48	-54.6
4/6/2017 12:00	2970	48	-16.36	-54.5
4/7/2017 0:00	2970	60	-16.55	-54.7
4/7/2017 12:00	2970	72	-16.59	-54.7

Static water level prior to commencement of test was measured at **38.12 feet NAVD 88**. Drawdown calculatons are based on this water level.

FIELD WATER QUALITY							
Date & Time m/d/yyyy h:mm	**Temperature** °C	**Specific Conductance** (µS/cm)	**Dissolved Oxygen** (mg/L)	**Chloride** (mg/L)	**pH** (pH units)	**TDS** (mg/L)	**Turbidity** (NTU)
4/4/2017 12:33	25.2	1281	0.37	202	7.72	765	1.12
4/4/2017 17:48	24.8	1225	0.3	187	7.65	734	0.60
4/4/2017 19:20	25.0	1178	N/A	160			
4/4/2017 23:58	24.9	1149	0.42	156	7.65	690	1.11
4/5/2017 5:42	24.8	1111	0.16	148	7.60	667	0.61
4/5/2017 10:49	25.1	1110	0.18	147	7.73	666	0.50
4/5/2017 12:00	25.5	1109	0.22	147	7.69	664	0.48
4/5/2017 18:10	25.1	1076	0.24	141	7.59		0.94
4/6/2017 0:05	24.9	1088	0.20	143	7.62	653	0.41
4/6/2017 6:03	24.9	1078	0.24	142	7.71	647	0.34
4/6/2017 14:06	25.1	1070	0.22	141	7.71	642	0.99
4/7/2017 0:10	24.9	1054	0.29	137	7.68	634	
4/7/2017 8:26	24.1	1063	3.01	134	7.84	639	

- gpm denotes gallons per minute
- ft NAVD 88 denotes feet referenced to the North American Vertical Datum (NAVD 88)
- gpm/ft denotes specific capacity in gallons per minute per foot of drawdown
- ° C denotes temperature in units of degrees celsius
- "mg/L" denotes concentration in units of milligrams per liter
- "µS/cm" denotes specific conductance in units of microSiemens per centimeter.
- '"NTU" denotes Nephelometric Turbidity Units
- On 04/04/2017, 12:00 the pumping portion of the APT commenced.

The final water quality sample for lab analysis was collected on 04/07/2017 at 09:00 hrs.

- On 04/07/2017, 12:10 the pumping portion of the APT ended.

Table 2. APT Analytical Results, FPL OCEC Production Well FA-1

Parameter	Units	Result		Parameter	Units	Result	
Silica, Dissolved	µg/L	19400		1,1,2-Trichloroethane	µg/L	0.25	U
Langelier_Index	LX	0.13		1,1-Dichloroethene	µg/L	0.25	U
Saturation_Index	pHs			1,2,4-trichlorobenzene	µg/L	0.41	U
Stability_Index	pHs			1,2-dichloroethane	µg/L	0.25	U
Residual Chlorine	mg/L	0.10		1,2-dichloropropane	µg/L	0.25	U
Turbidity	NTU	0.31		Benzene	µg/L	0.25	U
Bicarbonate Alkalinity	mg/L	125		Carbon Tetrachloride	µg/L	0.25	U
Total Hardness as CaCO3	mg/L	365000		Chlorobenzene	µg/L	0.25	U
Total Alkalinity CaCO3	mg/L	125		Ethylbenzene	µg/L	0.25	U
Specific Conductance	µmhos/cm	1049		Methylene chloride	µg/L	0.44	U
Color	CU	5.0	U	Para-dichlorobenzene	µg/L	0.25	U
Total Solids	mg/L	656		Styrene	µg/L	0.25	U
Chloride	mg/L	128		Tetrachloroethene	µg/L	0.25	U
Nitrate (as N)	mg/L	0.025	U	Toluene	µg/L	0.250	U
Nitirite (as N)	mg/L	0.025	U	Trichloroethene	µg/L	0.25	U
Sulfate	mg/L	154		Vinyl chloride	µg/L	0.39	U
Aluminum	µg/L	50.0	U	Xylenes	µg/L	0.25	U
Aluminum, Dissolved	µg/L	56.4	I	cis-1,2-dichloroethene	µg/L	0.25	U
Arsenic	µg/L	5.0	U	o-dichlorobenzene	µg/L		U
Barium	µg/L	39.9		trans-1,2-dichloroethene	µg/L	0.25	U
Boron	µg/L	61.9		TDS	mg/L	776	
Chromium	µg/L	2.5	U	BOD5day	mg/L	4.0	U
Copper	µg/L	2.5	U	TOC	mg/L	1.7	
Lead	µg/L	5.0	U	Orthophosphate (as P)	mg/L	0.020	
Selenium	µg/L	7.5	U	TKN (as N)	mg/L		I
Silica (SiO2)	µg/L	20800		Total Phosphorus (as P)	mg/L	0.050	U
Silver	µg/L	2.5	U	Lab pH	pHs	7.67	
Strontium	µg/L	12800		Ammonia (as N)	mg/L	0.36	
Zinc	µg/L	10.0	U	Iron	µg/L	20.0	U
Magnesium	µg/L	44000	U	Magnesium Hardness CaCO3	µg/L	181000	
Calcium	µg/L	73500		Manganese	µg/L	2.5	U
Calcium Hardness (CaCO3)	µg/L	183000		Potassium	µg/L	3480	
Iron, Dissolved	µg/L	20.0	U	Sodium	µg/L	75200	
Manganese, Dissolved	µg/L	2.5	U	Fluoride	mg/L	0.56	
Hydrogen Sulfide	mg/L	0.420		Cadmium	µg/L	0.50	U
TSS	mg/L	5.00	U	Biological Oxygen Demand (BOD)	mg/L	4.0	U
1,1,1-Trichloroethane	µg/L	0.250	U				

-"TKN" denotes Total Kjeldahl Nitrogen

-"TDS" denotes Total Dissolved Solids

-"mg/L" denotes concentration in units of milligrams per liter

-"µmhos/cm" denotes specific conductance in units of micromhos per centimeter.

"NTU" denotes Nephelometric Turbidity Units

-"µg/L" denotes concentration units of micrograms per liter

-"pCi/L" denotes concentration units of picoCuries per liter

-"U" indicates compound was analyzed for but not detected

-"I" indicates reported value between the laboratory method detection limit and the laboratory pratical quantitation limit

-"Q" indicates sample held beyond the accepted holding time

Attachment 1:

APT Plan

Florida Power & Light

Okeechobee Clean Energy Center

Upper Floridan Aquifer
Aquifer Performance Test Plan

November 17, 2016

Contents

Figures

Aquifer Performance Test Plan

1. Introduction

The Aquifer Performance Test (APT) plan will govern the testing to determine the Upper Floridan Aquifer (UFA) and Avon Park Producing Zone (APPZ) hydraulic parameters. The APT plan has been developed pursuant to the Florida Power and Light (FPL) Okeechobee Clean Energy Center (OCEC) Conditions of Certification for submittal to St. Johns River Water Management District (SJRWMD) and Florida Department of Environmental Protection.

The APT will be performed after the completion of and development of the single UFA monitor well (MW-1) that will be used as an observation well during the APT, one (1) dual zone production well (FA-2) constructed into both the UFA and APPZ that will be used as an observation well during the APT, and one (1) UFA single zone production well (FA-1) constructed into the UFA that will be used as the test production well (FA-1) during the APT. The APT will be conducted by pumping the test production well (FA-1) and observing changes in artesian heads or changes in water levels in the pumped well (FA-1) and observation wells (FA-2 and MW-1). The APT results will be used to estimate the transmissivity, leakance, and storage coefficient of the UFA in the vicinity of the FPL OCEC site.

Tasks to be completed in order to implement the APT will include well installation, step drawdown testing, background data collection, constant rate discharge testing, recovery data collection, water quality testing, data analysis, and reporting. The APT scope of work will follow APPENDIX D of the SJRWMD Consumptive Uses of Water Applicants Handbook. The tasks associated with the APT are summarized in the following sections:

2. Construction/Installation of On-Site Wells

A total of three (3) wells, one (1) test production well (FA-1), 1 UFA observation well (MW-1), and 1 dual zone UFA and AAPZ observation well (FA-2) will be installed to conduct the APT. Well locations are shown on **Figure 1**. Well FA-1 and FA-2 will be constructed as permanent production wells and used to produce plant makeup water following the APT. MW-1 will be constructed as a monitor well only and will be used during the APT to monitor water levels in the UFA. Well FA-2 will be used to observe water levels in both the UFA and the APPZ during the APT. FA-1 will be used as the test production well during the APT and will be located south of well MW-1 and west of well FA-2.

Figures 2, 3, and 4 show proposed well-installation details for FA-2, FA-1, and MW-1, respectively. Wells FA-1, FA-2, and MW-1 will be constructed using the mud rotary method with surface casing installed to approximately 200-feet below land surface (BLS) and final well casing to approximately 400-feet BLS. The best available well depth and casing information for the closest adjacent legal user will be used to determine the monitoring zone for MW-1. Prior to installation of each casing string a pilot hole will be drilled. Drill cuttings will be collected every 5 feet or at formation changes, whichever comes first during the pilot-hole drilling. Geologic logs will be taken and recorded. Geophysical logs including electric log (spontaneous potential and resistivity), Gamma Ray log, and Caliper logs will be run on each pilot hole. The pilot hole will be reamed to the diameters shown on the attached **Figures 2, 3 and 4**. Each casing segment

will be lowered to the appropriate depth and grouted from the base of the casing up to land surface.

Following installation and grouting of the final casing string, the open borehole completion interval of each well will be drilled employing the reverse air method. Water quality samples will be collected from the reverse air discharge water at 10-foot intervals while drilling through the UFA. Field water quality analysis of reverse air discharge water samples will include temperature (^{o}C), pH (SU), Specific Conductance (µmhos/cm or µS/cm), and Chloride (mg/L). Wells FA-1, FA-2, and MW-1 will be constructed with an open hole UFA completion interval between approximately 400-feet and 800-feet BLS.

Following drilling and testing of the upper portion of well FA-2 in the UFA production zone a third casing segment will be installed to the top of the APPZ at a depth of approximately 1,100-feet BLS. The final FA-2 casing string will be grouted from approximately 1,100 foot to 800-foot depth or the approximate base of the UFA production zone as determined during reverse air drilling. Water quality samples will be collected from the reverse air discharge water at 10-foot intervals while drilling through the UFA and APPZ. Field water quality analysis of reverse air discharge water samples will include temperature (^{o}C), pH (SU), Specific Conductance (µmhos/cm or µS/cm), and Chloride (mg/L). The lower portion of well FA-2 in the APPZ will have an open hole completion interval between approximately 1,100-feet and 1,300-feet BLS.

The wells will be developed prior to the APT by a combination of airlifting, surging, pumping, and flowing development. The well installation methods will ensure that the surficial aquifer will be sealed from the UFA during the well installation. Well development will continue until the discharge from each well is basically free from sediment. Development and APT discharge water will be discharged in accordance with the Site Certification Application.

3. Step Drawdown Test

Step drawdown (SDD) testing on the test production well will be performed after well development and prior to the APT to predict the test production well (FA-1) drawdown at pumping rates within the range of 2,500 GPM and 4,000 GPM. The SDD test data will be used to determine the pumping rate of the constant rate pumping test that is expected to be approximately 3,000 gpm and will be determined after SDD testing is completed. The pump used during the SDD testing will be capable of operating at various discharge rates. If possible, SDD testing will be performed during a period of no rainfall. Pumped water during the test will be discharged to the temporary settling pond and routed off site through the storm water management system (see Figure 5).

A calibrated flow meter and/or orifice weir will be used to measure and record the pump discharge rate. The SDD test will be performed at a minimum of four (4) constant discharge rates that represent approximately 90%, 100%, 125% and 160% of the test production well design capacity. The SDD test will begin with the lowest test discharge rate. The pumping periods during the SDD tests will be 1.0, 1.5, 2.0, and 2.5 hours for the 1st, 2nd, 3rd, and 4th steps consecutively, or until reasonable water level equalization is reached. The test well pump capacity will be adjusted to control the discharge rate as required during each step of the SDD test.

Water levels will be measured in the test production well before, during and after the pumping portion of the SDD test with an electronic pressure transducer data logger. Backup water level measurements will be taken from the top of the casings using an electric water level probe.

Background water levels will be measured with the electronic pressure transducer at least every 5 minutes for 12 hours within 0.01 feet for each respective well before the SDD test begins. Prior to the start of the SDD test, the static water level in the test production well will be manually measured and recorded. Pumping drawdown at the test production well will also be measured manually. Manual measurements will be taken at least every 5 minutes during each SDD test step. During the pumping portion of the SDD test, water levels will be recorded in the pumping well to the nearest 0.01 foot with a pressure transducer using the following schedule:

Frequency of Measurement	Time After Pumping Starts (Each Step)
Every 30 seconds	2 to 5 minutes
Every 1 minute	5 to 15 minutes
Every 5 minutes	15 to 60 minutes to end of step
Every 10 minutes	60 minutes to end of step

At the completion of the SDD test, the test pump shall stop and water levels in the well will be allowed to recover to prepumping conditions (within 0.1 foot of the prepumping level). During the recovery period water levels will be measured and recorded using the same schedule as the pumping portion of the SDD test.

Step Drawdown Test Analysis

The specific drawdown (s/Q) for each step test will be calculated from the drawdown data and the constant discharge rate (Q). The constant discharge (Q) versus the specific drawdown (s/Q) at the test production well will be plotted to determine the head loss that may occur at the production well.

4. Constant Rate Discharge Aquifer Performance Test

The prepumping water level in the test production well and all observation wells will be referenced to NAVD88. Background data will be collected for a minimum of 24 hours prior to the constant rate discharge test to determine if any outside influences exist that may affect the APT and that would need to be corrected in the APT results.

The nearest existing users wells to the FPL production and monitor wells are the Diamond P Ranch Grove, Pressley Ranch, and Twenty Mile Bend Groves which are located at a distance of approximately 1 to 2 miles from the OCEC site. Existing wells are not expected to influence the APT results because the distance from the test wells is sufficiently distant.

Flow from the existing agricultural wells on the site will be isolated or maintained at a constant flow rate during the monitoring period (prepumping, pumping, and recovery) to avoid impacting the APT.

The static water level in the production well and all observation wells will be measured and recorded for 24 hours prior to beginning the APT . The measured water levels must be within 0.01 foot of the static water level for each respective well before the constant rate discharge test may begin.

Drawdown measurements will be made according to the following schedule:

Frequency of Measurement	Time After Pumping Starts
Every 15 seconds	0 to 2 minutes
Every 30 seconds	2 to 5 minutes
Every 1 minute	5 to 15 minutes
Every 5 minutes	15 minutes to 60 minutes
Every 10 minutes	60 to 120 minutes
Every 30 minutes	2 to 5 hours
Every 1 hour	5 to 72 hours

Backup water level measurements will be taken from the top of the casings using an electric probe at each well. Pumping drawdown at the test production well will also be measured manually. Once the pumping is started, manual measurements will be taken at least every 5 minutes for the first hour, every 15 minutes from hours 1 through 3, and every hour from hours 3 to 72.

The pump used during the 72 hour constant rate discharge APT will be capable of operating at a rate of up to 5,000 gpm, however, the actual discharge rate used during the APT will be determined after SDD testing is completed. A preliminary estimate of the APT pumping rate is 3,000 gpm. During the APT the pump discharge rate will be recorded by observing the inline calibrated flow device. The discharge rate will be kept as constant as possible by controlling the pump discharge rate during the APT. APT discharge water will be disposed of in accordance with all applicable permits.

After pumping the test well at a constant rate for 72 hours, or until steady-state water levels are established (for a minimum of 24 hours), the pump will be stopped and recovery water levels will be measured and recorded. Recovery data will be manually collected for a 24 hour period after the pump is stopped or until the water level has recovered to within 0.05 feet of the initial static water level if recovery takes more than 24 hours. Recovery measurements will be made according to the following schedule:

Frequency of Measurement	Time After Pumping Starts
Every 15 seconds	0 to 2 minutes
Every 30 seconds	2 to 5 minutes
Every 1 minute	5 to 15 minutes
Every 5 minutes	15 minutes to 60 minutes
Every 10 minutes	60 to 120 minutes
Every 30 minutes	2 hours to end of recovery period (24 hours minimum)

It is not expected that the UFA, which is approximately 400 feet below ground surface, will be impacted by rainfall that may occur during the APT. However, if rainfall occurs during the constant rate pumping test, the rainfall amount during the test will be recorded and reported in the test report.

Water Quality Analyses

During the pumping portion of the APT, UFA discharge water will be tested in the field for temperature (^{o}C), pH (SU), Specific Conductance (µS/cm or µmhos/cm), Turbidity (NTU), and chloride concentration (mg/L) at the following time intervals after pumping starts:

- After 3 to 5 casing volumes purged
- 6 hours
- 12 hours
- 18 hours
- 24 hours
- 36 hours
- 48 hours
- 60 hours
- 72 hours

At the end of the pumping portion of the APT water quality samples will be collected for laboratory analysis. Parameters to be tested include Calcium, total (mg/L), Magnesium, total (mg/L), Potassium, total (mg/L), Sodium, total (mg/L), Iron, total (mg/L), Strontium, total (mg/L), Chlorides, total (mg/L), Sulfates, total (mg/L), Total Alkalinity (mg/L as CaCO3), Total Dissolved Solids (mg/L), and Specific Conductance (µS/cm or µmhos/cm). Water quality samples will be collected from the test production well in accordance with the Florida Department of Environmental Protection's (DEP) standard operating procedures (SOP), DEP-SOP-001/01, DEP Quality Assurance Rule, 62-160, Florida Administrative Code (F.A.C), including any applicable revisions. The recorded water quality data will be included in the test report.

5. Constant Rate Discharge Test Analysis

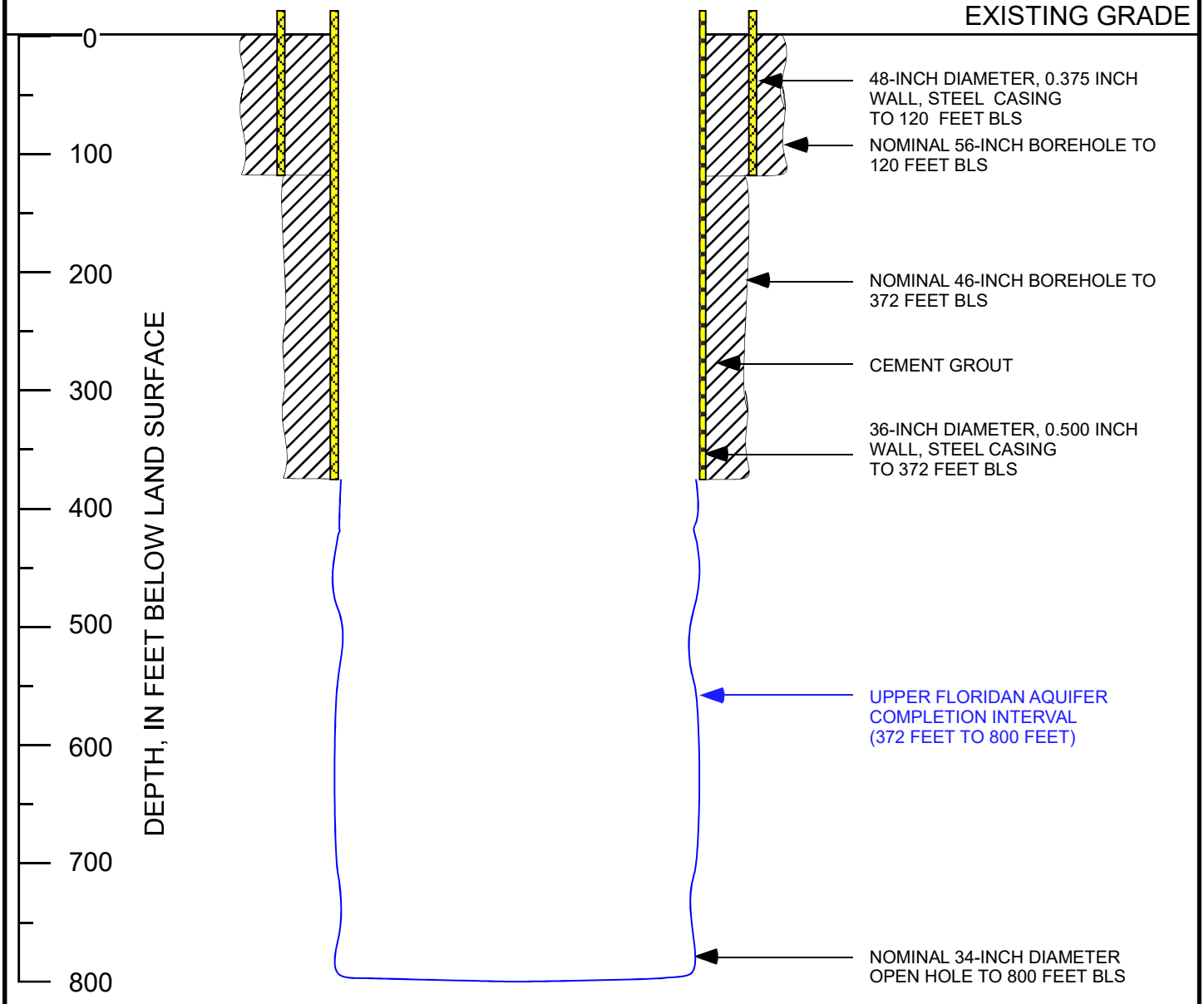
The raw drawdown and recovery data obtained during the testing will be adjusted to account for any external influences such as adjacent pumping or recharge as determined from the background data collection. The head decline with time at the test production well and the observation wells during the constant pumping test will be used to evaluate the aquifer parameters. The test data will be evaluated using the confined aquifer solutions of Theis (1935), Cooper-Jacob (1946) and leaky aquifer solutions Hantush-Jacob (1955) and Hantush (1960).

6. Hydrogeologic Report

A preliminary hydrogeologic report will be prepared at the completion of the APT analysis and provided to SJRWMD. The report will include a summary of the test preparation, the raw data collected, the well construction program, analytical methods, appropriate graphics and tables, and estimated values of aquifer characteristics including transmissivity and leakance. No later than 90 days after the APT is complete, FPL will provide an APT final report ("APT Report") documenting well construction, APT procedures, data analysis, and APT results to the FDEP SCO and SJRWMD. The APT Report will be signed and sealed by a Florida Registered ProfessionalGeologist or Professional Engineer.

Attachment 2:

Well Construction Details and Geophysical Log Plots



JLA Geosciences, Inc.

