

# **CLECO POWER LLC DOLET HILLS POWER STATION**

**ASH BASINS NO. 1 AND NO. 2  
MANSFIELD, LA**

**2017 Annual Groundwater Monitoring Report  
for the Coal Combustion Residuals Rule**

**January 2018**



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## 1.0 INTRODUCTION

Cleco Power LLC (Cleco) hereby presents the 2017 Annual Groundwater Monitoring report for Ash Basins No. 1 and No. 2 at the Dolet Hills Power Station (DHPS) located in Mansfield, Louisiana (Figure 1). This report summarizes groundwater sampling and analysis activities completed in accordance with applicable portions of the U.S. Environmental Protection Agency (EPA) Coal Combustion Residuals (CCR) Rule.

## 2.0 FACILITY INFORMATION

Cleco owns and operates the DHPS located at 963 Power Plant Road, Mansfield, Louisiana 71052. The Ash Basins in service at the plant have been permitted to operate by the Louisiana Department of Environmental Quality (LDEQ) Waste Permits Division. The materials deposited in these facilities are non-hazardous, on-site-generated materials only.

As required by the CCR Rule part §257.90, DHPS has a groundwater monitoring well system to evaluate the groundwater quality conditions near the Ash Basins. The monitoring system consists of newly installed monitoring wells and monitoring wells installed previously to conduct groundwater monitoring required by DHPS's LDEQ approved solid waste permits. A total of twelve monitoring wells have been installed per applicable portions of §257.91. The uppermost water bearing zone that is laterally continuous beneath the Ash Basins is referred to as Zone 4. Locations of the monitoring wells can be found on Figure 2, and a table of monitoring well construction details can be found in Table 1.

## 3.0 FIELD ACTIVITIES

Groundwater sampling events were conducted by Cleco approved contract personnel between May 2016 and September 2017, in accordance with applicable portions of §257.93.

Prior to purging and sampling activities, the depth-to-water below the top of each well casing was measured and recorded prior to purging each well during each sampling event. Water levels were measured to the nearest 0.01 foot from the top of casing using an electronic water level indicator. Total depth of each well was also measured to confirm that the screened interval was open to groundwater flow. Water level measurements were recorded in groundwater sampling forms. The water level measurements were subtracted from the top of casing elevations to obtain the groundwater elevations.

Groundwater purging and sampling activities were conducted using electric submersible pumps. These activities were conducted in accordance with applicable portions of Sections 6.1, 6.2, 6.3 and 8.1.4 of the *Standard Guide for Sampling Groundwater Monitoring Wells* (ASTM International, Publication D4448). Non-dedicated sampling equipment which came into contact with groundwater samples was decontaminated prior to sampling each well to reduce the potential for cross-contamination. Groundwater samples were collected by filling the sample containers directly from the disposable tubing connected to the pump or from a disposable bailer. Care was taken to minimize agitation of the samples. Samples were placed in laboratory-provided plastic containers with appropriate preservatives, per Section 9 of ASTM D4448. Samples were properly preserved on ice in the field and shipped to Pace Analytical Services, LLC of St. Rose, Louisiana, for analysis of the CCR groundwater monitoring parameters by the following methods: chloride, fluoride and sulfate by 300.0; total dissolved solids by 2540C; metals by 6020, mercury by 7470, radium 226 by 903.1, and radium 228 by 904. Full chain-of-custody protocols were observed during sample collection, transportation, and analysis. Sample shipment/transport procedures were conducted per Sections 9.9 through 9.11 of ASTM D4448.

**4.0 GROUNDWATER FLOW EVALUATION**

Zone 4 is the most suitable water-bearing zone to monitor groundwater quality at the Ash Basins. The potentiometric surface maps prepared for Zone 4 (Figures 3 through 12) indicate that groundwater flow in Zone 4 mimics the topography of the site. This pattern of groundwater flow is consistent in the potentiometric surface maps, indicating little significant fluctuation in groundwater flow.

Groundwater flow rate was evaluated using the groundwater flow equation,  $v = [k(dh/dl)] / n_e$ . For this equation,  $v$  is groundwater flow velocity in ft/day,  $k$  is hydraulic conductivity in ft/day,  $dh/dl$  is hydraulic gradient in ft/ft, and  $n_e$  is effective porosity (unitless).

For Zone 4, hydraulic conductivity ( $k$ ) values ranging from 5 to 20 ft/day was assumed based on the silty very fine- to fine-grained sand observed in soil cuttings from soil borings completed at the site (Heath, 1989). Hydraulic gradient ( $dh/dl$ ) values are listed below based on potentiometric surface maps completed for Zone 4. An effective porosity ( $n_e$ ) of 0.2 was assumed based on the soil types of Zone 4 (Fetter, 2001). Using these values, the groundwater flow rate ( $v$ ) is estimated to range from 0.25 to 7 feet/day as listed below.