LEGEND:
CEMENT GROUT
STEEL WELL CASING
OPEN HOLE

SCALE: AS SHOWN	DATE: 12/16/2016
DRAWN BY: CFS	DWG #:

PROJECT SITE: FLORIDA POWER AND LIGHT
OKEECHOBEE CLEAN ENERGY CENTER
WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1

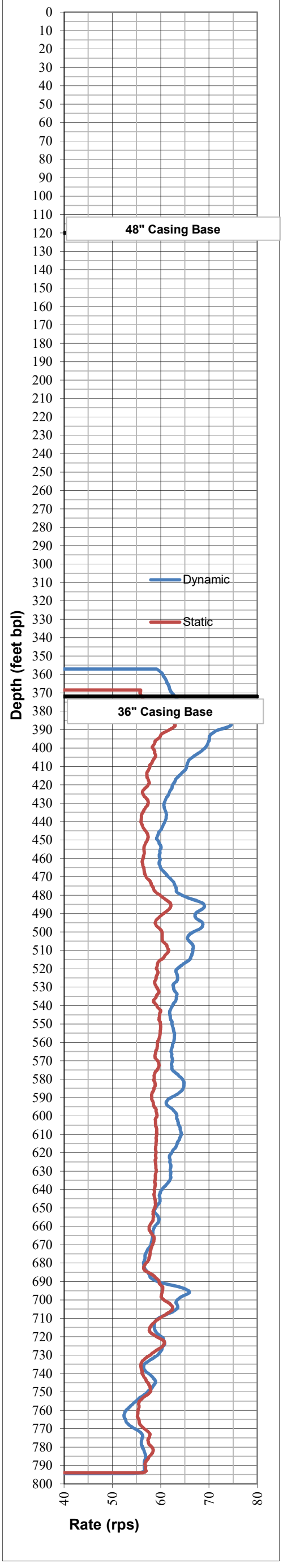
PROJECT NO: 16-031

FIGURE TITLE: FA-1
WELL CONSTRUCTION DIAGRAM

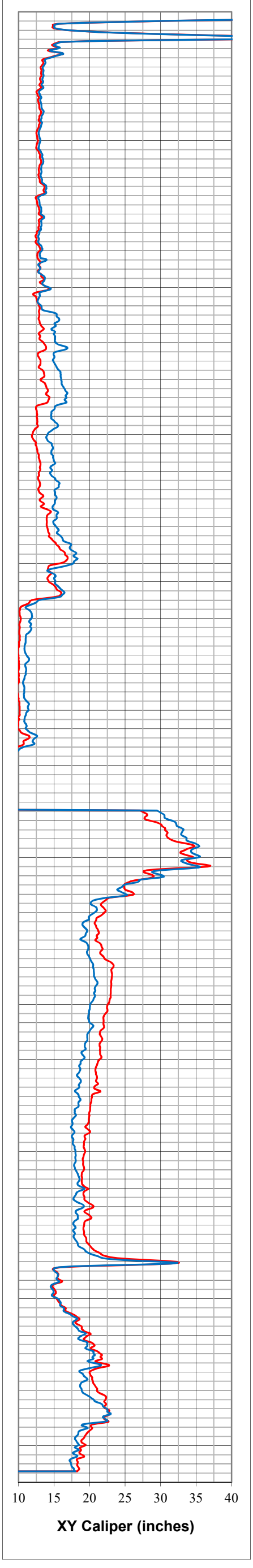
FIGURE NO: 2

Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-1

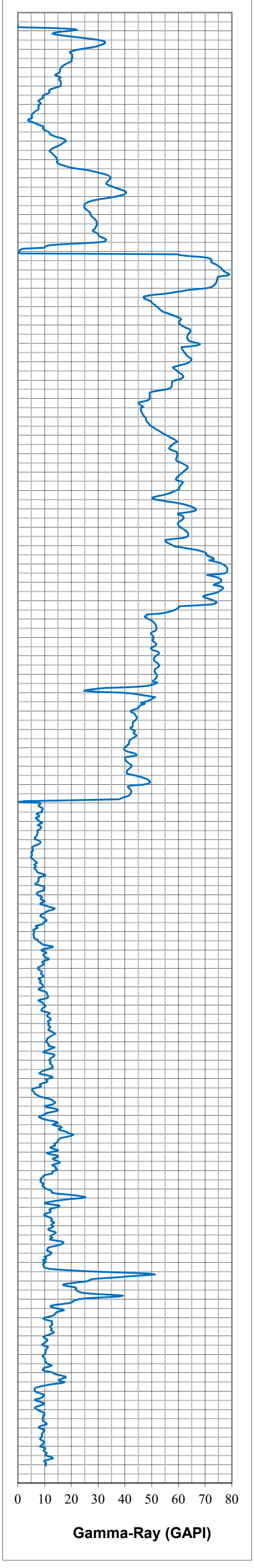
Well FA-1 Flow



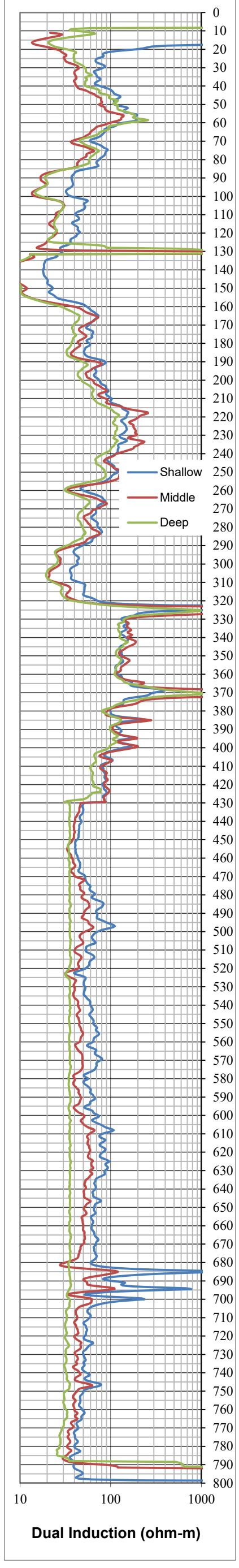
Well FA-1 XY Caliper



Well FA-1 Gamma Ray

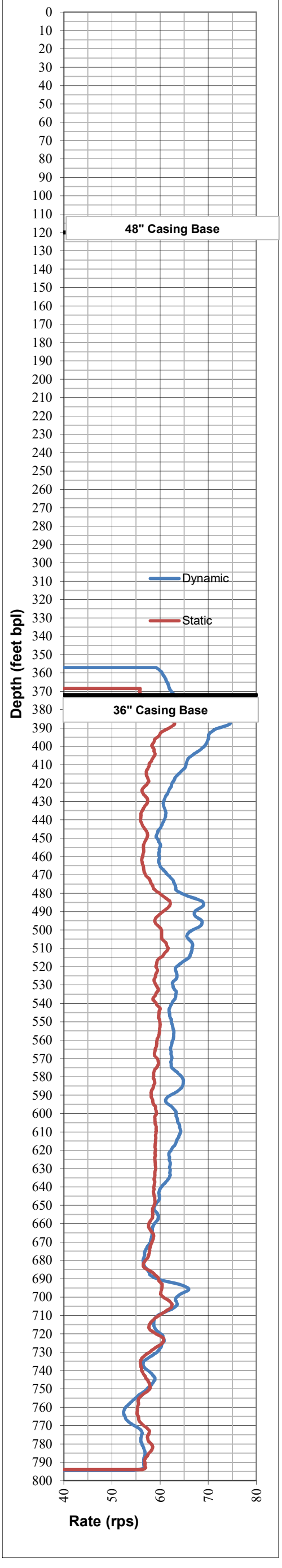


Well FA-1 Dual Induction

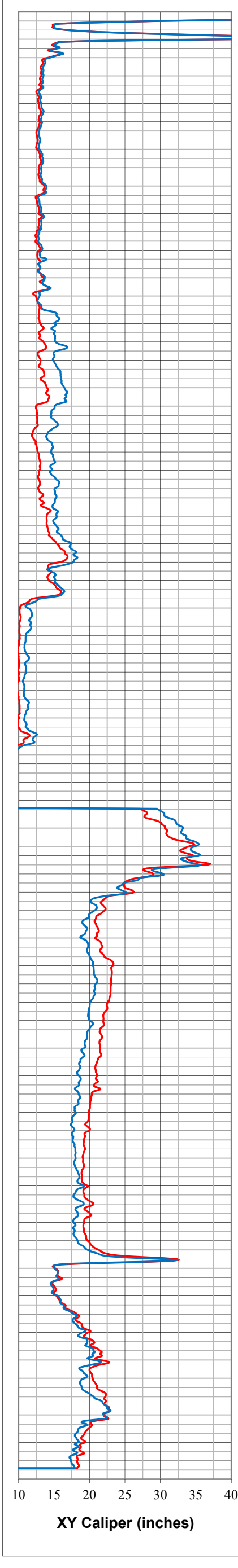


Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-1

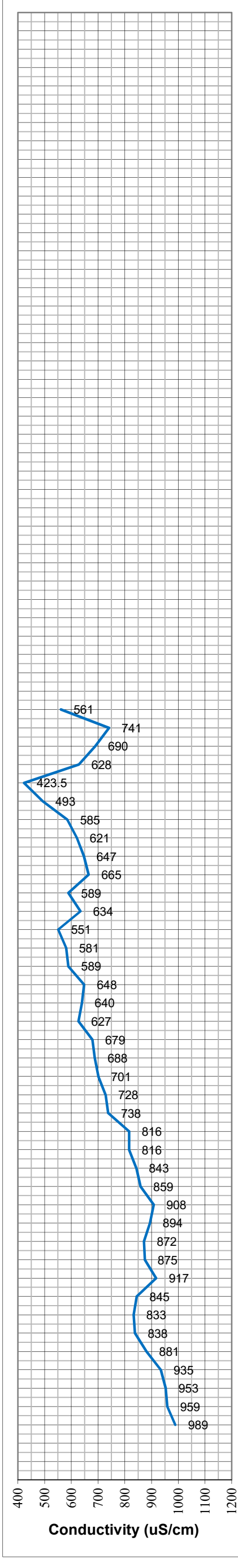
Well FA-1 Flow



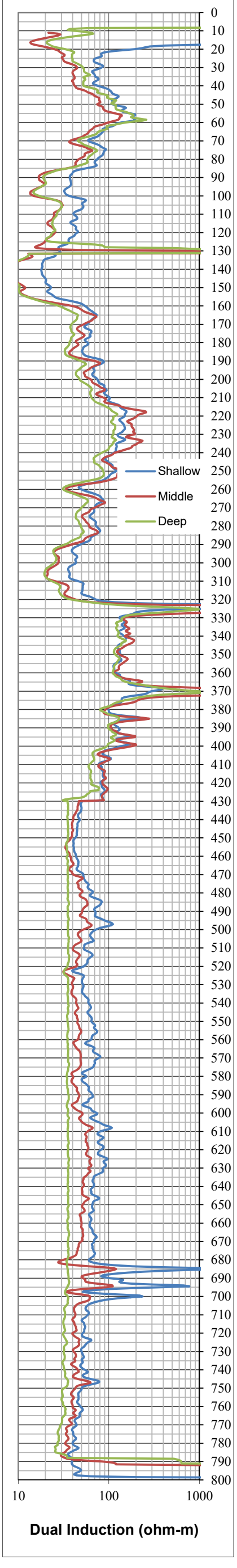
Well FA-1 XY Caliper



Well FA-1 Field Conductivity

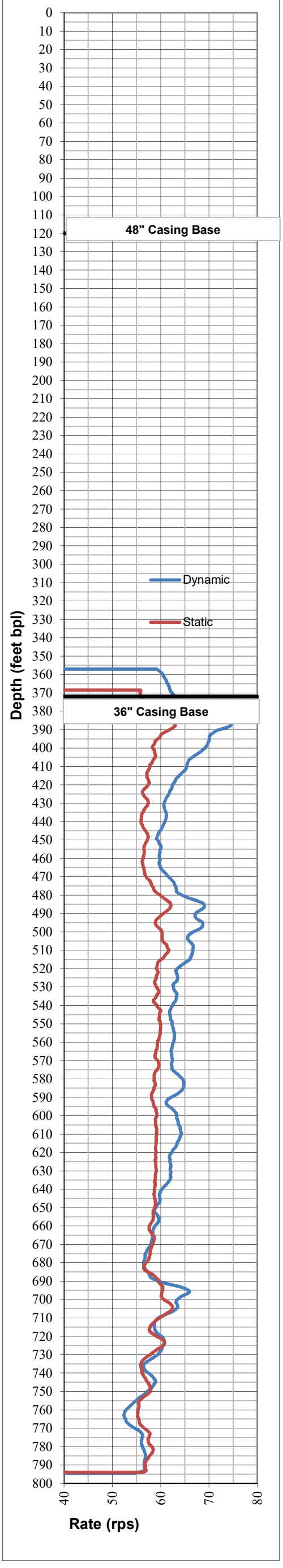


Well FA-1 Dual Induction

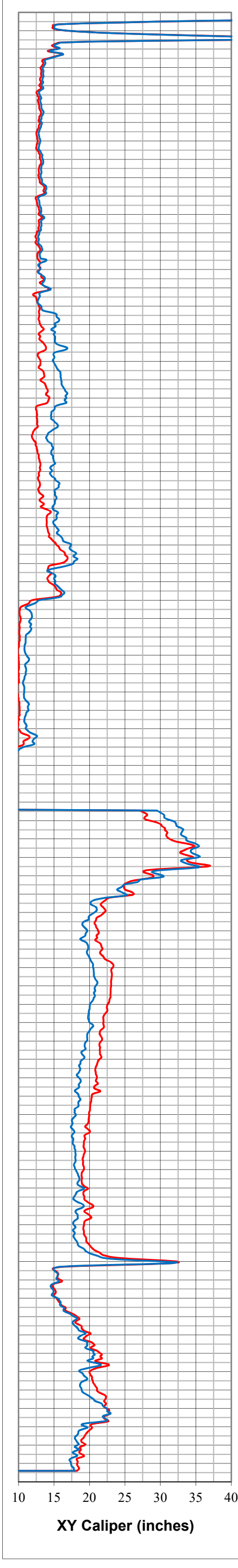


Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-1

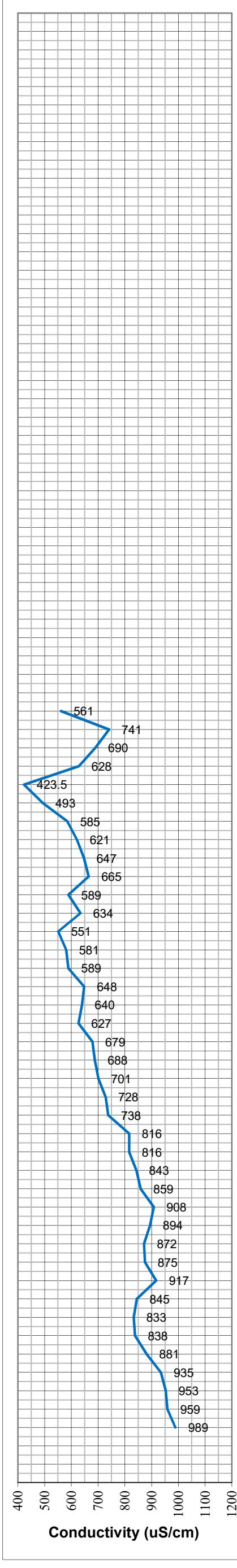
Well FA-1 Flow



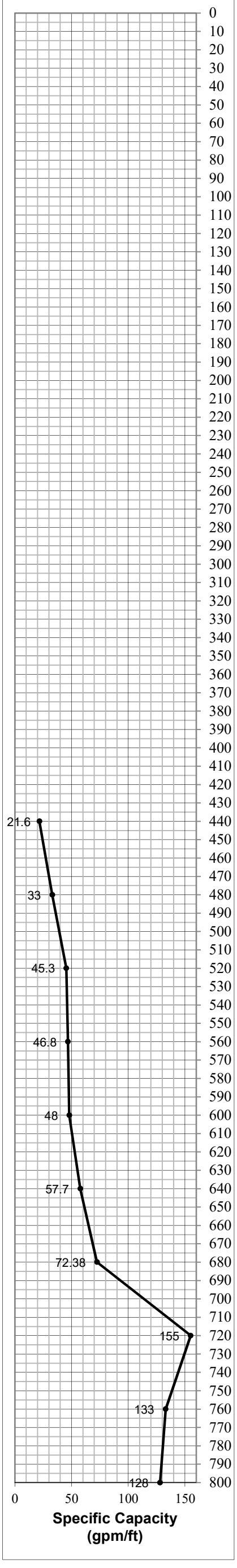
Well FA-1 XY Caliper

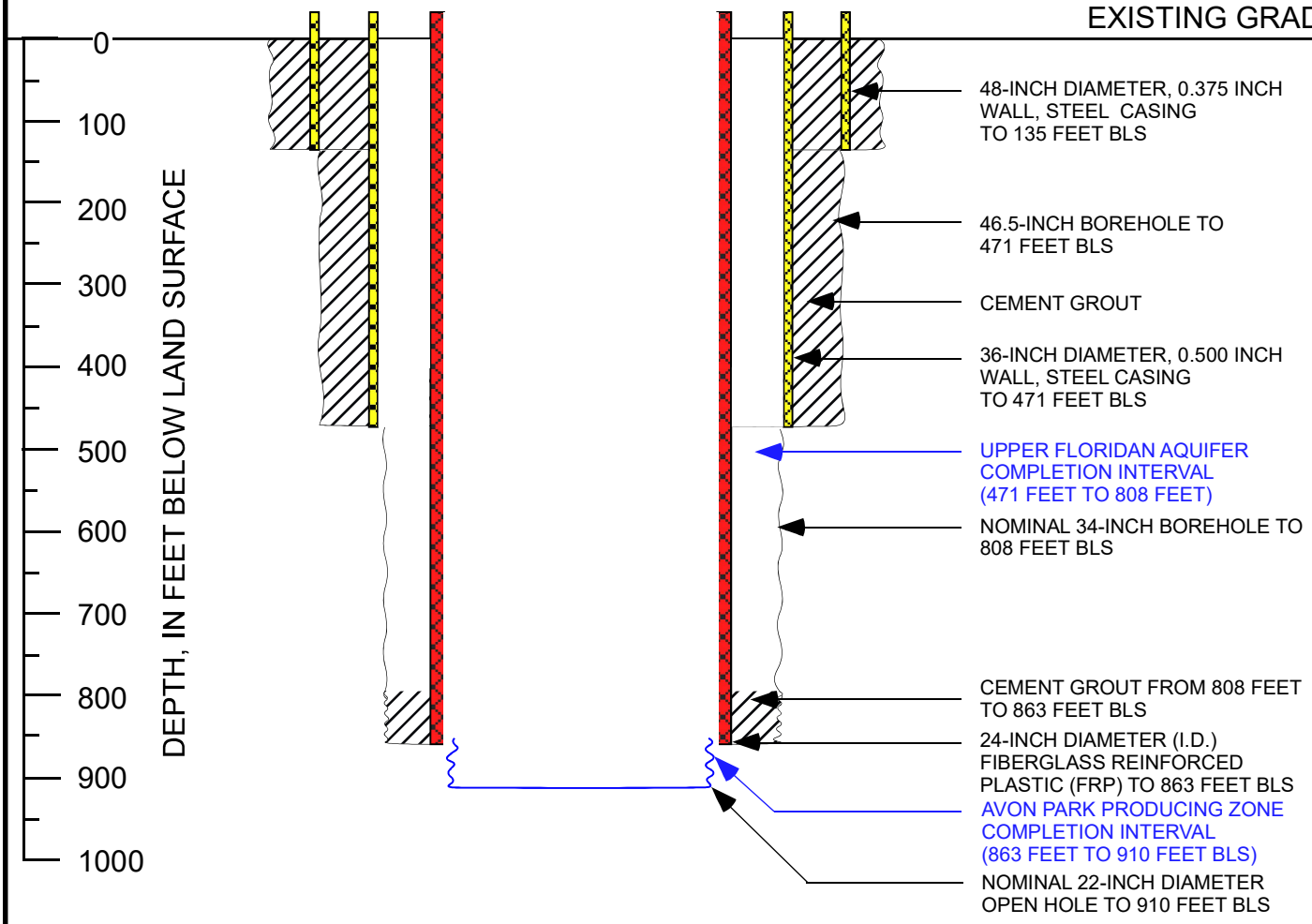


Well FA-1 Field Conductivity



Well FA-1 Flow Tests





A nominal 15-inch diameter pilot hole was drilled to a total depth of 1,207 feet bls. Upon completion of testing, the pilot hole was cemented back to 910 feet bls.

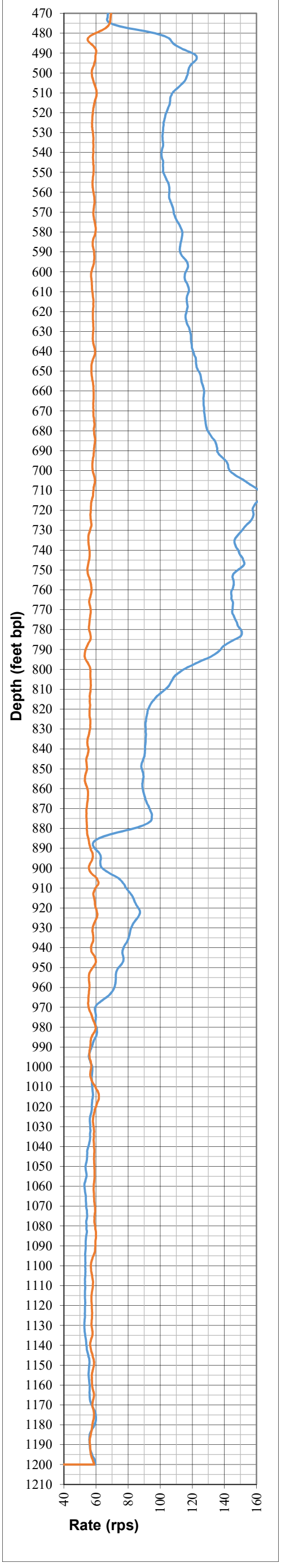
A 10-foot section of 4-inch diameter SCH 40 PVC remains in the open hole in a horizontal position at a depth of 896 feet bls.

JLA Geosciences, Inc.

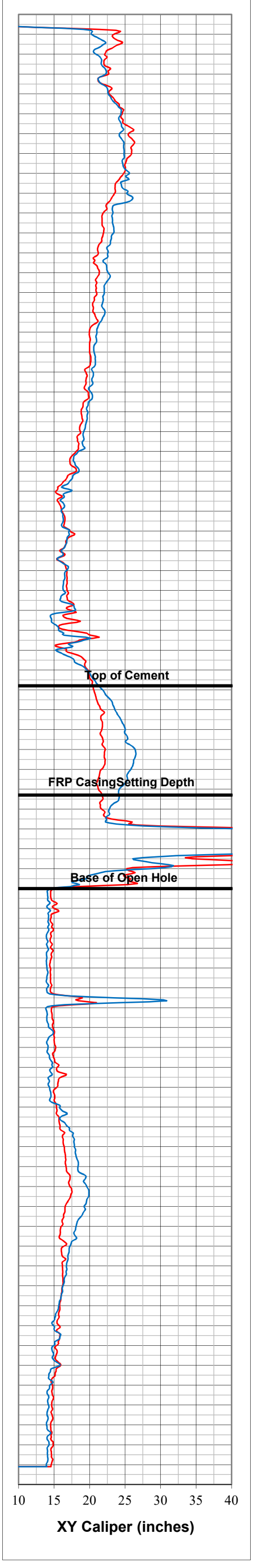
LEGEND: CEMENT GROUT; FRP WELL CASING; STEEL WELL CASING; OPEN HOLE	SCALE: AS SHOWN	DATE: 02/05/2017	
	DRAWN BY: CFS	DWG #:	
PROJECT SITE: FLORIDA POWER AND LIGHT OKEECHOBEE CLEAN ENERGY CENTER WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1		PROJECT NO: 16-031	
FIGURE TITLE: FA-2 (APPZ) WELL WELL CONSTRUCTION DIAGRAM		FIGURE NO: 2	

Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-2

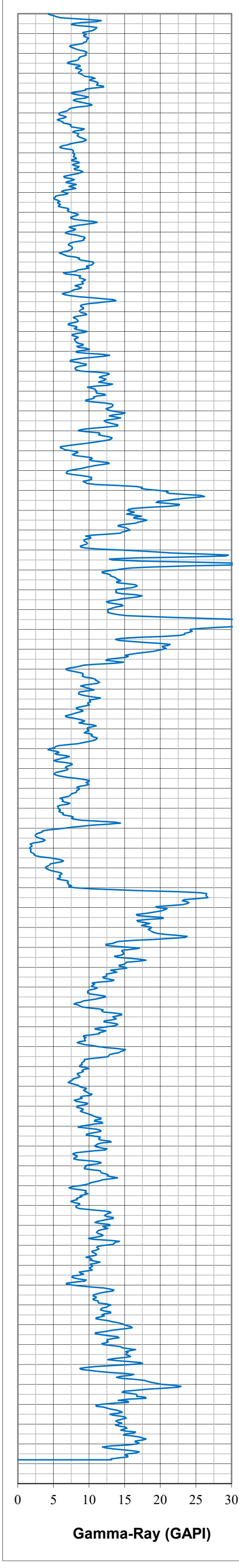
Well FA2 Flow



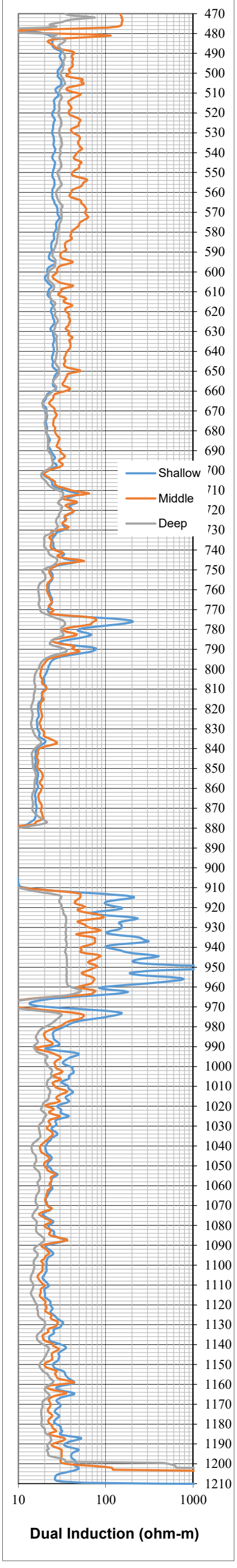
Well FA-2 XY Caliper



Well FA-2 Gamma Ray

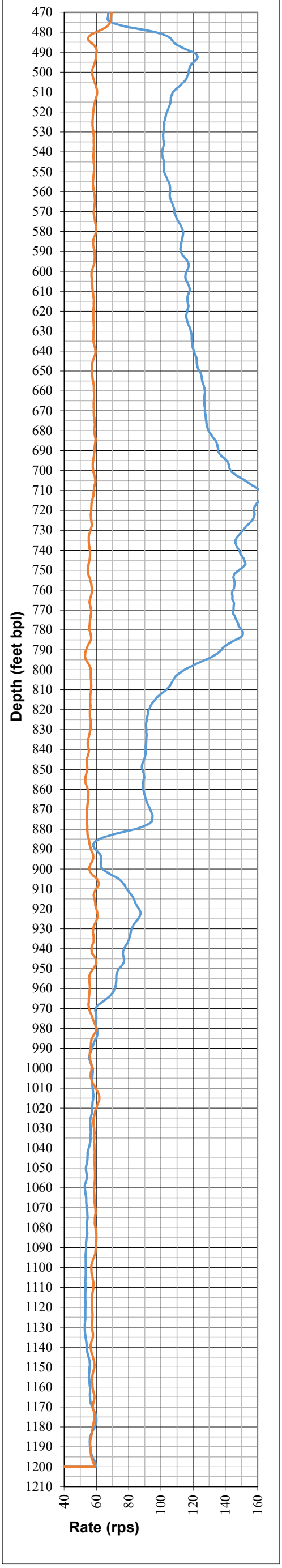


Well FA-2 Dual Induction

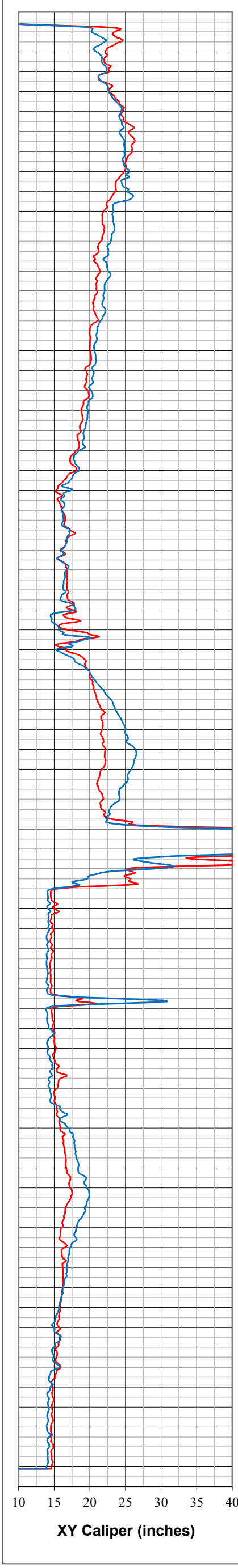


Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-2

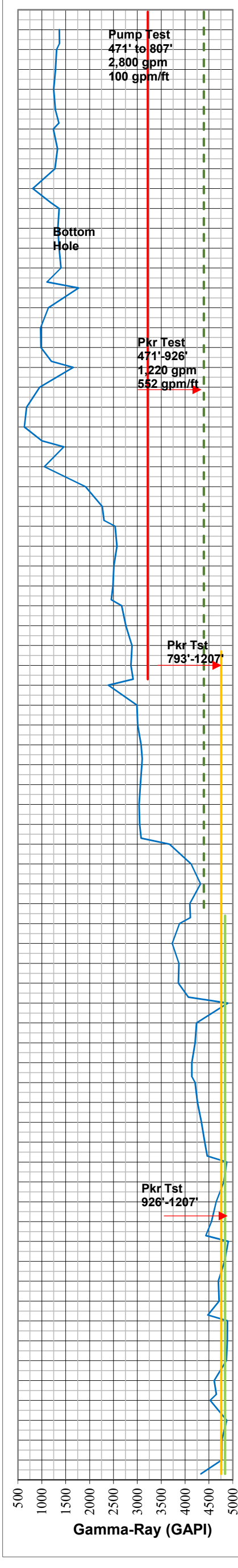
Well FA2 Flow



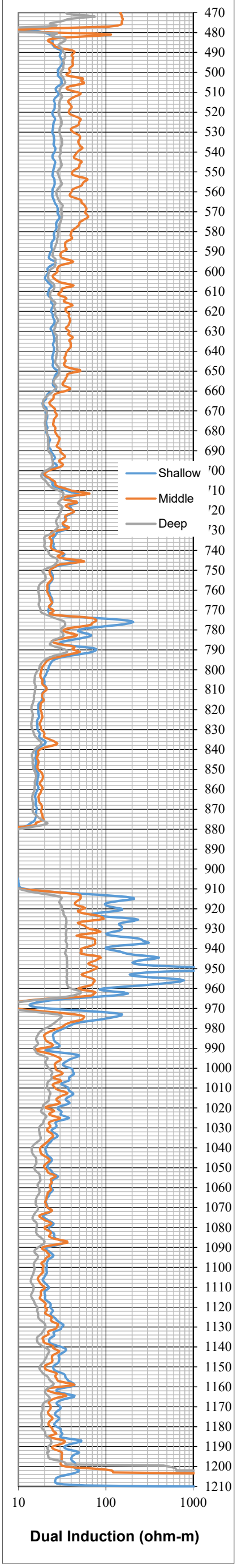
Well FA-2 XY Caliper



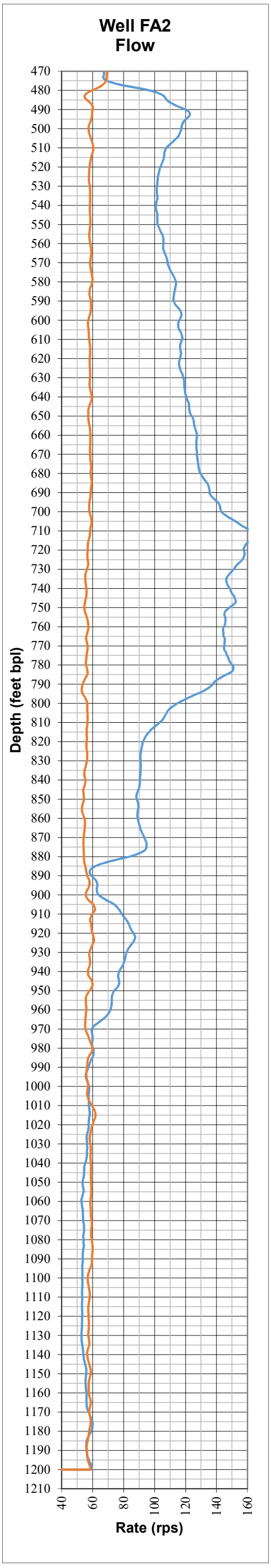
Well FA-2 Field Conductivity

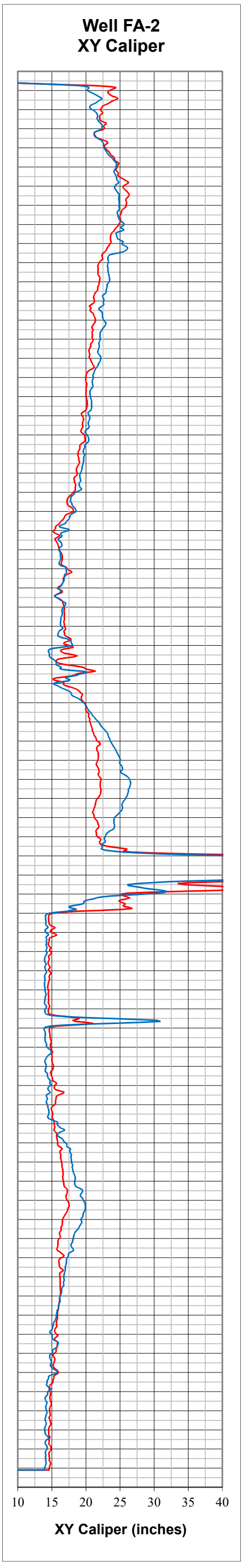


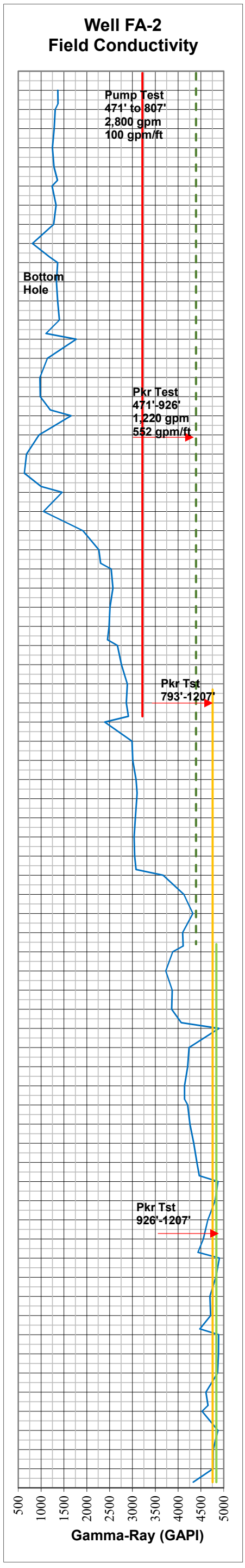
Well FA-2 Dual Induction

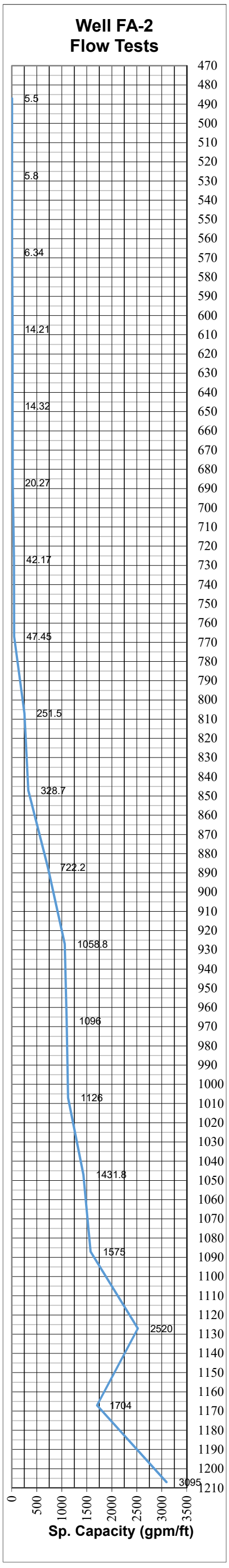


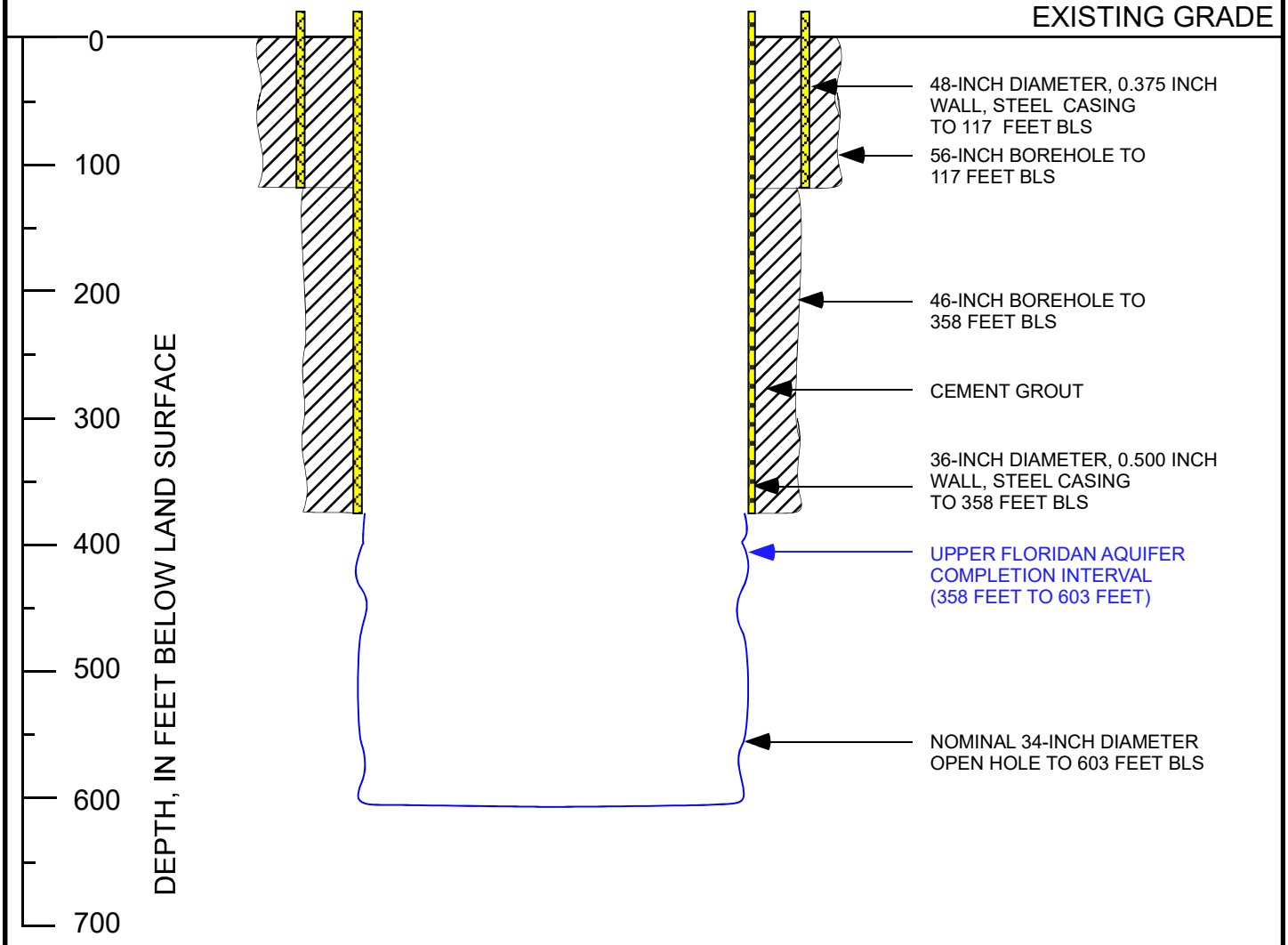
Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-2









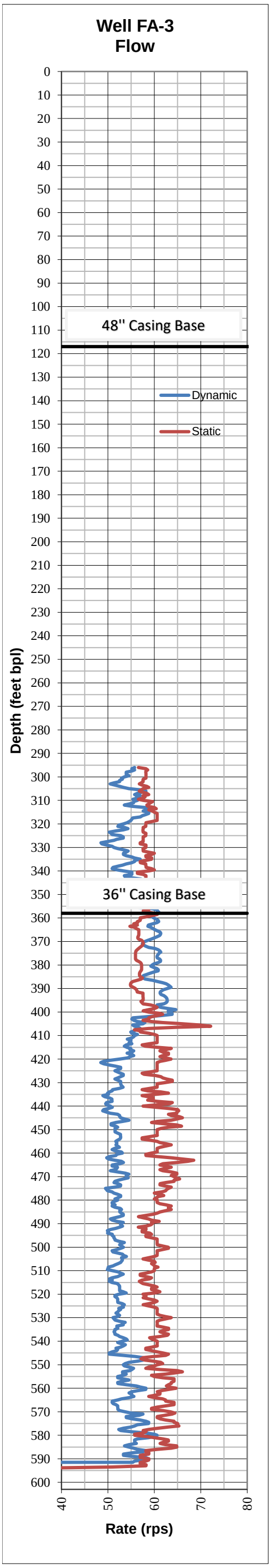


JLA Geosciences, Inc.

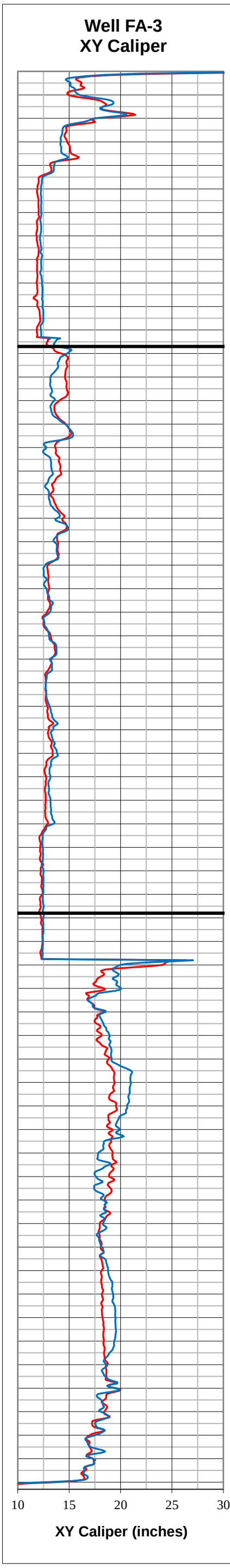
LEGEND: CEMENT GROUT; OPEN HOLE; STEEL WELL CASING	SCALE: AS SHOWN	DATE: 02/05/2017	
	DRAWN BY: CFS	DWG #:	
PROJECT SITE: FLORIDA POWER AND LIGHT OKEECHOBEE CLEAN ENERGY CENTER WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1		PROJECT NO: 16-031	
FIGURE TITLE: FA-3 WELL CONSTRUCTION DIAGRAM		FIGURE NO: 2	

Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-3

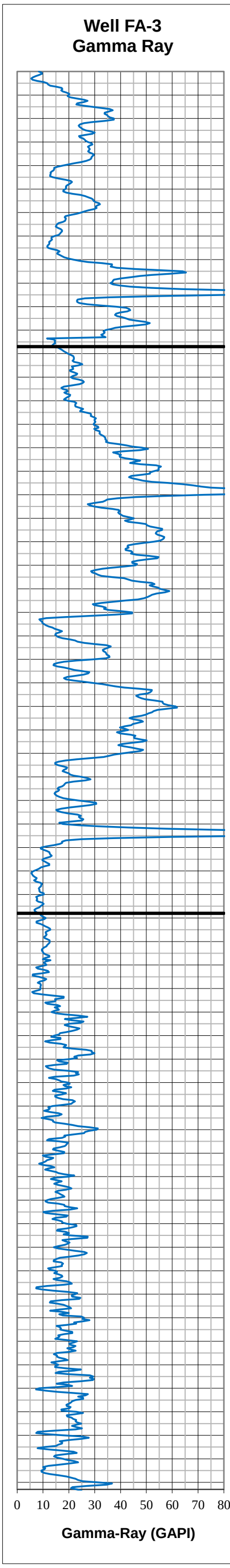
Well FA-3 Flow



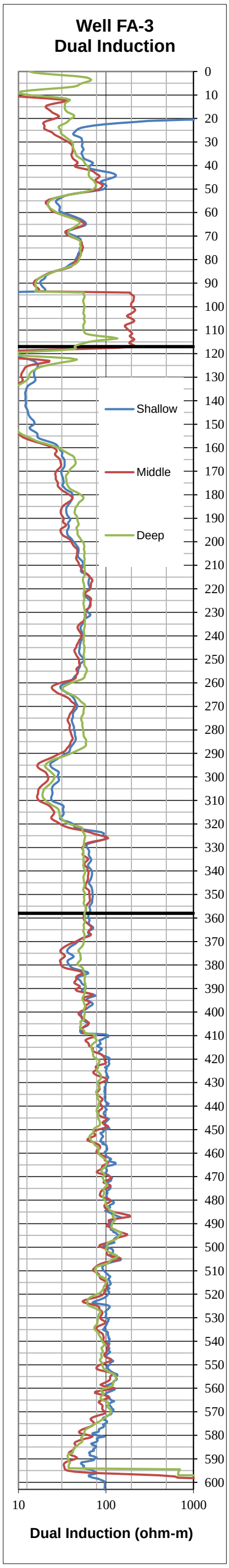
Well FA-3 XY Caliper



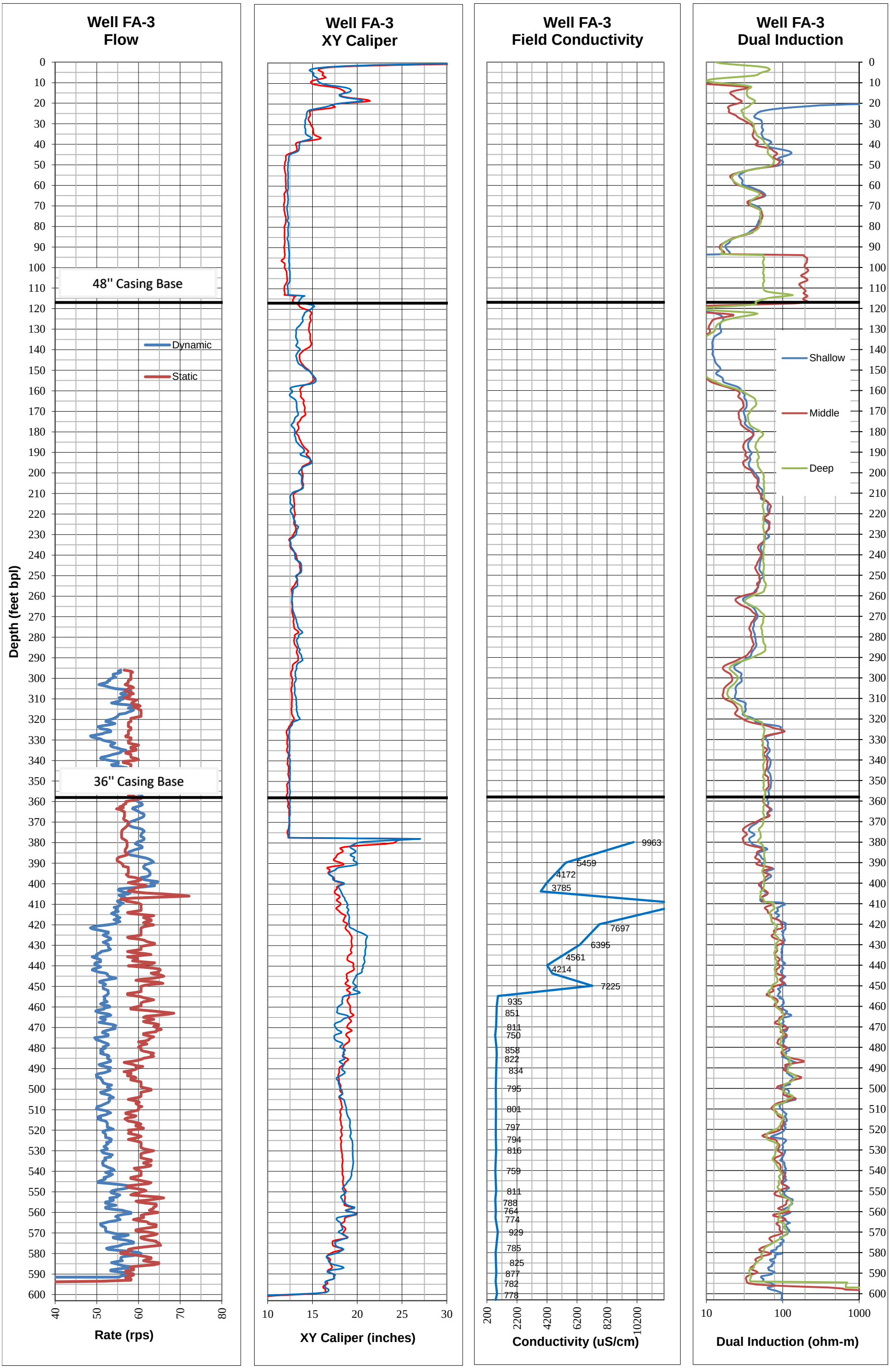
Well FA-3 Gamma Ray



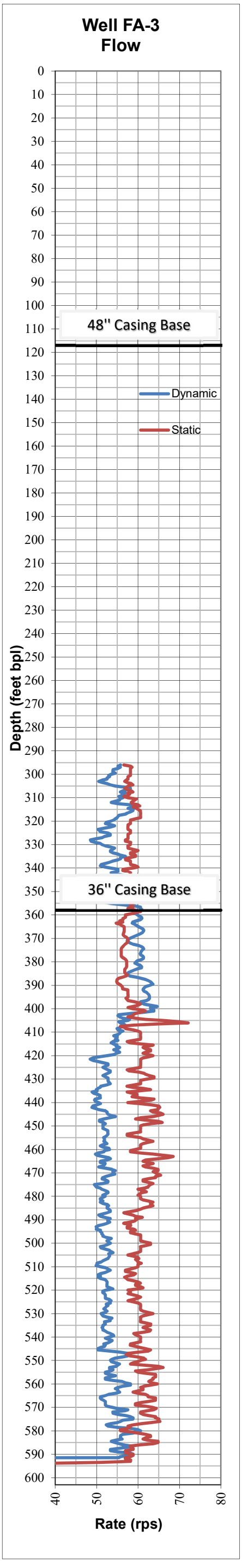
Well FA-3 Dual Induction

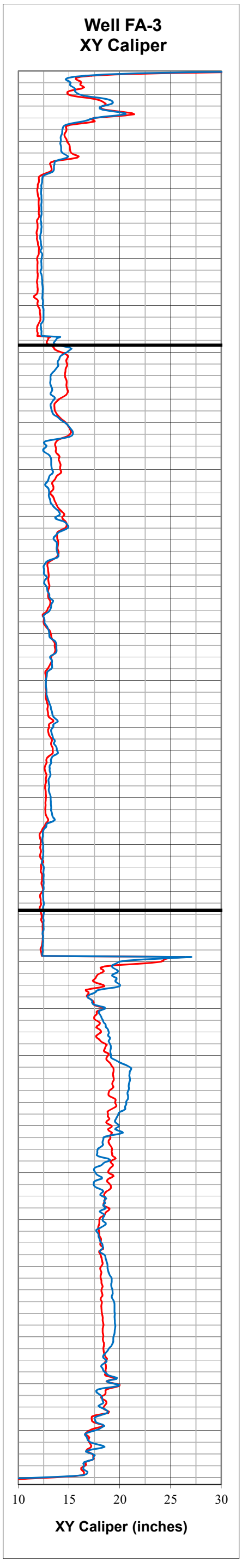


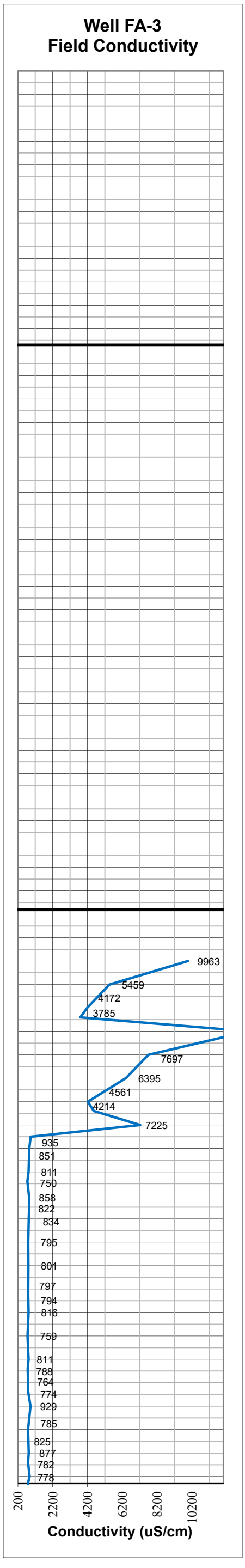
Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-3

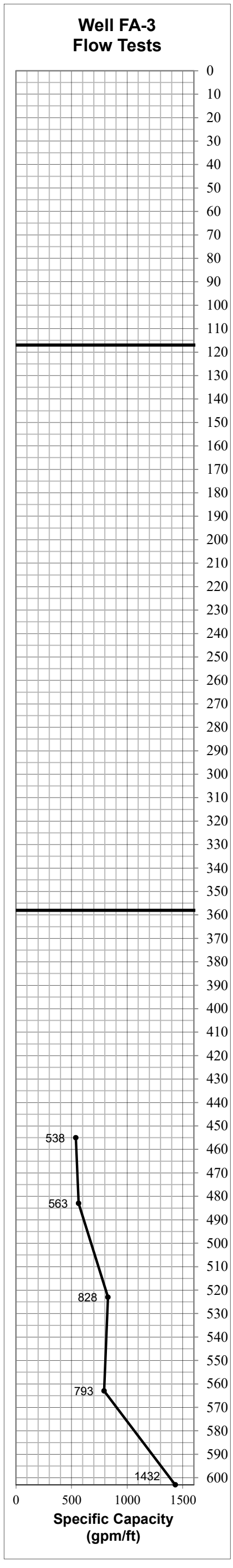


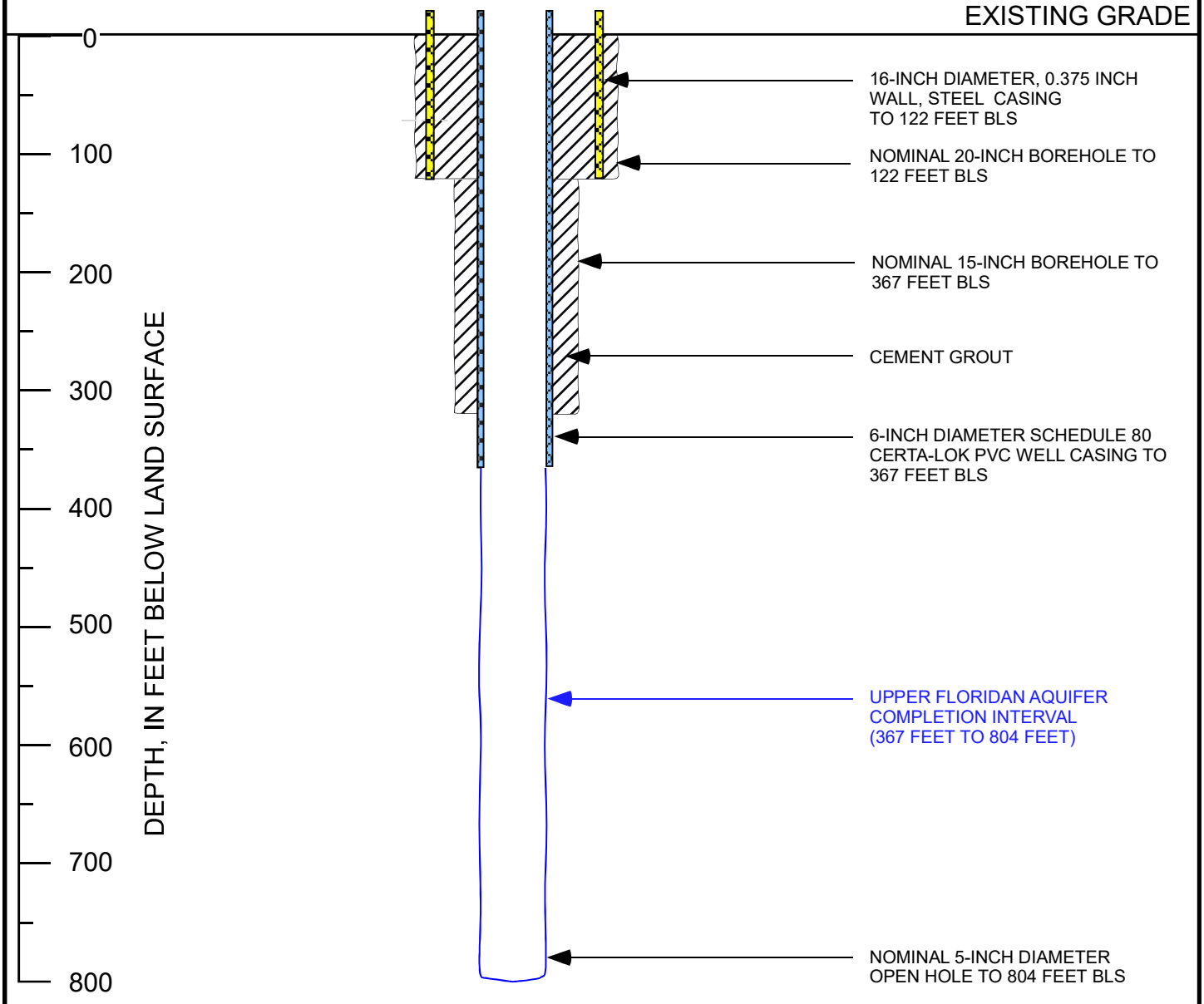
Geophysical Log Plots and Field Water Quality Data, FPL OCEC Production Well FA-3







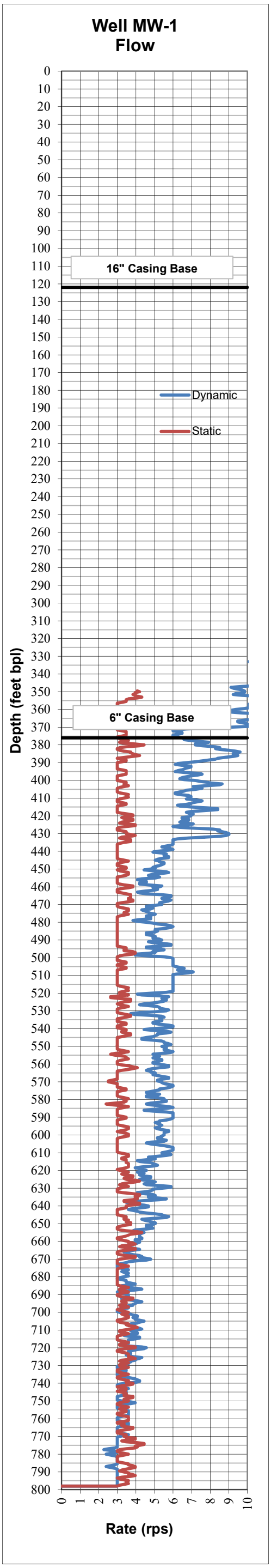


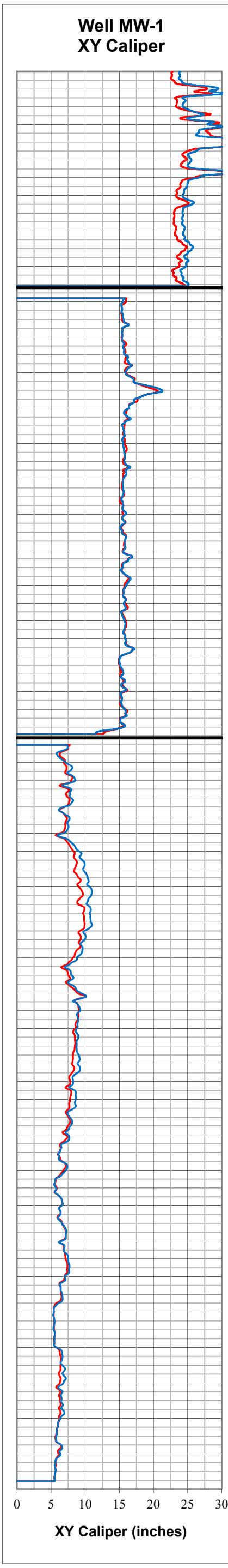


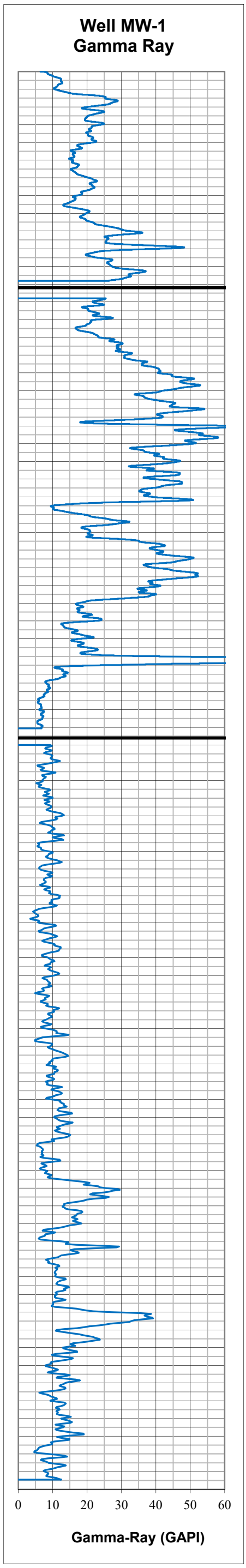
JLA Geosciences, Inc.

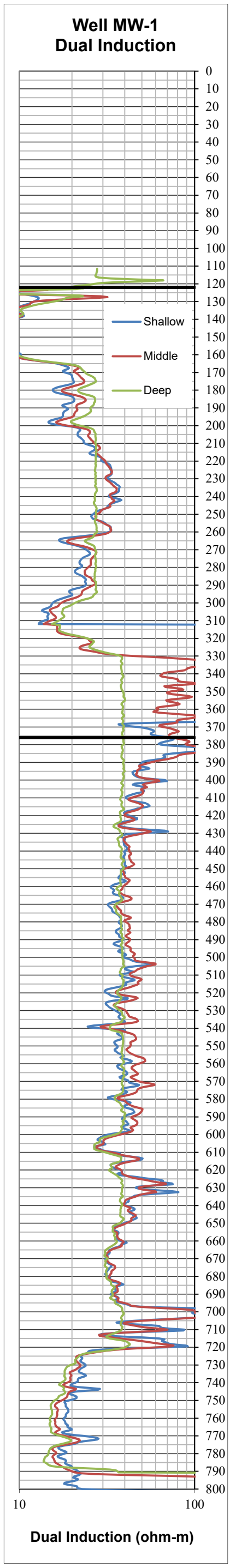
LEGEND: CEMENT GROUT; PVC WELL CASING; STEEL WELL CASING; OPEN HOLE	SCALE: AS SHOWN	DATE: 02/05/2017	
	DRAWN BY: CFS	DWG #:	
PROJECT SITE: FLORIDA POWER AND LIGHT OKEECHOBEE CLEAN ENERGY CENTER WELL CONSTRUCTION AND TESTING OF FA-1, FA-2 (APPZ), FA-3, FA-4, & MW-1		PROJECT NO: 16-031	
FIGURE TITLE: MW-1 WELL CONSTRUCTION DIAGRAM		FIGURE NO: 2	

Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1

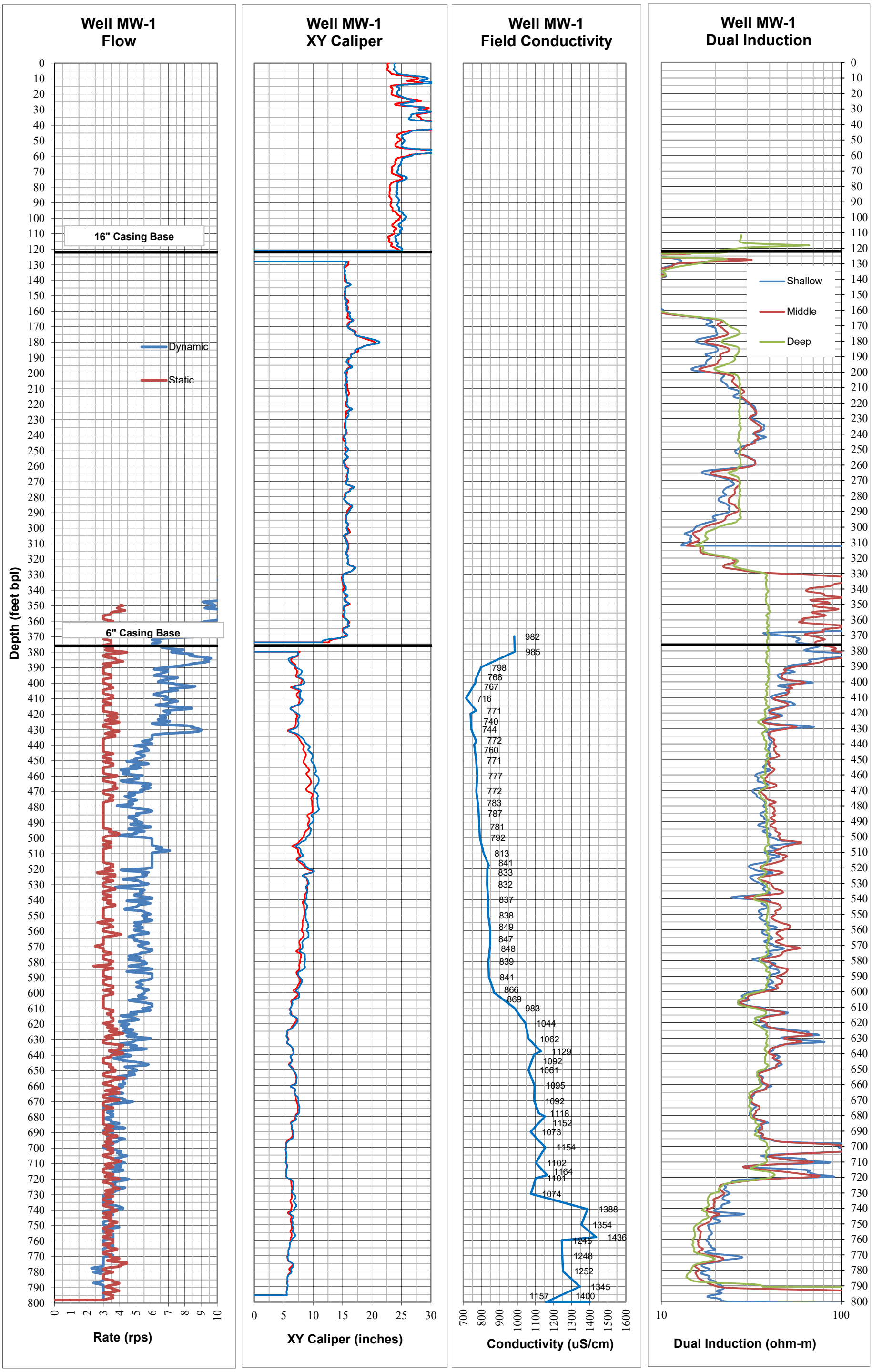




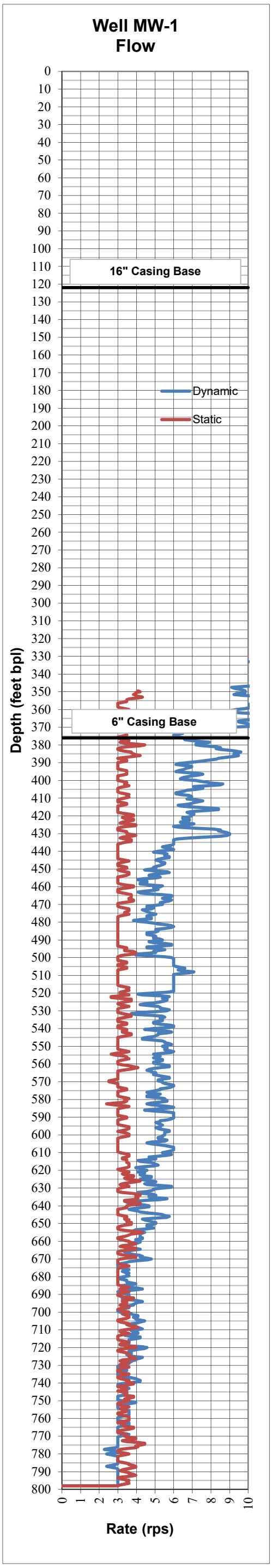


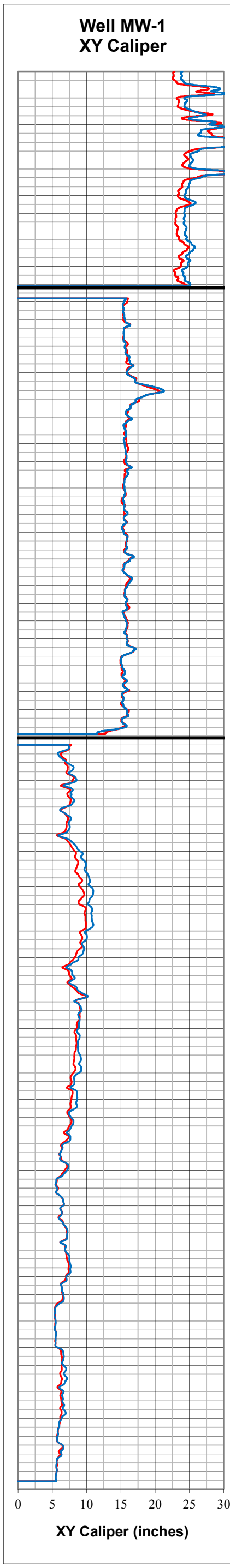


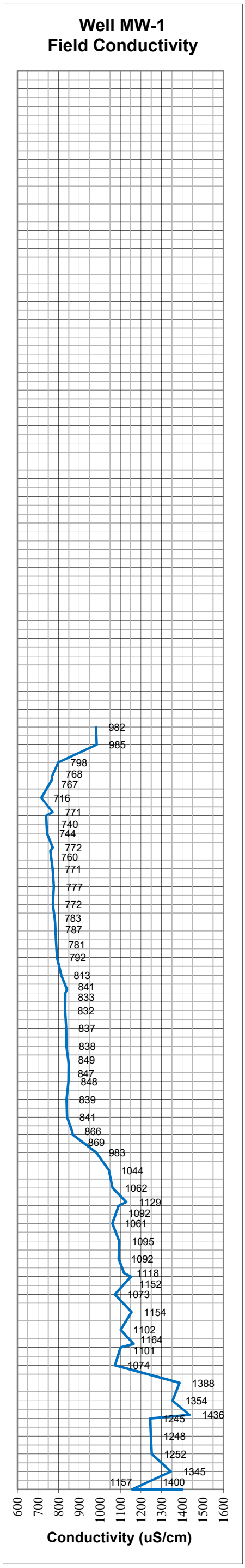
Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1

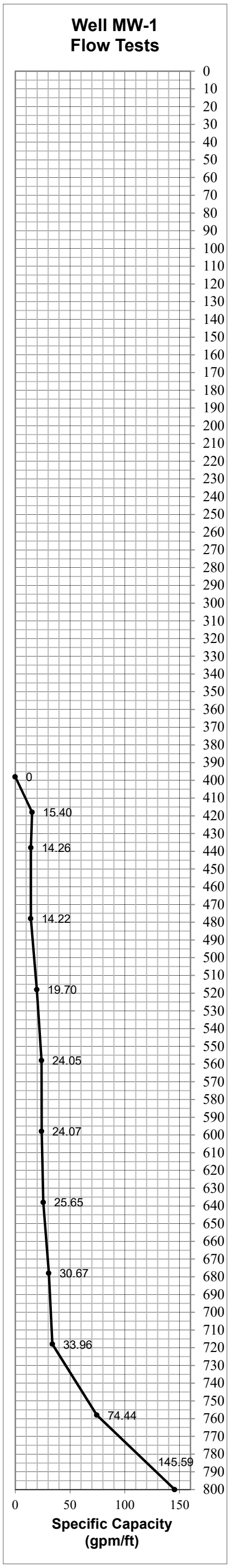


Geophysical Log Plots and Field Water Quality Data, FPL OCEC Monitor Well MW-1









Attachment 3:

APT Field Data

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/4/2017 10:05			36444000	0		
4/4/2017 10:10	5.97	38.11		0		
4/4/2017 10:37	5.96	38.12		0		
4/4/2017 11:25	5.96	38.12		0		
4/4/2017 11:45	5.96	38.12		0		11:52 open valve; 11:54; 5.89
						*Pump on at 12:00
4/4/2017 12:00	24.50	19.58			58.5	
4/4/2017 12:00	26.83	17.25				Initial flow= 2985 GPM
4/4/2017 12:00	28.35	15.73				
4/4/2017 12:01	28.30	15.78				
4/4/2017 12:01	30.20	13.88				
4/4/2017 12:01	31.70	12.38				
4/4/2017 12:01	32.23	11.85				
4/4/2017 12:02	33.34	10.74				
4/4/2017 12:02	34.25	9.83				
4/5/2017 12:03	34.78	9.30				
4/5/2017 12:03	40.90	3.18				
4/5/2017 12:04	48.40	-4.32				
4/5/2017 12:04	49.10	-5.02				

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/5/2017 12:05	51.05	-6.97				
4/5/2017 12:06	52.92	-8.84				
4/5/2017 12:07	53.74	-9.66				
4/5/2017 12:08	54.27	-10.19				
4/5/2017 12:09	54.63	-10.55				
4/5/2017 12:10	54.90	-10.82				
4/5/2017 12:11	55.20	-11.12				
4/5/2017 12:12	55.41	-11.33				
4/5/2017 12:13	55.61	-11.53				
4/5/2017 12:14	55.72	-11.64				
4/5/2017 12:15	55.88	-11.80				
4/4/2017 12:23	56.44	-12.36			58.1	
4/4/2017 12:27	57.23	-13.15				12:24 increase htz to 58.50
4/4/2017 12:30	57.60	-13.52		2960	59.0	
4/4/2017 12:42	58.31	-14.23		2975	59.2	**12:33 Collect WQ**
4/4/2017 12:43	58.50	-14.42		2960		12:30--> increase Pump @ 59 Hz
4/4/2017 12:45	58.83	-14.75				
4/4/2017 12:48	58.99	-14.91		2960		

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/4/2017 12:58	59.09	-15.01		2960	59.2	
4/4/2017 13:00	59.18	-15.10				
4/4/2017 13:04	59.31	-15.23		2962.5		
4/4/2017 13:14	59.41	-15.33		2964		
4/4/2017 13:25	59.50	-15.42		2956		
4/4/2017 13:33	59.57	-15.49		2960		
4/4/2017 13:58	59.62	-15.54		2960		
4/4/2017 14:00	59.68	-15.60		2960		
4/4/2017 14:13	59.80	-15.72		2953		
4/4/2017 14:30	59.86	-15.78		2953		
4/4/2017 15:00	59.91	-15.83		2953		
4/4/2017 15:11				2953		
4/4/2017 15:30				2953		
4/4/2017 16:00	59.89	-15.81		2953		
4/4/2017 16:08				2953		Begins storming
4/4/2017 17:00	60.06	-15.98				at 5:30
4/4/2017 17:37				2956		
4/4/2017 17:43	60.06	-15.98				**17:48 COLLECT FIELD WQ**

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/4/2017 17:52				2951		
4/4/2017 19:07				2963		
4/4/2017 19:16	60.11	-16.03				19:20 COLLECT FIELD WQ
4/4/2017 20:15				2963		
4/4/2017 20:24	60.15	-16.07				
4/4/2017 21:27	60.19	-16.11		2969	60.69	21:35 Rate increase to 2969 GPM from 59.2 to 59.7
4/4/2017 21:38				2968		
4/4/2017 21:43				2969		
4/4/2017 22:51				2971	59.7	
4/4/2017 22:55	60.75	-16.67				
4/4/2017 23:51				2971		
4/5/2017 0:02	60.78	-16.70				23:58 COLLECT FIELD WQ
4/5/2017 0:57				2970		
4/5/2017 1:00	60.76	-16.68				
4/5/2017 2:05	60.76	-16.68		2970	59.7	
4/5/2017 2:41	60.78	-16.70	39048000	2970	59.7	
4/5/2017 3:31	60.80	-16.72		2970	59.7	
4/5/2017 4:13	60.90	-16.82		2970	59.7	

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/5/2017 5:25	60.86	-16.78	39535000	2970	59.7	05:42 COLLECT FIELD WQ
4/5/2017 6:10	60.80	-16.72	39671000	2970	59.7	
4/5/2017 6:50	60.81	-16.73		2970	59.7	
4/5/2017 7:57	60.85	-16.77		2972	59.7	
4/5/2017 9:11	60.81	-16.73		2971	59.7	
4/5/2017 10:23	60.80	-16.72		2972	59.7	10:49 COLLECT FIELD WQ
4/5/2017 11:50	60.81	-16.73		2970	59.7	12:00 COLLECT FIELD WQ
4/5/2017 13:19	60.82	-16.74		2970	59.7	
4/5/2017 14:17	60.79	-16.71		2970	59.7	
4/5/2017 15:13	60.80	-16.72		2973	59.7	
4/5/2017 16:10	60.75	-16.67		2966	59.7	
4/5/2017 17:06	60.79	-16.71		2966	59.7	
4/5/2017 18:09	60.74	-16.66		2970	59.7	18:10 COLLECT FIELD WQ
4/5/2017 19:34	60.76	-16.68			59.7	
4/5/2017 20:32	60.84	-16.76		2970	59.7	
4/5/2017 20:57				2970		
4/5/2017 21:01	60.86	-16.78			59.7	
4/5/2017 22:20	60.84	-16.76		2969	59.7	

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/5/2017 23:05	60.86	-16.78		2970	59.7	
4/6/2017 0:06	60.87	-16.79		2970		00:05 COLLECT FIELD WQ
4/6/2017 0:52	60.84	-16.76		2969	59.7	Fueling up generator
4/6/2017 1:44	60.84	-16.76		2974	59.7	
4/6/2017 2:26	60.84	-16.76		2965	59.7	
4/6/2017 3:09	60.80	-16.72		2971	59.7	
4/6/2017 4:01	60.80	-16.72		2966	59.7	
4/6/2017 5:00	60.81	-16.73		2971	59.7	
4/6/2017 6:00	60.80	-16.72		2967	59.7	06:03 COLLECT FIELD WQ
4/6/2017 7:23	60.82	-16.74		2965	59.7	
4/6/2017 8:21	60.82	-16.74		2964	59.7	
4/6/2017 12:32	60.85	-16.77		2968	59.7	
4/6/2017 13:54	60.79	-16.71		2971	59.7	14:06 COLLECT FIELD WQ
4/6/2017 15:22	60.80	-16.72		2967	59.7	
4/6/2017 16:21	60.78	-16.70		2969	59.7	
4/6/2017 17:22	60.80	-16.72		2967	59.7	
4/6/2017 20:22	60.87	-16.79		2969	59.7	
4/6/2017 21:02	60.90	-16.82		2967	59.7	

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/6/2017 22:06	60.95	-16.87		2971	59.7	
4/6/2017 22:48	60.96	-16.88		2969	59.7	
4/6/2017 23:54				2969	59.7	
4/7/2017 0:04	61.00	-16.92		2965	59.7	**00:10 COLLECT FIELD WQ**
4/7/2017 0:47	60.99	-16.91		2965	59.7	
4/7/2017 1:35				2973	59.7	
4/7/2017 2:43	60.97	-16.89		2968	59.7	
4/7/2017 2:51	60.98	-16.90			59.7	*needle (flowmeter) was bouncing
4/7/2017 3:34	60.95	-16.87		2974	59.7	
4/7/2017 4:22	60.95	-16.87		2973	59.7	
4/7/2017 5:15	60.94	-16.86		2973	59.7	
4/7/2017 6:13	60.94	-16.86		2967	59.7	
4/7/2017 6:57	60.98	-16.90		2967	59.7	*Zachary, Morgan, etc.,arrived onsite ~ 6:00
4/7/2017 8:11				2961		*8:00 Pace onsite to collect lab WQ
4/7/2017 8:42	60.98	-16.90		2962	59.7	**08:26 COLLECT FIELD WQ**
4/7/2017 10:02	60.98	-16.90		2965	59.7	**09:00 COLLECT LAB WQ**
4/7/2017 12:10	59.60	-15.52		2965		
4/7/2017 12:10	56.30	-12.22		2965		

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/7/2017 12:10	39.00	5.08		2965		
4/7/2017 12:11	32.80	11.28		0		
4/7/2017 12:11	28.60	15.48		0		
4/7/2017 12:11	24.30	19.78		0		
4/7/2017 12:11	21.30	22.78		0		
4/7/2017 12:12				0		
4/7/2017 12:12	14.60	29.48		0		
4/7/2017 12:13	14.00	30.08		0		
4/7/2017 12:13	13.05	31.03		0		
4/7/2017 12:14	12.04	32.04		0		
4/7/2017 12:14	12.06	32.02		0		
4/7/2017 12:15	11.60	32.48		0		
4/7/2017 12:16	10.98	33.10		0		
4/7/2017 12:17	10.59	33.49		0		
4/7/2017 12:18	21.00	23.08		0		
4/7/2017 12:19	9.90	34.18		0		
4/7/2017 12:20	9.65	34.43		0		
4/7/2017 12:21	9.40	34.68		0		

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/7/2017 12:22	9.25	34.83		0		
4/7/2017 12:23	9.03	35.05		0		
4/7/2017 12:24	8.89	35.19		0		
4/7/2017 12:25	7.78	36.30		0		
4/7/2017 12:25	7.76	36.32		0		
4/7/2017 12:30	8.28	35.80		0		
4/7/2017 12:35	7.88	36.20		0		
4/7/2017 12:40	7.64	36.44		0		
4/7/2017 12:45	7.40	36.68		0		
4/7/2017 12:50	7.25	36.83		0		
4/7/2017 12:55	7.12	36.96		0		
4/7/2017 13:00	7.03	37.05		0		
4/7/2017 13:05	6.91	37.17		0		
4/7/2017 13:10	6.84	37.24		0		
4/7/2017 13:20	6.77	37.31		0		
4/7/2017 13:30	6.60	37.48		0		
4/7/2017 13:40	6.55	37.53		0		
4/7/2017 13:50	6.44	37.64		0		

FA-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	40.615
Depth of Trans (bmp)	31.072
Elev of trans (ft NAVD 88)	9.543

Start Totalizer	Final Totalizer	Total Gallons Pumped
36444000	49285975	12841975

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Totalizer (gal)	Pump Rate (gpm)	Pump Hertz	Comments
4/7/2017 14:00	6.40	37.68		0		
4/7/2017 14:10	6.38	37.70		0		
4/7/2017 14:40	6.25	37.83		0		
4/7/2017 15:10	6.21	37.87		0		
4/7/2017 15:40	6.13	37.95		0		
4/7/2017 16:10	6.10	37.98		0		
4/7/2017 16:40	6.10	37.98		0		
4/7/2017 17:10	6.04	38.04		0		
4/7/2017 17:57	6.01	38.07		0		
4/7/2017 19:06	6.00	38.08		0		
4/8/2017 10:39	6.05	38.03		0		
4/8/2017 12:30	6.07	38.01		0		

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/4/2017 8:30	38.55	3.16	39.205	1.41	
	38.54	3.17	39.193	1.422	
4/4/2017 12:01	38.53	3.18	39.195	1.42	
	39.48	3.23	39.185	1.43	
4/4/2017 12:01					
4/4/2017 12:01	38.52	3.19	39.475	1.14	
4/4/2017 12:02	38.52	3.19	39.205	1.41	
4/4/2017 12:03	38.53	3.18	39.205	1.41	
4/4/2017 12:03	38.535	3.175	39.205	1.41	
4/4/2017 12:03	38.53	3.18	39.205	1.41	
4/4/2017 12:04	38.54	3.17	39.205	1.41	
4/4/2017 12:04	38.54	3.17	39.2	1.415	
4/5/2017 12:05	38.53	3.18	39.205	1.41	
4/4/2017 12:06	38.53	3.18	39.205	1.41	
4/4/2017 12:07	38.53	3.18	39.205	1.41	
4/4/2017 12:07	38.53	3.18	39.2	1.415	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/4/2017 12:08	38.52	3.19	39.195	1.42	
4/4/2017 12:08	38.52	3.19	39.205	1.41	
4/4/2017 12:09	38.52	3.19	39.195	1.42	
4/4/2017 12:10	38.53	3.18	39.205	1.41	
4/4/2017 12:11	38.53	3.18	39.205	1.41	
4/4/2017 12:12	38.53	3.18	39.195	1.42	
4/4/2017 12:13	38.53	3.18	39.2	1.415	
4/4/2017 12:14	38.53	3.18	39.195	1.42	
4/4/2017 12:15	38.53	3.18	39.205	1.41	
4/4/2017 12:20	38.53	3.18	39.195	1.42	
4/4/2017 12:25	38.53	3.18	39.205	1.41	
4/4/2017 12:30	38.53	3.18	39.205	1.41	
4/4/2017 12:35	38.52	3.19	39.19	1.425	
4/4/2017 12:40	38.52	3.19	39.195	1.42	
4/4/2017 12:45	38.52	3.19	39.195	1.42	
4/4/2017 12:50	38.52	3.19	39.205	1.41	
4/4/2017 12:55	38.51	3.2	39.19	1.425	
4/4/2017 13:00	38.52	3.19	39.195	1.42	
4/4/2017 13:10	38.52	3.19	39.19	1.425	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/4/2017 13:20	38.52	3.19	39.2	1.415	
4/4/2017 13:30	38.52	3.19	39.205	1.41	
4/4/2017 13:40	38.52	3.19	39.2	1.415	
4/4/2017 13:50	38.51	3.2	39.195	1.42	
4/4/2017 14:00	38.51	3.2	39.195	1.42	
4/4/2017 14:30	38.51	3.20	39.21	1.41	
4/4/2017 15:00	38.53	3.18	39.21	1.41	
4/4/2017 15:30	38.53	3.18	39.23	1.39	
4/4/2017 16:00	38.54	3.17		1.39	16:20 Begins rainging
4/4/2017 17:20	38.51	3.20	39.17	1.45	
			39.15	1.46	
4/4/2017 19:00	38.48	3.23	39.15	1.47	
4/4/2017 20:08	38.45	3.26	39.12	1.50	
4/4/2017 21:18	38.42	3.29	39.11	1.51	
4/4/2017 22:41	38.42	3.29	39.10	1.52	
4/4/2017 23:41	38.42	3.29	39.09	1.53	
4/5/2017 0:47	38.42	3.29	39.11	1.51	
4/5/2017 1:29	38.43	3.28	39.11	1.51	
4/5/2017 2:34	38.43	3.28	39.12	1.50	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/5/2017 3:23	38.45	3.26	39.11	1.51	
4/5/2017 4:05	38.46	3.25	39.15	1.47	
4/5/2017 5:20	38.43	3.28	39.13	1.49	
4/5/2017 6:05	38.45	3.26	39.12	1.50	
4/5/2017 6:44	38.43	3.28	39.11	1.51	
4/5/2017 7:47	38.43	3.28	39.10	1.52	
4/5/2017 9:02	38.42	3.29	39.10	1.52	
4/5/2017 9:56	38.42	3.29	39.10	1.52	
4/5/2017 11:40	38.41	3.30	39.10	1.52	
4/5/2017 13:09	38.41	3.30	39.11	1.51	
4/5/2017 14:09	38.45	3.26	39.13	1.49	
4/5/2017 15:04	38.46	3.25	39.16	1.46	
4/5/2017 16:02	38.46	3.25	39.18	1.44	
4/5/2017 16:54	38.47	3.24	39.18	1.44	
4/5/2017 17:57	38.44	3.27	39.18	1.44	
4/5/2017 19:20	38.43	3.28	39.13	1.49	
4/5/2017 20:41	38.41	3.30	39.09	1.53	
4/5/2017 21:04	38.37	3.34	39.11	1.51	
4/5/2017 22:15	38.36	3.35	39.04	1.58	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/5/2017 22:59	38.35	3.36	39.05	1.57	
4/5/2017 23:53	38.35	3.36	39.03	1.59	
4/6/2017 0:45	38.36	3.35	39.05	1.57	
4/6/2017 1:36	38.38	3.33	39.09	1.53	
4/6/2017 2:20	38.40	3.31	39.10	1.52	
4/6/2017 2:58	38.42	3.29	39.13	1.49	
4/6/2017 3:57	38.43	3.28	39.14	1.48	
4/6/2017 4:54	38.43	3.28	39.14	1.48	
4/6/2017 5:53	38.44	3.27	39.14	1.48	
4/6/2017 7:08	38.40	3.31	39.09	1.53	
4/6/2017 8:07	38.39	3.32	39.09	1.53	
4/6/2017 9:17	38.39	3.32	39.09	1.53	
4/6/2017 12:21	38.39	3.32	39.08	1.54	
4/6/2017 13:41	38.43	3.28	39.14	1.48	
4/6/2017 15:14	38.44	3.27	39.16	1.46	
4/6/2017 16:12	38.45	3.26	39.18	1.44	
4/6/2017 17:12	38.45	3.26	39.17	1.45	
4/6/2017 20:07	38.38	3.33	39.11	1.51	
4/6/2017 20:56	38.38	3.33	39.10	1.52	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/6/2017 21:53	38.35	3.36	39.08	1.54	
4/6/2017 22:38	38.32	3.39	39.03	1.59	
4/6/2017 23:45	38.28	3.43	38.99	1.63	
4/7/2017 0:41	38.30	3.41	38.99	1.63	
4/7/2017 1:30	38.32	3.39	39.02	1.60	
4/7/2017 2:36	38.33	3.38	39.04	1.58	
4/7/2017 3:25	38.33	3.38	39.04	1.58	
4/7/2017 4:16	38.36	3.35	39.05	1.57	
4/7/2017 5:09	38.36	3.35	39.04	1.58	
4/7/2017 6:07	38.34	3.37	39.04	1.58	*Zachary, Morgan, etc. arrived onsite ~ 06:00
4/7/2017 6:49	38.30	3.41	38.99	1.63	
4/7/2017 7:49	38.29	3.42	38.97	1.65	
4/7/2017 9:35	38.23	3.48	38.93	1.69	
4/7/2017 10:57	38.20	3.51	38.91	1.71	
4/7/2017 11:51	38.23	3.48			
4/7/2017 11:53			38.95	1.67	
4/7/2017 11:55	38.22	3.49			
4/7/2017 11:56			38.93	1.69	
4/7/2017 12:05			38.92	1.70	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/7/2017 12:06	38.21	3.50	38.92	1.70	
4/7/2017 12:10	38.21	3.50	38.92	1.70	*12:10 hrs stop APT and start recovery
4/7/2017 12:10	38.21	3.50	38.92	1.70	
4/7/2017 12:10	38.21	3.50	38.92	1.70	
4/7/2017 12:10	38.21	3.50	38.92	1.70	
4/7/2017 12:11	38.21	3.50	38.92	1.70	
4/7/2017 12:11	38.21	3.50	38.92	1.70	
4/7/2017 12:11	38.21	3.50	38.92	1.70	
4/7/2017 12:11	38.21	3.50	38.92	1.70	
4/7/2017 12:12	38.21	3.50	38.92	1.70	
4/7/2017 12:12	38.21	3.50	38.92	1.70	
4/7/2017 12:12	38.21	3.50	38.92	1.70	
4/7/2017 12:12	38.21	3.50	38.92	1.70	
4/7/2017 12:13	38.21	3.50	38.92	1.70	
4/7/2017 12:13	38.22	3.49	38.92	1.70	
4/7/2017 12:13	38.22	3.49	38.92	1.70	
4/7/2017 12:13	38.22	3.49	38.92	1.70	
4/7/2017 12:14	38.22	3.49	38.92	1.70	
4/7/2017 12:14	38.22	3.49	38.92	1.70	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/7/2017 12:15	38.22	3.49	38.92	1.70	
4/7/2017 12:15	38.22	3.49	38.92	1.70	
4/7/2017 12:16	38.22	3.49	38.92	1.70	
4/7/2017 12:16	38.22	3.49	38.92	1.70	
4/7/2017 12:17	38.22	3.49	38.92	1.70	
4/7/2017 12:17	38.22	3.49	38.94	1.68	
4/7/2017 12:18	38.23	3.48	38.94	1.68	
4/7/2017 12:19	38.23	3.48	38.95	1.67	
4/7/2017 12:20	38.23	3.48	38.94	1.68	
4/7/2017 12:20	38.22	3.49	38.94	1.68	
4/7/2017 12:21	38.22	3.49	38.94	1.68	
4/7/2017 12:21	38.23	3.48	38.94	1.68	
4/7/2017 12:22	38.23	3.48	38.95	1.67	
4/7/2017 12:23	38.23	3.48	38.95	1.67	
4/7/2017 12:24	38.23	3.48	38.95	1.67	
4/7/2017 12:25	38.23	3.48	38.94	1.68	
4/7/2017 12:26	38.23	3.48	38.94	1.68	
4/7/2017 12:26	38.23	3.48	38.94	1.68	
4/7/2017 12:27	38.23	3.48	38.94	1.68	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe	WL Probe	WL Probe	WL Probe	
	Rdg	Rdg	Rdg	Rdg	
	(ft NAVD 88)	(ft bmp)	(ft NAVD 88)	(ft bmp)	
4/7/2017 12:28	38.23	3.48	38.95	1.67	
4/7/2017 12:28	38.23	3.48	38.95	1.67	
4/7/2017 12:29	38.23	3.48	38.95	1.67	
4/7/2017 12:29	38.23	3.48	38.95	1.67	
4/7/2017 12:30	38.23	3.48	38.96	1.66	
4/7/2017 12:30	38.23	3.48	38.96	1.66	
4/7/2017 12:31	38.23	3.48	38.96	1.66	
4/7/2017 12:31	38.24	3.47	38.96	1.66	
4/7/2017 12:32	38.24	3.47	38.96	1.66	
4/7/2017 12:33	38.24	3.47	38.96	1.66	
4/7/2017 12:34	38.24	3.47	38.95	1.67	
4/7/2017 12:34	38.24	3.47	38.95	1.67	
4/7/2017 12:35	38.24	3.47	38.96	1.66	
4/7/2017 12:35	38.24	3.47	38.96	1.66	
4/7/2017 12:40	38.24	3.47	38.96	1.66	
4/7/2017 12:40	38.25	3.46	38.96	1.66	
4/7/2017 12:45	38.25	3.46	38.96	1.66	
4/7/2017 12:45	38.25	3.46	38.96	1.66	
4/7/2017 12:50	38.25	3.46	38.95	1.67	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe Rdg (ft NAVD 88)	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	WL Probe Rdg (ft bmp)	
4/7/2017 12:50	38.25	3.46	38.95	1.67	
4/7/2017 12:55	38.25	3.46	38.97	1.65	
4/7/2017 12:55	38.25	3.46	38.97	1.65	
4/7/2017 13:00	38.27	3.44	38.97	1.65	
4/7/2017 13:00	38.27	3.44	38.97	1.65	
4/7/2017 13:05	38.26	3.45	38.96	1.66	
4/7/2017 13:10	38.26	3.45	38.96	1.66	
4/7/2017 13:20	38.27	3.44	38.97	1.65	
4/7/2017 13:30	38.29	3.42	39.00	1.62	
4/7/2017 13:41	38.29	3.42	39.02	1.60	
4/7/2017 13:50	38.29	3.42	39.01	1.61	
4/7/2017 14:00	38.29	3.42	39.01	1.61	
4/7/2017 14:10	38.31	3.40	39.02	1.60	
4/7/2017 14:21	38.31	3.40	39.02	1.60	
4/7/2017 14:52	38.33	3.38	39.02	1.60	
4/7/2017 15:25	38.35	3.36	39.05	1.57	
4/7/2017 16:06	38.37	3.34	39.07	1.55	
4/7/2017 16:43	38.37	3.34	39.12	1.50	
4/7/2017 17:33	38.40	3.31	39.12	1.50	

Well FA-2

MANUAL FIELD DATA

APPZ Trans MP (ft NAVD 88)	41.71	UFA Trans MP (ft NAVD 88)	40.615
APPZ Depth of Trans (bmp)	28.645	UFA Depth of Trans (bmp)	31.072
APPZ Elev of trans (ft NAVD 88)	13.065	UFA Elev of trans (ft NAVD 88)	9.543

Date & Time	SS FLANGE (APPZ)		ANNULUS (UFA)		Comments
	WL Probe Rdg (ft NAVD 88)	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	WL Probe Rdg (ft bmp)	
4/7/2017 18:57	38.39	3.32	39.09	1.53	
4/8/2017 9:56	38.28	3.43	38.98	1.64	
4/8/2017 12:21	38.26	3.45	38.98	1.64	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/4/2017 9:10	6.956	43.216	
4/4/2017 9:25	6.956	43.216	
4/4/2017 11:35	6.947	43.207	
4/4/2017 11:40	6.947	43.207	
4/4/2017 11:45	6.947	43.207	
4/4/2017 11:55	6.947	43.207	
4/4/2017 12:00	6.948	43.208	
4/4/2017 12:00	6.948	43.208	
4/4/2017 12:00	6.948	43.208	
4/4/2017 12:01	6.948	43.208	
4/4/2017 12:01	6.948	43.208	
4/4/2017 12:01	6.948	43.208	
4/4/2017 12:01	6.948	43.208	
4/4/2017 12:02	6.948	43.208	
4/4/2017 12:02	6.948	43.208	
4/4/2017 12:03	6.948	43.208	
4/4/2017 12:03	6.948	43.208	
4/4/2017 12:04	6.942	43.202	
4/4/2017 12:04	6.942	43.202	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/4/2017 12:05	6.942	43.202	
4/4/2017 12:06	6.937	43.197	
4/4/2017 12:07	6.937	43.197	
4/4/2017 12:08	6.937	43.197	
4/4/2017 12:09	6.932	43.192	
4/4/2017 12:10	6.927	43.187	
4/4/2017 12:11	6.927	43.187	
4/4/2017 12:12	6.922	43.182	
4/4/2017 12:13	6.922	43.182	
4/4/2017 12:14	6.917	43.177	
4/4/2017 12:15	6.911	43.171	
4/4/2017 12:20	6.901	43.161	
4/4/2017 12:25	6.885	43.145	
4/4/2017 12:30	6.875	43.135	
4/4/2017 12:35	6.859	43.119	
4/4/2017 12:40	6.849	43.109	
4/4/2017 12:45	6.833	43.093	
4/4/2017 12:50	6.823	43.083	
4/4/2017 12:55	6.813	43.073	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/4/2017 13:00	6.802	43.062	
4/4/2017 13:10	6.792	43.052	
4/4/2017 13:20	6.81	43.070	
4/4/2017 13:30	6.771	43.031	
4/4/2017 13:40	6.76	43.020	
4/4/2017 13:50	6.755	43.015	
4/4/2017 14:00	6.75	43.010	
4/4/2017 14:30	6.734	42.994	
4/4/2017 14:50	6.729	42.989	
4/4/2017 15:20	6.724	42.984	
4/4/2017 15:50	6.724	42.984	
4/4/2017 16:15	6.698	42.958	Rain Started; Bad storm passed through.
4/4/2017 17:00	6.719	42.979	
4/4/2017 18:02	6.651	42.911	Heavy rain may have caused WL in manometer to raise.
4/4/2017 19:30	6.630	42.890	
4/4/2017 20:32	6.604	42.864	
4/4/2017 22:12	6.573	42.833	
4/4/2017 23:06	6.573	42.833	
4/5/2017 0:12	6.578	42.838	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/5/2017 1:08	6.589	42.849	
4/5/2017 2:12	6.594	42.854	
4/5/2017 2:47	6.656	42.916	
4/5/2017 3:36	6.625	42.885	
4/5/2017 4:32	6.625	42.885	
4/5/2017 5:38	6.625	42.885	
4/5/2017 6:20	6.656	42.916	
4/5/2017 7:08	6.594	42.854	
4/5/2017 8:18	6.573	42.833	
4/5/2017 9:20	6.573	42.833	
4/5/2017 11:09	6.583	42.843	
4/5/2017 12:22	6.583	42.843	
4/5/2017 13:31	6.609	42.869	
4/5/2017 14:27	6.625	42.885	
4/5/2017 15:23	6.641	42.901	
4/5/2017 16:22	6.651	42.911	
4/5/2017 17:20	6.656	42.916	
4/5/2017 18:26	6.635	42.895	
4/5/2017 19:40	6.604	42.864	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/5/2017 20:32	6.583	42.843	
4/5/2017 22:29	6.531	42.791	
4/5/2017 23:14	6.531	42.791	
4/6/2017 0:16	6.531	42.791	
4/6/2017 1:11	6.563	42.823	
4/6/2017 1:54	6.573	42.833	
4/6/2017 2:36	6.594	42.854	
4/6/2017 3:35	6.604	42.864	
4/6/2017 4:08	6.615	42.875	
4/6/2017 5:26	6.620	42.880	
4/6/2017 6:28	6.599	42.859	
4/6/2017 7:34	6.589	42.849	
4/6/2017 8:38	6.578	42.838	
4/6/2017 9:40	6.583	42.843	Took cover for Thunderstorm. Rain started at 09:44
4/6/2017 10:32	6.604	42.864	Reading taken after rain stopped.
4/6/2017 12:45	6.599	42.859	
4/6/2017 14:28	6.635	42.895	
4/6/2017 15:34	6.656	42.916	
4/6/2017 16:32	6.656	42.916	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/6/2017 17:34	6.656	42.916	Shift change. Changed/programmed transducers for recovery data.
4/6/2017 20:31	6.589	42.849	
4/6/2017 21:10	6.573	42.833	NOTE: Zachary pumping H_2O w/ trash pump from their laydown area to their pond. Laydown area is flooded.
4/6/2017 22:12	6.521	42.781	
4/6/2017 23:17	6.505	42.765	
4/7/2017 0:21	6.495	42.755	
4/7/2017 1:00	6.500	42.760	
4/7/2017 1:49	6.510	42.770	
4/7/2017 2:59	6.531	42.791	
4/7/2017 3:41	6.531	42.791	
4/7/2017 4:32	6.542	42.802	
4/7/2017 5:25			
4/7/2017 6:21	6.542	42.802	
4/7/2017 7:26	6.542	42.802	
4/7/2017 8:50	6.500	42.760	
4/7/2017 10:15	6.458	42.718	
4/7/2017 12:10	6.448	42.708	
4/7/2017 12:10	6.448	42.708	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/7/2017 12:10	6.448	42.708	
4/7/2017 12:10	6.448	42.708	
4/7/2017 12:11	6.448	42.708	
4/7/2017 12:11	6.448	42.708	
4/7/2017 12:11	6.448	42.708	
4/7/2017 12:11	6.448	42.708	
4/7/2017 12:12	6.448	42.708	
4/7/2017 12:12	6.453	42.713	
4/7/2017 12:12	6.453	42.713	
4/7/2017 12:13	6.453	42.713	* RECOVERY
4/7/2017 12:13	6.453	42.713	
4/7/2017 12:14	6.453	42.713	
4/7/2017 12:14	6.453	42.713	
4/7/2017 12:15	6.458	42.718	
4/7/2017 12:16	6.464	42.724	
4/7/2017 12:17	6.464	42.724	
4/7/2017 12:18	6.469	42.729	
4/7/2017 12:19	6.469	42.729	
4/7/2017 12:20	6.474	42.734	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/7/2017 12:21	6.474	42.734	
4/7/2017 12:22	6.479	42.739	
4/7/2017 12:23	6.479	42.739	
4/7/2017 12:24	6.484	42.744	
4/7/2017 12:25	6.490	42.750	
4/7/2017 12:30	6.505	42.765	
4/7/2017 12:35	6.526	42.786	
4/7/2017 12:40	6.542	42.802	
4/7/2017 12:45	6.563	42.823	
4/7/2017 12:50	6.568	42.828	
4/7/2017 12:55	6.583	42.843	
4/7/2017 13:00	6.594	42.854	
4/7/2017 13:05	6.609	42.869	
4/7/2017 13:10	6.620	42.880	
4/7/2017 13:20	6.641	42.901	
4/7/2017 13:30	6.662	42.922	
4/7/2017 13:40	6.677	42.937	
4/7/2017 13:50	6.698	42.958	
4/7/2017 14:00	6.708	42.968	

MW-1 Well MANUAL FIELD DATA

Trans MP (ft NAVD 88)	35.55
Depth of Trans (bmp)	0
Elev of trans (ft NAVD 88)	35.55

Date & Time	Manometer Rdg (ft above flange)	Manometer Rdg (ft NAVD 88)	Comments
4/7/2017 14:10	6.724	42.984	
4/7/2017 14:29	6.740	43.000	
4/7/2017 15:01	6.776	43.036	
4/7/2017 15:35	6.807	43.067	
4/7/2017 16:14	6.839	43.099	
4/7/2017 16:50	6.854	43.114	
4/7/2017 18:16	6.870	43.130	
4/7/2017 19:14	6.859	43.119	
4/8/2017 7:58	6.802	43.062	
4/8/2017 12:36	6.771	43.031	

Well FA-3 & AG WELL PUMP RATES MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/1/2017 18:44	4.08	38.26	4/1/2017 20:19	354	
4/2/2017 10:08	4.84	37.50	4/3/2017 13:21	371	
4/4/2017 9:42	3.09	39.25	4/3/2017 13:28	404	
4/4/2017 11:55	3.05	39.29	4/3/2017 13:44	442	
4/4/2017 11:56	3.05	39.29	4/4/2017 7:26	499	
			4/4/2017 9:50	440	
4/4/2017 12:00	3.06	39.28	4/4/2017 12:33	479	
4/4/2017 12:00	3.06	39.28	4/4/2017 12:57	500	
4/4/2017 12:00	3.07	39.27			
4/4/2017 12:01	3.08	39.26			
4/4/2017 12:01	3.10	39.24			
4/4/2017 12:01	3.10	39.24			
4/4/2017 12:01	3.10	39.24			
4/4/2017 12:02	3.11	39.23			
4/4/2017 12:02	3.12	39.22			
4/4/2017 12:03	3.12	39.22			
4/4/2017 12:03	3.15	39.19			
4/4/2017 12:04	3.16	39.18			
4/4/2017 12:04	3.16	39.18			

Well FA-3 & AG WELL PUMP RATES

MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/4/2017 12:05	3.18	39.16			
4/4/2017 12:06	3.21	39.13			
4/4/2017 12:07	3.24	39.10			
4/4/2017 12:08	3.26	39.08			
4/4/2017 12:09	3.28	39.06			
4/4/2017 12:10	3.31	39.03			
4/4/2017 12:11	3.32	39.02			
4/4/2017 12:12	3.33	39.01			
4/4/2017 12:13	3.36	38.98			
4/4/2017 12:14	3.37	38.97			
4/4/2017 12:15	3.39	38.95			
4/4/2017 12:20	3.48	38.86			
4/4/2017 12:25	3.55	38.79			
4/4/2017 12:30	3.61	38.73			
4/4/2017 12:35	3.67	38.67			
4/4/2017 12:40	3.76	38.58			
4/4/2017 12:45	3.76	38.58			
4/4/2017 12:50	3.81	38.53			
4/4/2017 12:55	3.82	38.52			

Well FA-3 & AG WELL PUMP RATES MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/4/2017 13:00	3.86	38.48			
4/4/2017 13:00	3.93	38.41			
4/4/2017 13:20	3.97	38.37			
4/4/2017 13:30	4.03	38.31	4/4/2017 13:33	331	
4/4/2017 13:40	4.06	38.28			
4/4/2017 13:50	4.11	38.23			
4/4/2017 14:00	4.13	38.21	4/4/2017 14:06	319	
4/4/2017 14:30	4.22	38.12			
4/4/2017 15:00	4.28	38.06	4/4/2017 15:02	316	
4/4/2017 15:30	4.33	38.01	4/4/2017 15:37	309	
4/4/2017 16:00	4.39	37.95			
4/4/2017 16:30	4.42	37.92			
4/4/2017 16:59	4.45	37.89	4/4/2017 17:03	584	
4/4/2017 18:00	4.58	37.76	4/4/2017 18:05	705	
4/4/2017 18:30	4.62	37.72	4/4/2017 18:36	707	
			4/4/2017 19:55	706	
4/4/2017 20:55	4.78	37.56	4/4/2017 21:00	722	
4/4/2017 22:29	4.87	37.47	4/4/2017 22:32	704	

Well FA-3 & AG WELL PUMP RATES MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/4/2017 23:19	4.90	37.44	4/4/2017 23:23	712	
4/5/2017 0:28	4.92	37.42	4/5/2017 0:32	716	
4/5/2017 1:26	4.92	37.42	4/5/2017 1:26	715	
4/5/2017 2:27	4.93	37.41	4/5/2017 2:25	714	
4/5/2017 3:03	4.94	37.40	4/5/2017 3:01	717	
4/5/2017 3:57	4.97	37.37	4/5/2017 3:49	719	
4/5/2017 5:14	4.96	37.38	4/5/2017 5:12	717	
4/5/2017 5:53	4.96	37.38	4/5/2017 5:51	718	
4/5/2017 6:34	4.98	37.36	4/5/2017 6:32	720	
4/5/2017 7:35	4.99	37.35	4/5/2017 7:38	718	Water Level fluctuation likely a result of AG Well pump rate variances
4/5/2017 8:49	4.94	37.40	4/5/2017 8:46	516	
4/5/2017 9:49	4.90	37.44	4/5/2017 9:46	350	
4/5/2017 11:32	4.88	37.46	4/5/2017 11:30	350	
4/5/2017 12:57	4.95	37.39	4/5/2017 12:55	648	
4/5/2017 13:55	4.88	37.46	4/5/2017 13:49	387	
4/5/2017 14:55	4.87	37.47	4/5/2017 14:52	491	
4/5/2017 15:47	4.86	37.48	4/5/2017 15:44	442	15:50 FPL attached hose and trash pump to Ag well
4/5/2017 16:40	4.84	37.50	4/5/2017 16:37	423	
4/5/2017 17:35	4.88	37.46	4/5/2017 17:34	590	

Well FA-3 & AG WELL PUMP RATES MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/5/2017 19:01	4.87	37.47	4/5/2017 19:04	466	
4/5/2017 19:55	4.89	37.45	4/5/2017 20:00	466	*19:55 lightning, no rain yet
4/5/2017 20:46	4.91	37.43	4/5/2017 20:49	465	
4/5/2017 21:53	4.95	37.39	4/5/2017 21:56	474	
4/5/2017 22:51	4.95	37.39	4/5/2017 22:48	465	
4/5/2017 23:33	4.95	37.39	4/5/2017 23:29	466	
4/6/2017 0:36	4.94	37.40	4/6/2017 0:32	465	
4/6/2017 1:29	4.92	37.42	4/6/2017 1:28	464	*Thompson pump employee around Ag well
4/6/2017 2:10	4.91	37.43	4/6/2017 2:02	468	
4/6/2017 2:50	4.90	37.44	4/6/2017 2:47	464	
4/6/2017 3:50	4.88	37.46	4/6/2017 3:47	465	
4/6/2017 4:32	4.88	37.46	4/6/2017 4:20	463	
4/6/2017 5:45	4.87	37.47	4/6/2017 5:42	421	
4/6/2017 6:52	4.89	37.45	4/6/2017 6:49	464	
4/6/2017 7:58	4.90	37.44	4/6/2017 7:45	465	
4/6/2017 9:04	4.88	37.46	4/6/2017 9:01	419	
4/6/2017 13:10	4.88	37.46	4/6/2017 13:07	513	
4/6/2017 14:53	4.83	37.51	4/6/2017 14:49	339	*FPL said they lowered the AG well pump rate
4/6/2017 16:00	4.86	37.48	4/6/2017 15:55	530	

Well FA-3 & AG WELL PUMP RATES

MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/6/2017 16:57	4.88	37.46	4/6/2017 16:53	566	
4/6/2017 18:09	4.91	37.43	4/6/2017 17:59	605	
4/6/2017 20:48	4.92	37.42	4/6/2017 18:22	544	*shift change, program transducers for recovery
4/6/2017 21:36	4.93	37.41	4/6/2017 20:45	506	
4/6/2017 22:29	4.95	37.39	4/6/2017 21:28	439	
4/6/2017 23:36	4.97	37.37	4/6/2017 22:26	438	
4/7/2017 0:34	4.97	37.37	4/6/2017 23:34	438	
4/7/2017 1:12	4.96	37.38	4/7/2017 0:33	439	
4/7/2017 2:09	4.95	37.39	4/7/2017 1:11	437	
4/7/2017 3:17	4.94	37.40	4/7/2017 2:06	438	
4/7/2017 4:03	4.94	37.40	4/7/2017 3:14	449	
4/7/2017 4:49	4.93	37.41	4/7/2017 3:55	449	
4/7/2017 5:44	4.94	37.40	4/7/2017 4:48	438	
4/7/2017 6:36	4.94	37.40	4/7/2017 5:40	446	
4/7/2017 7:28	4.93	37.41	4/7/2017 6:35	429	
4/7/2017 9:11	4.98	37.36	4/7/2017 7:39	398	
4/7/2017 10:36	5.00	37.34	4/7/2017 9:14	436	
4/7/2017 11:56	5.03	37.31	4/7/2017 10:39	410	
4/7/2017 12:09	5.03	37.31			

Well FA-3 & AG WELL PUMP RATES

MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/7/2017 12:10	5.03	37.31			
4/7/2017 12:10	5.02	37.32			
4/7/2017 12:10	5.02	37.32			
4/7/2017 12:11	5.01	37.33			
4/7/2017 12:11	5.00	37.34			
4/7/2017 12:11	4.98	37.36			
4/7/2017 12:11	4.97	37.37			
4/7/2017 12:12	4.96	37.38			
4/7/2017 12:12	4.94	37.40			
4/7/2017 12:13	4.92	37.42			
4/7/2017 12:13	4.89	37.45			
4/7/2017 12:14	4.87	37.47			
4/7/2017 12:14	4.86	37.48			
4/7/2017 12:15	4.84	37.50			
4/7/2017 12:16	4.81	37.53			
4/7/2017 12:17	4.78	37.56			
4/7/2017 12:18	4.76	37.58			
4/7/2017 12:19	4.73	37.61			
4/7/2017 12:20	4.71	37.63			

Well FA-3 & AG WELL PUMP RATES

MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/7/2017 12:21	4.69	37.65			
4/7/2017 12:22	4.67	37.67			
4/7/2017 12:23	4.65	37.69			
4/7/2017 12:24	4.63	37.71			
4/7/2017 12:25	4.61	37.73			
4/7/2017 12:30	4.54	37.80			
4/7/2017 12:35	4.46	37.88			
4/7/2017 12:40	4.40	37.94			
4/7/2017 12:45	4.34	38.00			
4/7/2017 12:50	4.29	38.05			
4/7/2017 12:55	4.25	38.09			
4/7/2017 13:00	4.20	38.14			
4/7/2017 13:05	4.16	38.18			
4/7/2017 13:10	4.11	38.23	4/7/2017 13:12	334	
4/7/2017 13:20	4.02	38.32			*13:23 water truck is being filled at Ag well
4/7/2017 13:30	3.98	38.36			
4/7/2017 13:40	3.93	38.41			
4/7/2017 13:50	3.88	38.46	4/7/2017 13:54	339	
4/7/2017 14:00	3.82	38.52			

Well FA-3 & AG WELL PUMP RATES MANUAL FIELD DATA

Manual MP (ft NAVD 88)	42.34
Depth of Trans (bmp)	29.71
Elev of trans (ft NAVD 88)	12.63

Date & Time	WL Probe Rdg (ft bmp)	WL Probe Rdg (ft NAVD 88)	Date & Time	AG WELL Pump Rate (gpm)	Comments
4/7/2017 14:10	3.78	38.56			
4/7/2017 14:41	3.66	38.68			
4/7/2017 15:14	3.58	38.76			
4/7/2017 15:47	3.50	38.84	4/7/2017 13:54	496	
4/7/2017 16:28	3.46	38.88			
4/7/2017 17:03	3.40	38.94			*17:12 change AG well rate to 466 GPM
4/7/2017 18:30	3.30	39.04	4/7/2017 18:34	438	
4/8/2017 8:32	3.24	39.10	4/8/2017 8:50	447	
4/8/2017 11:40	3.24	39.10			

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

FPL Okeechobee Clean Energy Center
Production and Monitor Wells

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: April 25, 2017 Number of Copies: 1 Via Email

Submittal Number: 042-00

Specification Section Number: Exhibit A Attachement 11 – 02775 3.01 D

Item Submitted: Water Quality Report FA-1 Aquifer Performance Test Sampled 4/07/2017

New Submittal: X Resubmitted: _____

Youngquist Brothers, Inc. Representative:

X
Charles A. Reynolds
Project Controls

Youngquist Brothers, Inc.
Has Reviewed & Approved
this Shop Drawing / Submittal

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: _____

Firm: _____

Date: _____

Pace Analytical Services, LLC
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

April 24, 2017

Charles Reynolds

,

RE: Project: FPL OCEC
Pace Project No.: 35305089

Dear Charles Reynolds:
Enclosed are the analytical results for sample(s) received by the laboratory on April 07, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Rossy Guima
rossy.guima@pacelabs.com
954-582-4300
Project Manager

Enclosures

cc: Clay Fergunson, Youngquist Brothers, Inc
Chris Fulbright, Youngquist Brothers, Inc
Youngquist Brothers INC
Bill Musselwhite, Youngquist Brothers
Harvey Youngquist, Youngquist Brothers

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CERTIFICATIONS

Project: FPL OCEC
Pace Project No.: 35305089

Ormond Beach Certification IDs

8 East Tower Circle, Ormond Beach, FL 32174
Alabama Certification #: 41320
Connecticut Certification #: PH-0216
Delaware Certification: FL NELAC Reciprocity
Florida Certification #: E83079
Georgia Certification #: 955
Guam Certification: FL NELAC Reciprocity
Hawaii Certification: FL NELAC Reciprocity
Illinois Certification #: 200068
Indiana Certification: FL NELAC Reciprocity
Kansas Certification #: E-10383
Louisiana Certification #: FL NELAC Reciprocity
Louisiana Environmental Certificate #: 05007
Maryland Certification: #346
Michigan Certification #: 9911
Mississippi Certification: FL NELAC Reciprocity
Missouri Certification #: 236
Montana Certification #: Cert 0074
Nebraska Certification: NE-OS-28-14
Nevada Certification: FL NELAC Reciprocity
New York Certification #: 11608
North Carolina Environmental Certificate #: 667
North Carolina Certification #: 12710
Oklahoma Certification #: D9947
Pennsylvania Certification #: 68-00547
Puerto Rico Certification #: FL01264
South Carolina Certification: #96042001
Tennessee Certification #: TN02974
Texas Certification: FL NELAC Reciprocity
US Virgin Islands Certification: FL NELAC Reciprocity
Virginia Environmental Certification #: 460165
Wyoming Certification: FL NELAC Reciprocity
West Virginia Certification #: 9962C
Wisconsin Certification #: 399079670
Wyoming (EPA Region 8): FL NELAC Reciprocity

South Florida Certification IDs

3610 Park Central Blvd N, Pompano Beach, FL 33064
Florida Certification #: E86240

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SAMPLE SUMMARY

Project: FPL OCEC
Pace Project No.: 35305089

Lab ID	Sample ID	Matrix	Date Collected	Date Received
35305089001	**FA-1**	Water	04/07/17 09:00	04/07/17 15:20

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SAMPLE ANALYTE COUNT

Project: FPL OCEC
Pace Project No.: 35305089

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
35305089001	**FA-1**	EPA 6010	BTS, RVK	22	PASI-O
		EPA 6010	BTS	4	PASI-O
		EPA 524.2	JLR	69	PASI-O
		EPA 120.1	TAN	1	PASI-SF
		EPA 180.1	TAN	1	PASI-SF
		SM 2540C	VVV	1	PASI-SF
		SM 2540D	VVV	1	PASI-SF
		SM 4500-H+B	TAN	2	PASI-SF
		SM 5210B	EM1	1	PASI-SF
		SM 2120B	KEK	2	PASI-O
		SM 2320B	AGS	2	PASI-O
		SM 2540B	LV1	1	PASI-O
		SM 4500-Cl D	RT1	1	PASI-O
		SM 4500-S2F	RT1	1	PASI-O
		SM 4500-S2H	RT1	1	PASI-O
		SM 2330B	AGS	1	PASI-O
		EPA 300.0	CMB	3	PASI-O
		EPA 350.1	JDW	1	PASI-O
		EPA 353.2	KEK	2	PASI-O
		EPA 365.1	KEK	1	PASI-O
		EPA 365.4	RT1	2	PASI-O
		SM 5310B	AEM	1	PASI-O

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ANALYTICAL RESULTS

Project: FPL OCEC
Pace Project No.: 35305089

Sample: FA-1 **Lab ID: 35305089001** Collected: 04/07/17 09:00 Received: 04/07/17 15:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
Field Data	Analytical Method:								
Field pH	**7.67**	Std. Units			1		04/07/17 09:00		
Field Temperature	**23.5**	deg C			1		04/07/17 09:00		
Field Specific Conductance	**1049**	umhos/cm			1		04/07/17 09:00		
Oxygen, Dissolved	**2.07**	mg/L			1		04/07/17 09:00	7782-44-7	
Turbidity	**0.31**	NTU			1		04/07/17 09:00		
Chlorine, Total Residual	**0.00**	mg/L			1		04/07/17 09:00	7782-50-5	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Aluminum	**50.0 U**	ug/L	100	50.0	1	04/13/17 11:15	04/14/17 20:30	7429-90-5	
Arsenic	**5.0 U**	ug/L	10.0	5.0	1	04/13/17 11:15	04/14/17 20:30	7440-38-2	
Barium	**39.9**	ug/L	10.0	5.0	1	04/13/17 11:15	04/14/17 20:30	7440-39-3	
Boron	**61.9**	ug/L	50.0	25.0	1	04/13/17 11:15	04/14/17 20:30	7440-42-8	
Cadmium	**0.50 U**	ug/L	1.0	0.50	1	04/13/17 11:15	04/14/17 20:30	7440-43-9	
Calcium	**73500**	ug/L	500	250	1	04/13/17 11:15	04/14/17 20:30	7440-70-2	
Chromium	**2.5 U**	ug/L	5.0	2.5	1	04/13/17 11:15	04/14/17 20:30	7440-47-3	
Copper	**2.5 U**	ug/L	5.0	2.5	1	04/13/17 11:15	04/14/17 20:30	7440-50-8	
Ca Hardness as CaCO3 (SM 2340B	**183000**	ug/L	1250	624	1	04/13/17 11:15	04/14/17 20:30		
Mg Hardness as CaCO3 (SM 2340B	**181000**	ug/L	2060	1030	1	04/13/17 11:15	04/14/17 20:30		
Iron	**20.0 U**	ug/L	40.0	20.0	1	04/13/17 11:15	04/14/17 20:30	7439-89-6	
Lead	**5.0 U**	ug/L	10.0	5.0	1	04/13/17 11:15	04/14/17 20:30	7439-92-1	
Magnesium	**44000**	ug/L	500	250	1	04/13/17 11:15	04/14/17 20:30	7439-95-4	
Manganese	**2.5 U**	ug/L	5.0	2.5	1	04/13/17 11:15	04/14/17 20:30	7439-96-5	
Potassium	**3480**	ug/L	1000	500	1	04/13/17 11:15	04/14/17 20:30	7440-09-7	
Selenium	**7.5 U**	ug/L	15.0	7.5	1	04/13/17 11:15	04/14/17 20:30	7782-49-2	
Silica	**20800**	ug/L	214	107	1	04/13/17 11:15	04/14/17 20:30	7631-86-9	
Silver	**2.5 U**	ug/L	5.0	2.5	1	04/13/17 11:15	04/14/17 20:30	7440-22-4	
Sodium	**75200**	ug/L	1000	500	1	04/13/17 11:15	04/14/17 20:30	7440-23-5	
Strontium	**12800**	ug/L	100	50.0	10	04/13/17 11:15	04/15/17 14:44	7440-24-6	
Tot Hardness asCaCO3 (SM 2340B	**365000**	ug/L	3210	1600	1	04/13/17 11:15	04/14/17 20:30		
Zinc	**10.0 U**	ug/L	20.0	10.0	1	04/13/17 11:15	04/14/17 20:30	7440-66-6	
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Aluminum, Dissolved	**56.4 I**	ug/L	100	50.0	1	04/20/17 10:40	04/21/17 17:19	7429-90-5	
Iron, Dissolved	**20.0 U**	ug/L	40.0	20.0	1	04/20/17 10:40	04/21/17 10:48	7439-89-6	
Manganese, Dissolved	**2.5 U**	ug/L	5.0	2.5	1	04/20/17 10:40	04/21/17 17:19	7439-96-5	
Silica, Dissolved	**19400**	ug/L	214	107	1	04/20/17 10:40	04/21/17 17:19	7631-86-9	
524.2 MSV	Analytical Method: EPA 524.2								
Acetone	**2.5 U**	ug/L	5.0	2.5	1		04/08/17 19:40	67-64-1	
Benzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	71-43-2	
Bromobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	108-86-1	
Bromochloromethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	74-97-5	
Bromodichloromethane	**0.25 U**	ug/L	1.0	0.25	1		04/08/17 19:40	75-27-4	

REPORT OF LABORATORY ANALYSIS

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954-582-4300

ANALYTICAL RESULTS

Project: FPL OCEC
Pace Project No.: 35305089

Sample: FA-1 **Lab ID: 35305089001** Collected: 04/07/17 09:00 Received: 04/07/17 15:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
524.2 MSV	Analytical Method: EPA 524.2								
Bromoform	**0.32 U**	ug/L	1.0	0.32	1		04/08/17 19:40	75-25-2	
Bromomethane	**0.25 U**	ug/L	5.0	0.25	1		04/08/17 19:40	74-83-9	
2-Butanone (MEK)	**2.0 U**	ug/L	4.0	2.0	1		04/08/17 19:40	78-93-3	N2
n-Butylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	104-51-8	
sec-Butylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	135-98-8	
tert-Butylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	98-06-6	
Carbon tetrachloride	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	56-23-5	
Chlorobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	108-90-7	
Chloroethane	**0.28 U**	ug/L	0.50	0.28	1		04/08/17 19:40	75-00-3	
Chloroform	**0.25 U**	ug/L	1.0	0.25	1		04/08/17 19:40	67-66-3	
Chloromethane	**0.48 I**	ug/L	0.50	0.46	1		04/08/17 19:40	74-87-3	
2-Chlorotoluene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	95-49-8	
4-Chlorotoluene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	106-43-4	
Dibromochloromethane	**0.25 U**	ug/L	1.0	0.25	1		04/08/17 19:40	124-48-1	
1,2-Dibromoethane (EDB)	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	106-93-4	N2
Dibromomethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	74-95-3	
1,2-Dichlorobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	95-50-1	
1,3-Dichlorobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	541-73-1	
1,4-Dichlorobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	106-46-7	
Dichlorodifluoromethane	**0.49 U**	ug/L	0.50	0.49	1		04/08/17 19:40	75-71-8	J(L1)
1,1-Dichloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	75-34-3	
1,2-Dichloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	107-06-2	
1,1-Dichloroethene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	75-35-4	
cis-1,2-Dichloroethene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	156-59-2	
trans-1,2-Dichloroethene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	156-60-5	
1,2-Dichloropropane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	78-87-5	
1,3-Dichloropropane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	142-28-9	
2,2-Dichloropropane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	594-20-7	
1,1-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	563-58-6	
cis-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	10061-01-5	
1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	10061-02-6	N2
trans-1,3-Dichloropropene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	10061-02-6	
Ethylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	100-41-4	
Hexachloro-1,3-butadiene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	87-68-3	
Isopropylbenzene (Cumene)	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	98-82-8	
p-Isopropyltoluene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	99-87-6	
Methylene Chloride	**0.44 U**	ug/L	0.50	0.44	1		04/08/17 19:40	75-09-2	
Methyl-tert-butyl ether	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	1634-04-4	
Naphthalene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	91-20-3	
n-Propylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	103-65-1	
Styrene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	100-42-5	
1,1,1,2-Tetrachloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	630-20-6	
1,1,2,2-Tetrachloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	79-34-5	
Tetrachloroethene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	127-18-4	
Toluene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	108-88-3	
Total Trihalomethanes (Calc.)	**0.32 U**	ug/L	1.0	0.32	1		04/08/17 19:40		

REPORT OF LABORATORY ANALYSIS

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954-582-4300

ANALYTICAL RESULTS

Project: FPL OCEC
Pace Project No.: 35305089

Sample: FA-1 **Lab ID: 35305089001** Collected: 04/07/17 09:00 Received: 04/07/17 15:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
524.2 MSV	Analytical Method: EPA 524.2								
1,2,3-Trichlorobenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	87-61-6	
1,2,4-Trichlorobenzene	**0.41 U**	ug/L	0.50	0.41	1		04/08/17 19:40	120-82-1	
1,1,1-Trichloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	71-55-6	
1,1,2-Trichloroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	79-00-5	
Trichloroethene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	79-01-6	
Trichlorofluoromethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	75-69-4	
1,2,3-Trichloropropane	**0.43 U**	ug/L	0.50	0.43	1		04/08/17 19:40	96-18-4	
1,1,2-Trichlorotrifluoroethane	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	76-13-1	N2
1,2,3-Trimethylbenzene	**0.29 U**	ug/L	0.50	0.29	1		04/08/17 19:40	526-73-8	N2
1,2,4-Trimethylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	95-63-6	
1,3,5-Trimethylbenzene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	108-67-8	
Vinyl chloride	**0.39 U**	ug/L	0.50	0.39	1		04/08/17 19:40	75-01-4	J(L1)
Xylene (Total)	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	1330-20-7	
m&p-Xylene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	179601-23-1	
o-Xylene	**0.25 U**	ug/L	0.50	0.25	1		04/08/17 19:40	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/08/17 19:40	460-00-4	
Toluene-d8 (S)	110	%	70-130		1		04/08/17 19:40	2037-26-5	
1,2-Dichloroethane-d4 (S)	106	%	70-130		1		04/08/17 19:40	17060-07-0	
120.1 Specific Conductance	Analytical Method: EPA 120.1								
Specific Conductance	**1050**	umhos/cm	10.0	10.0	1		04/12/17 16:30		
180.1 Turbidity	Analytical Method: EPA 180.1								
Turbidity	**0.20 U**	NTU	0.20	0.20	1		04/08/17 18:00		
2540C Total Dissolved Solids	Analytical Method: SM 2540C								
Total Dissolved Solids	**776**	mg/L	10.0	10.0	1		04/12/17 12:16		
2540D Total Suspended Solids	Analytical Method: SM 2540D								
Total Suspended Solids	**5.0 U**	mg/L	5.0	5.0	1		04/11/17 15:48		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B								
Temperature, Water (C)	**23.8**	deg C	0.010	0.010	1		04/12/17 17:00		
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		04/12/17 17:00		Q
5210B BOD, 5 day	Analytical Method: SM 5210B								
BOD, 5 day	**4.0 U**	mg/L	4.0	4.0	2	04/08/17 16:00	04/13/17 12:55		
2120B Apparent Color	Analytical Method: SM 2120B								
Apparent Color	**5.0 U**	units	5.0	5.0	1		04/08/17 14:25		
pH	**7.5**	units			1		04/08/17 14:25		
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Phenolphthalein	**5.0 U**	mg/L	5.0	5.0	1		04/13/17 11:42		

REPORT OF LABORATORY ANALYSIS

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Pompano Beach, FL 33064
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ANALYTICAL RESULTS

Project: FPL OCEC
Pace Project No.: 35305089

Sample: FA-1 **Lab ID: 35305089001** Collected: 04/07/17 09:00 Received: 04/07/17 15:20 Matrix: Water

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	CAS No.	Qual
2320B Alkalinity	Analytical Method: SM 2320B								
Alkalinity, Total as CaCO3	**125**	mg/L	5.0	5.0	1		04/13/17 11:42		
2540B Total Solids	Analytical Method: SM 2540B								
Total Solids	**656**	mg/L	10.0	10.0	1		04/08/17 10:39		
Chlorine, Residual,Total,Free	Analytical Method: SM 4500-Cl D								
Chlorine, Total	**0.10 U**	mg/L	0.10	0.10	1		04/12/17 12:30	7782-50-5	Q
4500S2F Sulfide	Analytical Method: SM 4500-S2F								
Sulfide	**2.6**	mg/L	0.10	0.10	1		04/11/17 13:00	18496-25-8	
4500S2H Hydrogen Sulfide	Analytical Method: SM 4500-S2H								
Un-ionized Hydrogen Sulfide	**0.42**	mg/L	0.10	0.10	1		04/11/17 13:00		N2
Langelier Index	Analytical Method: SM 2330B								
Langelier Index	**0.13**				1		04/18/17 08:05	50-00-0	
300.0 IC Anions 28 Days	Analytical Method: EPA 300.0								
Chloride	**128**	mg/L	25.0	12.5	5		04/15/17 20:51	16887-00-6	
Fluoride	**0.56**	mg/L	0.25	0.17	5		04/15/17 20:51	16984-48-8	
Sulfate	**154**	mg/L	25.0	12.5	5		04/15/17 20:51	14808-79-8	
350.1 Ammonia	Analytical Method: EPA 350.1								
Nitrogen, Ammonia	**0.36**	mg/L	0.050	0.020	1		04/12/17 17:30	7664-41-7	
353.2 Nitrogen, NO2/NO3 unpres	Analytical Method: EPA 353.2								
Nitrogen, Nitrate	**0.025 U**	mg/L	0.050	0.025	1		04/08/17 11:33		
Nitrogen, Nitrite	**0.025 U**	mg/L	0.050	0.025	1		04/08/17 11:33		
365.1 Orthophosphate as P	Analytical Method: EPA 365.1								
Orthophosphate as P	**0.020**	mg/L	0.0040	0.0034	1		04/08/17 10:09		
365.4 Phosphorus, Total	Analytical Method: EPA 365.4 Preparation Method: EPA 365.4								
Phosphate as P04	**0.15 U**	mg/L	0.31	0.15	1	04/10/17 21:37	04/11/17 11:55		
Phosphorus, Total (as P)	**0.050 U**	mg/L	0.10	0.050	1	04/10/17 21:37	04/11/17 11:55	7723-14-0	
5310B TOC	Analytical Method: SM 5310B								
Total Organic Carbon	**1.7**	mg/L	1.0	0.50	1		04/12/17 23:15	7440-44-0	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362276
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 35305089001

METHOD BLANK: 1952827
Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum	ug/L	50.0 U	100	50.0	04/14/17 19:35	
Arsenic	ug/L	5.0 U	10.0	5.0	04/14/17 19:35	
Barium	ug/L	5.0 U	10.0	5.0	04/14/17 19:35	
Boron	ug/L	25.0 U	50.0	25.0	04/14/17 19:35	
Ca Hardness as CaCO3 (SM 2340B	ug/L	624 U	1250	624	04/14/17 19:35	
Cadmium	ug/L	0.50 U	1.0	0.50	04/14/17 19:35	
Calcium	ug/L	250 U	500	250	04/14/17 19:35	
Chromium	ug/L	2.5 U	5.0	2.5	04/14/17 19:35	
Copper	ug/L	2.5 U	5.0	2.5	04/14/17 19:35	
Iron	ug/L	20.0 U	40.0	20.0	04/14/17 19:35	
Lead	ug/L	5.0 U	10.0	5.0	04/14/17 19:35	
Magnesium	ug/L	250 U	500	250	04/14/17 19:35	
Manganese	ug/L	2.5 U	5.0	2.5	04/14/17 19:35	
Mg Hardness as CaCO3 (SM 2340B	ug/L	1030 U	2060	1030	04/14/17 19:35	
Potassium	ug/L	500 U	1000	500	04/14/17 19:35	
Selenium	ug/L	7.5 U	15.0	7.5	04/14/17 19:35	
Silica	ug/L	107 U	214	107	04/14/17 19:35	
Silver	ug/L	2.5 U	5.0	2.5	04/14/17 19:35	
Sodium	ug/L	500 U	1000	500	04/14/17 19:35	
Strontium	ug/L	5.0 U	10.0	5.0	04/14/17 19:35	
Tot Hardness asCaCO3 (SM 2340B	ug/L	1600 U	3210	1600	04/14/17 19:35	
Zinc	ug/L	10.0 U	20.0	10.0	04/14/17 19:35	

LABORATORY CONTROL SAMPLE: 1952828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum	ug/L	2500	2640	106	80-120	
Arsenic	ug/L	250	269	108	80-120	
Barium	ug/L	250	259	104	80-120	
Boron	ug/L	2500	2610	104	80-120	
Ca Hardness as CaCO3 (SM 2340B	ug/L	31200	32800	105	80-120	
Cadmium	ug/L	25	27.9	111	80-120	
Calcium	ug/L	12500	13100	105	80-120	
Chromium	ug/L	250	264	105	80-120	
Copper	ug/L	250	259	103	80-120	
Iron	ug/L	2500	2630	105	80-120	
Lead	ug/L	250	283	113	80-120	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

LABORATORY CONTROL SAMPLE: 1952828

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Magnesium	ug/L	12500	13300	106	80-120	
Manganese	ug/L	250	268	107	80-120	
Mg Hardness as CaCO3 (SM 2340B	ug/L	51500	54700	106	80-120	
Potassium	ug/L	12500	12600	101	80-120	
Selenium	ug/L	250	286	114	80-120	
Silica	ug/L	5350	5550	104	80-120	
Silver	ug/L	25	25.1	100	80-120	
Sodium	ug/L	12500	13300	106	80-120	
Strontium	ug/L	250	262	105	80-120	
Tot Hardness asCaCO3 (SM 2340B	ug/L	82700	87500	106	80-120	
Zinc	ug/L	1250	1430	114	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1952829 1952830

Parameter	Units	35303570002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum	ug/L	50.0 U	2500	2500	2620	2620	105	105	75-125	0	20	
Arsenic	ug/L	5.0 U	250	250	251	262	98	103	75-125	4	20	
Barium	ug/L	13.9	250	250	261	264	99	100	75-125	1	20	
Boron	ug/L	238	2500	2500	2840	2760	104	101	75-125	3	20	
Ca Hardness as CaCO3 (SM 2340B	ug/L	243000	31200	31200	273000	278000	96	110	75-125	2	20	
Cadmium	ug/L	0.50 U	25	25	25.0	25.4	99	101	75-125	2	20	
Calcium	ug/L	97400	12500	12500	109000	111000	96	110	75-125	2	20	
Chromium	ug/L	2.5 U	250	250	254	258	101	102	75-125	2	20	
Copper	ug/L	2.5 U	250	250	260	272	104	109	75-125	5	20	
Iron	ug/L	27.4 I	2500	2500	2540	2590	100	102	75-125	2	20	
Lead	ug/L	5.0 U	250	250	251	256	100	102	75-125	2	20	
Magnesium	ug/L	10200	12500	12500	23200	23500	104	106	75-125	1	20	
Manganese	ug/L	3.4 I	250	250	262	251	103	99	75-125	4	20	
Mg Hardness as CaCO3 (SM 2340B	ug/L	41900	51500	51500	95400	96600	104	106	75-125	1	20	
Potassium	ug/L	9180	12500	12500	21600	21900	100	102	75-125	1	20	
Selenium	ug/L	7.5 U	250	250	251	269	100	108	75-125	7	20	
Silica	ug/L	9210	5350	5350	14000	14800	90	105	75-125	6	20	
Silver	ug/L	2.5 U	25	25	24.5	24.4	98	98	75-125	0	20	
Sodium	ug/L	164000	12500	12500	178000	182000	110	139	75-125	2	20	J(M1)
Strontium	ug/L	227	250	250	475	483	99	102	75-125	2	20	
Tot Hardness asCaCO3 (SM 2340B	ug/L	285000	82700	82700	369000	374000	101	108	75-125	2	20	
Zinc	ug/L	10.0 U	1250	1250	1300	1340	104	107	75-125	3	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 363680 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Filtered
Associated Lab Samples: 35305089001

METHOD BLANK: 1960985 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Aluminum, Dissolved	ug/L	50.0 U	100	50.0	04/20/17 23:09	
Iron, Dissolved	ug/L	20.0 U	40.0	20.0	04/21/17 10:20	
Manganese, Dissolved	ug/L	4.9 I	5.0	2.5	04/21/17 10:20	
Silica, Dissolved	ug/L	107 U	214	107	04/21/17 10:20	

LABORATORY CONTROL SAMPLE: 1960986

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Aluminum, Dissolved	ug/L	2500	2550	102	80-120	
Iron, Dissolved	ug/L	2500	2590	104	80-120	
Manganese, Dissolved	ug/L	250	255	102	80-120	
Silica, Dissolved	ug/L	5350	4760	89	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1960987 1960988

Parameter	Units	35305089001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Aluminum, Dissolved	ug/L	56.4 I	2500	2500	2510	2550	98	100	75-125	2	20	
Iron, Dissolved	ug/L	20.0 U	2500	2500	2560	2610	102	104	75-125	2	20	
Manganese, Dissolved	ug/L	2.5 U	250	250	248	248	99	99	75-125	0	20	
Silica, Dissolved	ug/L	19400	5350	5350	23900	23300	84	74	75-125	2	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361485 Analysis Method: EPA 524.2
QC Batch Method: EPA 524.2 Analysis Description: 524.2 MSV
Associated Lab Samples: 35305089001

METHOD BLANK: 1948206 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1,1-Trichloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1,2,2-Tetrachloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1,2-Trichloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1,2-Trichlorotrifluoroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	N2
1,1-Dichloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1-Dichloroethene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,1-Dichloropropene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2,3-Trichlorobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2,3-Trichloropropane	ug/L	0.43 U	0.50	0.43	04/08/17 13:22	
1,2,3-Trimethylbenzene	ug/L	0.29 U	0.50	0.29	04/08/17 13:22	N2
1,2,4-Trichlorobenzene	ug/L	0.41 U	0.50	0.41	04/08/17 13:22	
1,2,4-Trimethylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2-Dibromoethane (EDB)	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	N2
1,2-Dichlorobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2-Dichloroethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2-Dichloropropane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,3,5-Trimethylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,3-Dichlorobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,3-Dichloropropane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,3-Dichloropropene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	N2
1,4-Dichlorobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
2,2-Dichloropropane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
2-Butanone (MEK)	ug/L	2.0 U	4.0	2.0	04/08/17 13:22	N2
2-Chlorotoluene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
4-Chlorotoluene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Acetone	ug/L	2.5 U	5.0	2.5	04/08/17 13:22	
Benzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Bromobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Bromochloromethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Bromodichloromethane	ug/L	0.25 U	1.0	0.25	04/08/17 13:22	
Bromoform	ug/L	0.32 U	1.0	0.32	04/08/17 13:22	
Bromomethane	ug/L	0.25 U	5.0	0.25	04/08/17 13:22	
Carbon tetrachloride	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Chlorobenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Chloroethane	ug/L	0.28 U	0.50	0.28	04/08/17 13:22	
Chloroform	ug/L	0.25 U	1.0	0.25	04/08/17 13:22	
Chloromethane	ug/L	0.46 U	0.50	0.46	04/08/17 13:22	
cis-1,2-Dichloroethene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
cis-1,3-Dichloropropene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Dibromochloromethane	ug/L	0.25 U	1.0	0.25	04/08/17 13:22	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

METHOD BLANK: 1948206 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Dichlorodifluoromethane	ug/L	0.49 U	0.50	0.49	04/08/17 13:22	
Ethylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Hexachloro-1,3-butadiene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Isopropylbenzene (Cumene)	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
m&p-Xylene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Methyl-tert-butyl ether	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Methylene Chloride	ug/L	0.44 U	0.50	0.44	04/08/17 13:22	
n-Butylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
n-Propylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Naphthalene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
o-Xylene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
p-Isopropyltoluene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
sec-Butylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Styrene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
tert-Butylbenzene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Tetrachloroethene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Toluene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Total Trihalomethanes (Calc.)	ug/L	0.32 U	1.0	0.32	04/08/17 13:22	
trans-1,2-Dichloroethene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
trans-1,3-Dichloropropene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Trichloroethene	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Trichlorofluoromethane	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
Vinyl chloride	ug/L	0.39 U	0.50	0.39	04/08/17 13:22	
Xylene (Total)	ug/L	0.25 U	0.50	0.25	04/08/17 13:22	
1,2-Dichloroethane-d4 (S)	%	104	70-130		04/08/17 13:22	
4-Bromofluorobenzene (S)	%	90	70-130		04/08/17 13:22	
Toluene-d8 (S)	%	94	70-130		04/08/17 13:22	

LABORATORY CONTROL SAMPLE & LCSD: 1948207 1948208

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	40	42.0	42.6	105	106	70-130	1	40	
1,1,1-Trichloroethane	ug/L	40	47.4	46.1	119	115	70-130	3	40	
1,1,2,2-Tetrachloroethane	ug/L	40	36.6	38.7	92	97	70-130	5	40	
1,1,2-Trichloroethane	ug/L	40	39.8	47.6	99	119	70-130	18	40	
1,1,2-Trichlorotrifluoroethane	ug/L	40	40.4	38.7	101	97	50-150	4	40	N2
1,1-Dichloroethane	ug/L	40	43.7	43.7	109	109	70-130	0	40	
1,1-Dichloroethene	ug/L	40	42.8	43.1	107	108	70-130	1	40	
1,1-Dichloropropene	ug/L	40	42.1	42.8	105	107	70-130	2	40	
1,2,3-Trichlorobenzene	ug/L	40	39.4	42.6	98	107	70-130	8	40	
1,2,3-Trichloropropane	ug/L	40	39.4	42.5	99	106	70-130	8	40	
1,2,3-Trimethylbenzene	ug/L	40	39.2	40.0	98	100	70-130	2	40	N2
1,2,4-Trichlorobenzene	ug/L	40	41.4	43.9	104	110	70-130	6	40	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

LABORATORY CONTROL SAMPLE & LCSD: 1948207 1948208

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	40	43.8	44.4	110	111	70-130	1	40	
1,2-Dibromoethane (EDB)	ug/L	40	40.2	49.3	100	123	70-130	20	40	N2
1,2-Dichlorobenzene	ug/L	40	36.9	37.9	92	95	70-130	3	40	
1,2-Dichloroethane	ug/L	40	40.9	40.4	102	101	70-130	1	40	
1,2-Dichloropropane	ug/L	40	35.9	41.7	90	104	70-130	15	40	
1,3,5-Trimethylbenzene	ug/L	40	44.6	45.0	111	113	70-130	1	40	
1,3-Dichlorobenzene	ug/L	40	38.6	39.4	96	98	70-130	2	40	
1,3-Dichloropropane	ug/L	40	36.6	46.7	91	117	70-130	24	40	
1,3-Dichloropropene	ug/L	80	80.5	90.8	101	113	70-130	12	40	N2
1,4-Dichlorobenzene	ug/L	40	39.8	40.6	99	102	70-130	2	40	
2,2-Dichloropropane	ug/L	40	51.8	46.8	129	117	70-130	10	40	
2-Butanone (MEK)	ug/L	80	82.8	82.2	103	103	70-130	1	40	N2
2-Chlorotoluene	ug/L	40	34.9	34.9	87	87	70-130	0	40	
4-Chlorotoluene	ug/L	40	41.3	41.6	103	104	70-130	1	40	
Acetone	ug/L	80	85.4	84.2	107	105	70-130	1	40	
Benzene	ug/L	40	42.1	42.7	105	107	70-130	1	40	
Bromobenzene	ug/L	40	37.6	37.9	94	95	70-130	1	40	
Bromochloromethane	ug/L	40	40.3	41.0	101	103	70-130	2	40	
Bromodichloromethane	ug/L	40	37.9	40.2	95	100	70-130	6	40	
Bromoform	ug/L	40	38.7	41.0	97	103	70-130	6	40	
Bromomethane	ug/L	40	44.7	42.3	112	106	70-130	5	40	
Carbon tetrachloride	ug/L	40	40.2	38.8	101	97	70-130	4	40	
Chlorobenzene	ug/L	40	38.2	39.7	95	99	70-130	4	40	
Chloroethane	ug/L	40	50.3	49.4	126	124	70-130	2	40	
Chloroform	ug/L	40	40.5	39.2	101	98	70-130	3	40	
Chloromethane	ug/L	40	38.9	40.4	97	101	70-130	4	40	
cis-1,2-Dichloroethene	ug/L	40	40.2	40.6	100	101	70-130	1	40	
cis-1,3-Dichloropropene	ug/L	40	40.8	44.9	102	112	70-130	10	40	
Dibromochloromethane	ug/L	40	41.5	49.1	104	123	70-130	17	40	
Dibromomethane	ug/L	40	40.8	45.8	102	115	70-130	12	40	
Dichlorodifluoromethane	ug/L	40	61.3	53.4	153	133	70-130	14	40	J(L1)
Ethylbenzene	ug/L	40	42.9	44.0	107	110	70-130	3	40	
Hexachloro-1,3-butadiene	ug/L	40	38.0	39.7	95	99	70-130	4	40	
Isopropylbenzene (Cumene)	ug/L	40	40.3	42.2	101	106	70-130	5	40	
m&p-Xylene	ug/L	80	92.1	95.7	115	120	70-130	4	40	
Methyl-tert-butyl ether	ug/L	40	44.3	46.5	111	116	70-130	5	40	
Methylene Chloride	ug/L	40	44.3	41.5	111	104	70-130	7	40	
n-Butylbenzene	ug/L	40	45.0	45.8	113	114	70-130	2	40	
n-Propylbenzene	ug/L	40	44.3	46.0	111	115	70-130	4	40	
Naphthalene	ug/L	40	42.0	47.8	105	120	70-130	13	40	
o-Xylene	ug/L	40	49.9	52.2	125	130	70-130	4	40	
p-Isopropyltoluene	ug/L	40	47.2	47.8	118	120	70-130	1	40	
sec-Butylbenzene	ug/L	40	43.1	43.7	108	109	70-130	1	40	
Styrene	ug/L	40	46.6	48.4	116	121	70-130	4	40	
tert-Butylbenzene	ug/L	40	44.7	44.7	112	112	70-130	0	40	
Tetrachloroethene	ug/L	40	39.9	47.4	100	118	70-130	17	40	
Toluene	ug/L	40	41.3	46.9	103	117	70-130	13	40	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

LABORATORY CONTROL SAMPLE & LCSD: 1948207 1948208

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
Total Trihalomethanes (Calc.)	ug/L	160	159	169	99	106	70-130	7	40	
trans-1,2-Dichloroethene	ug/L	40	42.6	42.8	107	107	70-130	0	40	
trans-1,3-Dichloropropene	ug/L	40	39.7	45.8	99	115	70-130	14	40	
Trichloroethene	ug/L	40	40.6	41.6	101	104	70-130	3	40	
Trichlorofluoromethane	ug/L	40	40.1	33.9	100	85	70-130	17	40	
Vinyl chloride	ug/L	40	51.4	55.3	129	138	70-130	7	40	J(L1)
Xylene (Total)	ug/L	120	142	148	118	123	70-130	4	40	
1,2-Dichloroethane-d4 (S)	%				100	97	70-130			
4-Bromofluorobenzene (S)	%				110	111	70-130			
Toluene-d8 (S)	%				93	103	70-130			

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362242 Analysis Method: EPA 120.1
QC Batch Method: EPA 120.1 Analysis Description: 120.1 Specific Conductance
Associated Lab Samples: 35305089001

METHOD BLANK: 1952557 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Specific Conductance	umhos/cm	10.0 U	10.0	10.0	04/12/17 16:30	

LABORATORY CONTROL SAMPLE: 1952558

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Specific Conductance	umhos/cm	1410	1410	100	95-105	

SAMPLE DUPLICATE: 1952559

Parameter	Units	35305089001 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	1050	1050	0	20	

SAMPLE DUPLICATE: 1952560

Parameter	Units	35305152002 Result	Dup Result	RPD	Max RPD	Qualifiers
Specific Conductance	umhos/cm	561	561	0	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362596 Analysis Method: EPA 180.1
QC Batch Method: EPA 180.1 Analysis Description: 180.1 Turbidity
Associated Lab Samples: 35305089001

METHOD BLANK: 1954668 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Turbidity	NTU	0.20 U	0.20	0.20	04/08/17 18:00	

LABORATORY CONTROL SAMPLE: 1954669

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Turbidity	NTU	16.5	17.3	105	90-110	

SAMPLE DUPLICATE: 1954670

Parameter	Units	35305089001 Result	Dup Result	RPD	Max RPD	Qualifiers
Turbidity	NTU	0.20 U	0.20 U		20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362230 Analysis Method: SM 2540C
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids
Associated Lab Samples: 35305089001

METHOD BLANK: 1952478 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	5.0 U	5.0	5.0	04/12/17 12:07	

LABORATORY CONTROL SAMPLE: 1952479

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	307	102	90-110	

SAMPLE DUPLICATE: 1952480

Parameter	Units	35305064002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1200	936	25	5	J(D6)

SAMPLE DUPLICATE: 1952481

Parameter	Units	35305142004 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	2700	2670	1	5	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362009 Analysis Method: SM 2540D
QC Batch Method: SM 2540D Analysis Description: 2540D Total Suspended Solids
Associated Lab Samples: 35305089001

METHOD BLANK: 1950875 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Suspended Solids	mg/L	1.0 U	1.0	1.0	04/11/17 15:38	

LABORATORY CONTROL SAMPLE: 1950876

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Suspended Solids	mg/L	100	99.8	100	90-110	

SAMPLE DUPLICATE: 1950877

Parameter	Units	35305120001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1.0 U	1.0 U		5	

SAMPLE DUPLICATE: 1950878

Parameter	Units	35305130002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Suspended Solids	mg/L	1.0	1.2	13	5	J(D6)

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362232 Analysis Method: SM 5210B
QC Batch Method: SM 5210B Analysis Description: 5210B BOD, 5 day
Associated Lab Samples: 35305089001

METHOD BLANK: 1952490 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
BOD, 5 day	mg/L	2.0 U	2.0	2.0	04/13/17 12:55	

LABORATORY CONTROL SAMPLE: 1952491

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
BOD, 5 day	mg/L	198	197	99	85-115	

SAMPLE DUPLICATE: 1952492

Parameter	Units	35305089001 Result	Dup Result	RPD	Max RPD	Qualifiers
BOD, 5 day	mg/L	4.0 U	4.0 U		20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361498 Analysis Method: SM 2120B
QC Batch Method: SM 2120B Analysis Description: 2120B Color
Associated Lab Samples: 35305089001

METHOD BLANK: 1948266 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Apparent Color	units	5.0 U	5.0	5.0	04/08/17 14:25	

LABORATORY CONTROL SAMPLE: 1948267

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Apparent Color	units	20	20.0	100	90-110	

SAMPLE DUPLICATE: 1948268

Parameter	Units	35305089001 Result	Dup Result	RPD	Max RPD	Qualifiers
Apparent Color	units	5.0 U	5.0 U		20	
pH	units	7.5	7.5	0		

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361642 — Analysis Method: SM 2320B
QC Batch Method: SM 2320B — Analysis Description: 2320B Alkalinity
Associated Lab Samples: 35305089001

METHOD BLANK: 1948666 — Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Alkalinity, Phenolphthalein	mg/L	5.0 U	5.0	5.0	04/13/17 09:59	
Alkalinity, Total as CaCO3	mg/L	5.0 U	5.0	5.0	04/13/17 09:59	

LABORATORY CONTROL SAMPLE: 1948667

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Alkalinity, Total as CaCO3	mg/L	250	265	106	90-110	

SAMPLE DUPLICATE: 1948668

Parameter	Units	35304616001 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Phenolphthalein	mg/L	5.0 U	5.0 U		20	
Alkalinity, Total as CaCO3	mg/L	144	147	2	20	

SAMPLE DUPLICATE: 1948669

Parameter	Units	35304782006 Result	Dup Result	RPD	Max RPD	Qualifiers
Alkalinity, Phenolphthalein	mg/L	5.0 U	5.0 U		20	
Alkalinity, Total as CaCO3	mg/L	146	145	0	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361468 Analysis Method: SM 2540B
QC Batch Method: SM 2540B Analysis Description: 2540B Total Solids
Associated Lab Samples: 35305089001

METHOD BLANK: 1948041 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Solids	mg/L	5.0 U	5.0	5.0	04/08/17 10:32	

LABORATORY CONTROL SAMPLE: 1948042

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Solids	mg/L	300	290	97	90-110	

SAMPLE DUPLICATE: 1948043

Parameter	Units	35304759001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Solids	mg/L	1700	1710	0	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362067 — Analysis Method: SM 4500-Cl D
QC Batch Method: SM 4500-Cl D — Analysis Description: 4500CLD Chlorine, Total, Free, Residual
Associated Lab Samples: 35305089001

METHOD BLANK: 1951353 — Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chlorine, Total	mg/L	0.10 U	0.10	0.10	04/12/17 12:30	Q

LABORATORY CONTROL SAMPLE: 1951354

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chlorine, Total	mg/L	.5	0.49	98	90-110	Q

MATRIX SPIKE SAMPLE: 1951356

Parameter	Units	35303659001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Chlorine, Total	mg/L	0.10 U	.5	0.49	98	80-120	Q

SAMPLE DUPLICATE: 1951355

Parameter	Units	35303659001 Result	Dup Result	RPD	Max RPD	Qualifiers
Chlorine, Total	mg/L	0.10 U	0.10 U		20	Q

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361817 Analysis Method: SM 4500-S2F
QC Batch Method: SM 4500-S2F Analysis Description: 4500S2F Sulfide
Associated Lab Samples: 35305089001

METHOD BLANK: 1949708 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Sulfide	mg/L	0.10 U	0.10	0.10	04/11/17 13:00	

LABORATORY CONTROL SAMPLE: 1949709

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	6	5.6	94	80-120	

MATRIX SPIKE SAMPLE: 1949711

Parameter	Units	35304440002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Sulfide	mg/L	0.10 U	6	4.9	82	80-120	

SAMPLE DUPLICATE: 1949710

Parameter	Units	35304440001 Result	Dup Result	RPD	Max RPD	Qualifiers
Sulfide	mg/L	0.77	0.60	25	20	J(D6)

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362786
QC Batch Method: EPA 300.0
Analysis Method: EPA 300.0
Analysis Description: 300.0 IC Anions
Associated Lab Samples: 35305089001

METHOD BLANK: 1956139 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	2.5 U	5.0	2.5	04/15/17 10:31	
Fluoride	mg/L	0.034 U	0.050	0.034	04/15/17 10:31	
Sulfate	mg/L	2.5 U	5.0	2.5	04/15/17 10:31	

LABORATORY CONTROL SAMPLE: 1956140

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	50	48.2	96	90-110	
Fluoride	mg/L	5	4.7	94	90-110	
Sulfate	mg/L	50	47.5	95	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1956141 1956142

Parameter	Units	35303997001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	45.2	50	50	99.0	98.9	108	108	90-110	0	20	
Fluoride	mg/L	0.56	5	5	5.3	5.3	94	94	90-110	0	20	
Sulfate	mg/L	13.8	50	50	62.3	62.0	97	96	90-110	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1956143 1956144

Parameter	Units	35305156001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	6.6	50	50	53.6	54.1	94	95	90-110	1	20	
Fluoride	mg/L	0.034 U	5	5	4.6	4.6	91	92	90-110	1	20	
Sulfate	mg/L	38.0	50	50	90.0	90.4	104	105	90-110	0	20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362097 Analysis Method: EPA 350.1
QC Batch Method: EPA 350.1 Analysis Description: 350.1 Ammonia
Associated Lab Samples: 35305089001

METHOD BLANK: 1951442 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Ammonia	mg/L	0.020 U	0.050	0.020	04/12/17 16:59	

LABORATORY CONTROL SAMPLE: 1951443

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	1	1.0	104	90-110	

MATRIX SPIKE SAMPLE: 1951445

Parameter	Units	35304861001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Ammonia	mg/L	0.020 U	1	1.1	110	90-110	

SAMPLE DUPLICATE: 1951444

Parameter	Units	35304861001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Ammonia	mg/L	0.020 U	0.020 U		20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361467
QC Batch Method: EPA 353.2
Analysis Method: EPA 353.2
Analysis Description: 353.2 Nitrate + Nitrite, Unpres.
Associated Lab Samples: 35305089001

METHOD BLANK: 1948035 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Nitrogen, Nitrate	mg/L	0.025 U	0.050	0.025	04/08/17 11:15	
Nitrogen, Nitrite	mg/L	0.025 U	0.050	0.025	04/08/17 11:15	

LABORATORY CONTROL SAMPLE: 1948036

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrite	mg/L	1	0.97	97	90-110	

MATRIX SPIKE SAMPLE: 1948038

Parameter	Units	35305000001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrite	mg/L	0.025 U	1	0.80	80	90-110	J(M1)

MATRIX SPIKE SAMPLE: 1948040

Parameter	Units	35305206002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Nitrogen, Nitrite	mg/L	0.025 U	1	0.98	98	90-110	

SAMPLE DUPLICATE: 1948037

Parameter	Units	35305000001 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.025 U	0.025 U		20	
Nitrogen, Nitrite	mg/L	0.025 U	0.025 U		20	

SAMPLE DUPLICATE: 1948039

Parameter	Units	35305206002 Result	Dup Result	RPD	Max RPD	Qualifiers
Nitrogen, Nitrate	mg/L	0.025 U	0.025 U		20	
Nitrogen, Nitrite	mg/L	0.025 U	0.025 U		20	

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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361459
QC Batch Method: EPA 365.1
Analysis Method: EPA 365.1
Analysis Description: 365.1 Orthophosphate as P
Associated Lab Samples: 35305089001

METHOD BLANK: 1948010 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Orthophosphate as P	mg/L	0.0034 U	0.0040	0.0034	04/08/17 09:55	

LABORATORY CONTROL SAMPLE: 1948011

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	.1	0.094	94	90-110	

MATRIX SPIKE SAMPLE: 1948013

Parameter	Units	35305037001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.34	.1	0.42	87	90-110	J(M1)

MATRIX SPIKE SAMPLE: 1948015

Parameter	Units	35305199002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Orthophosphate as P	mg/L	0.013	.1	0.11	98	90-110	

SAMPLE DUPLICATE: 1948012

Parameter	Units	35305037001 Result	Dup Result	RPD	Max RPD	Qualifiers
Orthophosphate as P	mg/L	0.34	0.34	1	20	

SAMPLE DUPLICATE: 1948014

Parameter	Units	35305199002 Result	Dup Result	RPD	Max RPD	Qualifiers
Orthophosphate as P	mg/L	0.013	0.012	7	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 361709 Analysis Method: EPA 365.4
QC Batch Method: EPA 365.4 Analysis Description: 365.4 Phosphorus
Associated Lab Samples: 35305089001

METHOD BLANK: 1949038 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Phosphate as P04	mg/L	0.15 U	0.31	0.15	04/11/17 11:50	
Phosphorus, Total (as P)	mg/L	0.050 U	0.10	0.050	04/11/17 11:50	

LABORATORY CONTROL SAMPLE: 1949039

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Phosphate as P04	mg/L	12.2	11.9	98	90-110	
Phosphorus, Total (as P)	mg/L	4	3.9	97	90-110	

MATRIX SPIKE SAMPLE: 1949041

Parameter	Units	35305061001 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
Phosphate as P04	mg/L	0.98	12.2	12.8	97	80-120	
Phosphorus, Total (as P)	mg/L	0.32	4	4.2	97	80-120	

SAMPLE DUPLICATE: 1949040

Parameter	Units	35305061001 Result	Dup Result	RPD	Max RPD	Qualifiers
Phosphate as P04	mg/L	0.98	1.0	2	20	
Phosphorus, Total (as P)	mg/L	0.32	0.33	2	20	

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Pompano Beach, FL 33064
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QUALITY CONTROL DATA

Project: FPL OCEC
Pace Project No.: 35305089

QC Batch: 362208 Analysis Method: SM 5310B
QC Batch Method: SM 5310B Analysis Description: 5310B TOC
Associated Lab Samples: 35305089001

METHOD BLANK: 1952185 Matrix: Water
Associated Lab Samples: 35305089001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Organic Carbon	mg/L	0.50 U	1.0	0.50	04/12/17 21:52	

LABORATORY CONTROL SAMPLE: 1952186

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Organic Carbon	mg/L	20	19.4	97	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1952187 1952188

Parameter	Units	35304520004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.2	20	20	19.9	19.9	94	94	80-120	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1952189 1952190

Parameter	Units	35303856001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Total Organic Carbon	mg/L	1.5	20	20	20.4	20.6	95	95	80-120	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

QUALIFIERS

Project: FPL OCEC
Pace Project No.: 35305089

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-O	Pace Analytical Services - Ormond Beach
PASI-SF	Pace Analytical Services - South Florida

ANALYTE QUALIFIERS

I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Compound was analyzed for but not detected.
J(D6)	Estimated Value. The relative percent difference (RPD) between the sample and sample duplicate exceeded laboratory control limits.
J(L1)	Estimated Value. Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
J(M1)	Estimated Value. Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
N2	The lab does not hold NELAC/TNI accreditation for this parameter.
Q	Sample held beyond the accepted holding time. Analysis initiated more than 15 minutes after sample collection.

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3610 Park Central Blvd N
Pompano Beach, FL 33064
954-582-4300

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: FPL OCEC
Pace Project No.: 35305089

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
35305089001	**FA-1**				
35305089001	**FA-1**	EPA 3010	362276	EPA 6010	362442
35305089001	**FA-1**	EPA 3010	363680	EPA 6010	363820
35305089001	**FA-1**	EPA 524.2	361485		
35305089001	**FA-1**	EPA 120.1	362242		
35305089001	**FA-1**	EPA 180.1	362596		
35305089001	**FA-1**	SM 2540C	362230		
35305089001	**FA-1**	SM 2540D	362009		
35305089001	**FA-1**	SM 4500-H+B	362244		
35305089001	**FA-1**	SM 5210B	362232	SM 5210B	362465
35305089001	**FA-1**	SM 2120B	361498		
35305089001	**FA-1**	SM 2320B	361642		
35305089001	**FA-1**	SM 2540B	361468		
35305089001	**FA-1**	SM 4500-Cl D	362067		
35305089001	**FA-1**	SM 4500-S2F	361817		
35305089001	**FA-1**	SM 4500-S2H	362461		
35305089001	**FA-1**	SM 2330B	363092		
35305089001	**FA-1**	EPA 300.0	362786		
35305089001	**FA-1**	EPA 350.1	362097		
35305089001	**FA-1**	EPA 353.2	361467		
35305089001	**FA-1**	EPA 365.1	361459		
35305089001	**FA-1**	EPA 365.4	361709	EPA 365.4	361827
35305089001	**FA-1**	SM 5310B	362208		

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WO#: 35303089

35305089

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Invoice Information:	
Company:	Youngquist Brothers, Inc	Report To:	Clay Fergunson	Attention:	
Address:	15465 Pine Ridge Road	Copy To:		Company Name:	
	Fort Myers, FL 33908			Address:	
Email:	clay@youngquistbrothers.com	Purchase Order #:		Pace Quote:	
Phone:	239-489-4444 Fax:	Project Name:	FPL OCEC	Pace Project Manager:	rossy.guima@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	9252-2

Regulatory Agency
State / Location

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

SAMPLE ID: One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Alkalinity, Cl,SO4,F,NO2,NO	Ortho Phosphorus	BOD 5-day	TOC	Chlorine, Total Residual	TDS, Cond	tss, turbidity, pH	Color	Ammonia, TP	Metals	Sulfide & H2S	Dissolved Metals	Residual Chlorine (Y/N)	
Requested Analysis Filtered (Y/N)																														Y		
1	FA-1	WT	G			4/7	900		13	7	1	2	2	1					1	1	1	2	1	1	1	1	1	1	1	1		FIELD
2																																PH 7.67
3																																TEMP 23.5
4																																COND 1049
5																																DO 2.07
6																																TURB 0.31
7																																CHL 0.00
8																																
9																																
10																																
11																																
12																																

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
YBI #201615	[signature]	4-7-17	1230	[signature]	4/7	1230	
FPL OCEC FAW	[signature]	4/7	1320	Mil Pau	4/7	1320	
WATER QUALITY ANALYSIS	Mil Pau	4-7	1520	[signature]	4/7/17	1520	
FA-1 APT							

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JIM NORTON

SIGNATURE of SAMPLER: [signature] DATE Signed: 04/07/17

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 2 Of 2

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: Youngquist Brothers, Inc	Report To: Clay Fergunson	Attention:	
Address: 15465 Pine Ridge Road	Copy To:	Company Name:	
Fort Myers, FL 33908		Address:	Regulatory Agency
Email: clay@youngquistbrothers.com	Purchase Order #:	Pace Quote:	
Phone: 239-489-4444 Fax:	Project Name: FPL OCEC	Pace Project Manager: rossy.guima@pacelabs.com,	State / Location
Requested Due Date:	Project #:	Pace Profile #:	

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): VOC 524.2	STRONTIUM	Residual Chlorine (Y/N)
13	FA-1	WT	G			4/7	900		4			1	3						3	1	
14																					
15																					
16																					
17																					
18																					
19																					
20																					
21																					
22																					
23																					
24																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	JMNorton / PACE	4/7	1730	Mw Barr	4/7/17	1230	
	Mw Barr	4/7	1530				

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: JIM NORTON

SIGNATURE of SAMPLER: Jim Norton DATE Signed: 04/07/17

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

LABORATORY WATER QUALITY
SAMPLE PARAMETERS

Alkalinity, Phenolphthalein
Alkalinity, Total (As CaCO3)
Methyl orange alkalinity
Chloride
Fluoride
Nitrogen, Nitrate
Nitrogen, Nitrite
Phosphorous, Orthophosphate (as P)
Sulfate
Biochemical Oxygen Demand
Carbon, Total Organic, TOC
Chlorine Demand
Chlorine, Total Residual
Conductance, Specific
Color (Apparent)
Corrosively/LSI (Langelier Sat. Index)
Nitrogen, Ammonia
pH
Phosphate (as PO4)
Phosphorous, Total (as P)
Silica, Dissolved (as SiO2)
Solids, Total Dissolved (TDS)
Solids, Total Suspended (TSS)
Total Residue (103 c)
Turbidity
Sulfide, Hydrogen

Aluminum
Arsenic
Barium
Boron
Calcium
Chromium
Copper
Iron
Lead
Magnesium
Manganese
Potassium
Selenium
Silver
Sodium
Strontium
Zinc
Hardness, Calcium, (as CaCO3)
Hardness, Magnesium as (CaCO3)
Iron-Dissolved
Aluminum-Dissolved
Manganese-Dissolved
Silica-Dissolved
VOC
TOC
Strontium*

* 1 L HNO3

*** Strontium added to list on 3/30/17 for APT Analysis.**

*TOTAL SILICA

Sam... Receipt Form (SCUR)

WO# : 35305089

PM: RYG Due Date: 04/13/17

CLIENT: 36-YOUBRO

Project #

Project Manager:

Client:

Date and Initials of person:

Examining contents: _____

Label: _____

Deliver: _____

pH: _____

Thermometer Used: T-315 Date: 4/7/17 Time: _____ Initials: _____

Samples shorted to lab (If Yes, complete) Shorted Date: NA Shorted Time: _____ Qty: _____

Cooler #1 Temp.°C	1.4 **(Visual)**	0.1 **(Correction Factor)**	1.5 **(Actual)**	☐ Samples on ice, cooling process has begun
Cooler #2 Temp.°C	_____ **(Visual)**	_____ **(Correction Factor)**	_____ **(Actual)**	☐ Samples on ice, cooling process has begun
Cooler #3 Temp.°C	_____ **(Visual)**	_____ **(Correction Factor)**	_____ **(Actual)**	☐ Samples on ice, cooling process has begun
Cooler #4 Temp.°C	_____ **(Visual)**	_____ **(Correction Factor)**	_____ **(Actual)**	☐ Samples on ice, cooling process has begun
Cooler #5 Temp.°C	_____ **(Visual)**	_____ **(Correction Factor)**	_____ **(Actual)**	☐ Samples on ice, cooling process has begun
Cooler #6 Temp.°C	_____ **(Visual)**	_____ **(Correction Factor)**	_____ **(Actual)**	☐ Samples on ice, cooling process has begun

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other _____

Shipping Method: ☐ First Overnight ☐ Priority Overnight ☐ Standard Overnight ☐ Ground ☐ Other _____

Billing: ☐ Recipient ☐ Sender ☐ Third Party ☐ Unknown

Tracking # _____

Custody Seal on Cooler/Box Present: ☐ Yes ☑ No **Seals intact:** ☐ Yes ☑ No **Ice:** ☑ Wet ☐ Blue ☐ None

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

		Comments:
Chain of Custody Present	☑ Yes ☐ No ☐ N/A	
Chain of Custody Filled Out	☑ Yes ☐ No ☐ N/A	
Relinquished Signature & Sampler Name COC	☑ Yes ☐ No ☐ N/A	
Samples Arrived within Hold Time	☑ Yes ☐ No ☐ N/A	
Rush TAT requested on COC	☐ Yes ☑ No ☐ N/A	
Sufficient Volume	☑ Yes ☐ No ☐ N/A	
Correct Containers Used	☑ Yes ☐ No ☐ N/A	
Containers Intact	☑ Yes ☐ No ☐ N/A	
Sample Labels match COC (sample IDs & date/time of collection)	☑ Yes ☐ No ☐ N/A	
All containers needing acid/base preservation have been checked. All Containers needing preservation are found to be in compliance with EPA recommendation: Exceptions: VOA, Coliform, TOC, O&G, Carbamates	☑ Yes ☐ No ☐ N/A ☑ Yes ☐ No ☐ N/A	Preservation Information: Preservative: _____ Lot #/Trace #: _____ Date: _____ Time: _____ Initials: _____
Headspace in VOA Vials? (>6mm):	☐ Yes ☑ No ☐ N/A	
Trip Blank Present:	☐ Yes ☑ No ☐ N/A	

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____

Comments/ Resolution (use back for additional comments): _____

Project Manager Review: _____ Date: _____

FIELD SAMPLING LOG

Arrived On Site Date: ***4/7/2017*** Time: ***8:00*** Departed Site Time: ***10:00***

Sampler's Signature: Jim Norton Sampler's Name: ***Jim Norton***

CLIENT NAME: ***Youngquist Brothers*** PROJECT NAME: ***FPL OCEC FAW Water Quality Analysis***

CLIENT CONTACT: ***Clay Ferguson*** SITE CONTACT: ***Clay Ferguson***

Personnel on Site: ***Clay Ferguson***

Site Location: ***FPL OCEC 21505 State Road 60, Vero Beach***

Ambient Conditions: ***Cool / Sunny / Breezy***

Brief Description of Field Activities: ***Collection of grab samples from FA-1***

Field Equipment Used: ***None***

Decon Procedures: ☐ Yes ☒ No If *Yes*, Please Describe:

Field Filtering: ☐ Yes ☐ No If *Yes*, Please Describe: ***Dissolved Metals Only***

Sample Matrix: ☐ DW ☒ GW ☐ WW ☐ SU ☐ STU ☐ SO ☐ SE ☐ ML ☐ Other:

Physical Characteristics of Sample:

Sampling Method: ☒ GRAB ☐ COMPOSITE

For Composite Sampling; Document Sampling Procedure for Collecting a Representative Sample:

☐ QC Blanks ☐ Precleaned EQB ☐ Field Cleaned EQB

☐ Field Blanks ☐ Trip Blanks ☐ QC Blanks ☐ Duplicate ☐ Replicate Samples

Split Samples (explain):

Sx. Location	Time	Parameters		pH	Temp	Cond	DO	Turb	R Chl
FA-1	9:00	Alk, Cl, SO4, NO2, NO3, Ortho Phos, BOD, TOC, Total R Chl, TDS, Cond, TSS, Turb, pH, Color, Metals, Sulfide&H2S, Dissolved Metals, VOC 524.2, Strontium		7.67	23.5	1049.0	2.07	0.31	0.00

Calibration of Meters

Meter	Y/N	Standard	Slope	Variance	Value
pH		4.0			***4.1***
pH		7.0			***7.0***
pH		10.0			***10.0***
Conductivity		1412			***1416***
D.O.		N/A	*Adjust to 100% from:*		***104.0%***
Turbidity		1.0			***10.10***
Turbidity		10.0			***19.50***

Other Notation's or Anomalies:

YBI #201615