Date	Hydraulic Gradient (feet/feet)	Estimated Groundwater Flow Velocity (feet/day)
May 2016	0.01 to 0.06	0.25 to 6
June 2016	0.01 to 0.06	0.25 to 6
November 2016	0.01 to 0.02	0.25 to 2
December 2016	0.01 to 0.07	0.25 to 7
January 2017	0.01 to 0.06	0.25 to 6
February 2017	0.01 to 0.06	0.25 to 6
May 2017	0.01 to 0.06	0.25 to 6
June 2017	0.01 to 0.06	0.25 to 6
July 2017	0.01 to 0.07	0.25 to 7
August 2017	0.01 to 0.06	0.25 to 6

It is important to note that this is an advective rate and does not take into account potential hydrogeological heterogeneities such as adsorption, biodegradation, dispersion, or other retarding factors in the groundwater flow in this zone. Additionally, variations in the advective flow may occur due to potential lateral geological heterogeneities.

**5.0 ANALYTICAL RESULTS**

Groundwater samples collected at the Ash Basins were analyzed for the CCR Rule detection monitoring parameters pH, boron, calcium, chloride, fluoride, sulfate, and total dissolved solids (TDS) using appropriate EPA approved analytical methods. Results show frequent detections of all parameters in both up- and downgradient monitoring wells at the Ash Basins. Analytical results summary tables are provided in Tables 2 through 12.

**6.0 STATISTICAL EVALUATION**

Statistical evaluations of groundwater data have been performed per applicable portions of §257.93.f. The goal of the statistical evaluation is to determine if there is statistically significant evidence to show that facility operations may have adversely affected groundwater quality. Statistical evaluations are

conducted to determine if there are any statistically significant increases (SSIs) between groundwater quality upgradient and groundwater quality downgradient of the Ash Basins.

Due to statistically significant variation found in upgradient monitoring well data, all detection monitoring parameters were statistically evaluated using intrawell prediction limits. Intrawell tests are within well comparisons. In the case of limit-based tests, historical data from within a given monitoring well for a given parameter are used to construct a limit. Compliance points are compared to the limit to determine whether a change is occurring on a per-well/per-parameter basis. If the assumption of normality was not rejected for the background data set, then a parametric prediction limit was calculated. If the assumption of normality was rejected for the background data set, then a non-parametric prediction limit was calculated, in which case, the prediction limit was based on the highest value in the background data set.

Intrawell limit-based tests are recommended when there is evidence of spatial variation in groundwater quality, particularly among upgradient monitoring wells, as it is inappropriate to pool those data across monitoring wells for the purpose of creating interwell limits for comparison with compliance monitoring well data. Intrawell tests may be used at both new and existing facilities. Data used in the intrawell limit-based tests were screened for outliers, which, if found, were removed from the background data set prior to constructing limits for each well/parameter pair.

Verification resampling for SSIs will only be conducted for SSIs generated in downgradient wells via intrawell methodology. Intrawell statistics have been performed on all wells; however, since the goal of the statistical evaluation is to determine if there is statistically significant evidence to show that facility operations may have adversely affected groundwater quality downgradient of the facilities, only downgradient wells will be subject to verification resampling.

Intrawell statistical analysis of the August 2017 data showed that SSIs were generated for chloride in OW-32; fluoride in OW-17A, OW-19, OW-22 and OW-38; pH in OW-19; sulfate in OW-31; and TDS in OW-32. Verification resampling was performed for the SSIs generated in downgradient wells (OW-17A, OW-31, OW-32 and OW-38). The verification resampling results have been incorporated into updated intrawell statistical analyses which indicate that none of the SSIs initially reported in downgradient wells have been confirmed.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

- Cleco DHPS has a monitoring well system to monitor groundwater quality at Ash Basins No. 1 and No. 2 per applicable portions of §257.91. The network consists of five upgradient and seven downgradient monitoring wells.
- Cleco conducted sufficient detection monitoring sampling events, per applicable portions of §257.93 and §257.94.
- Potentiometric surface evaluation at the Ash Basins indicates consistent groundwater flow to the west.
- Statistical evaluations of data conducted per applicable portions of §257.93 indicate that no confirmed SSIs have been generated in downgradient monitoring wells.
- Semi-annual detection monitoring sampling events are tentatively scheduled for May and November of 2018. Data generated during these sampling events will be included in the next annual report.

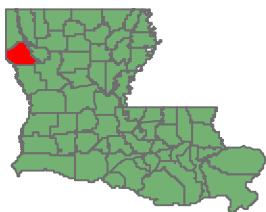
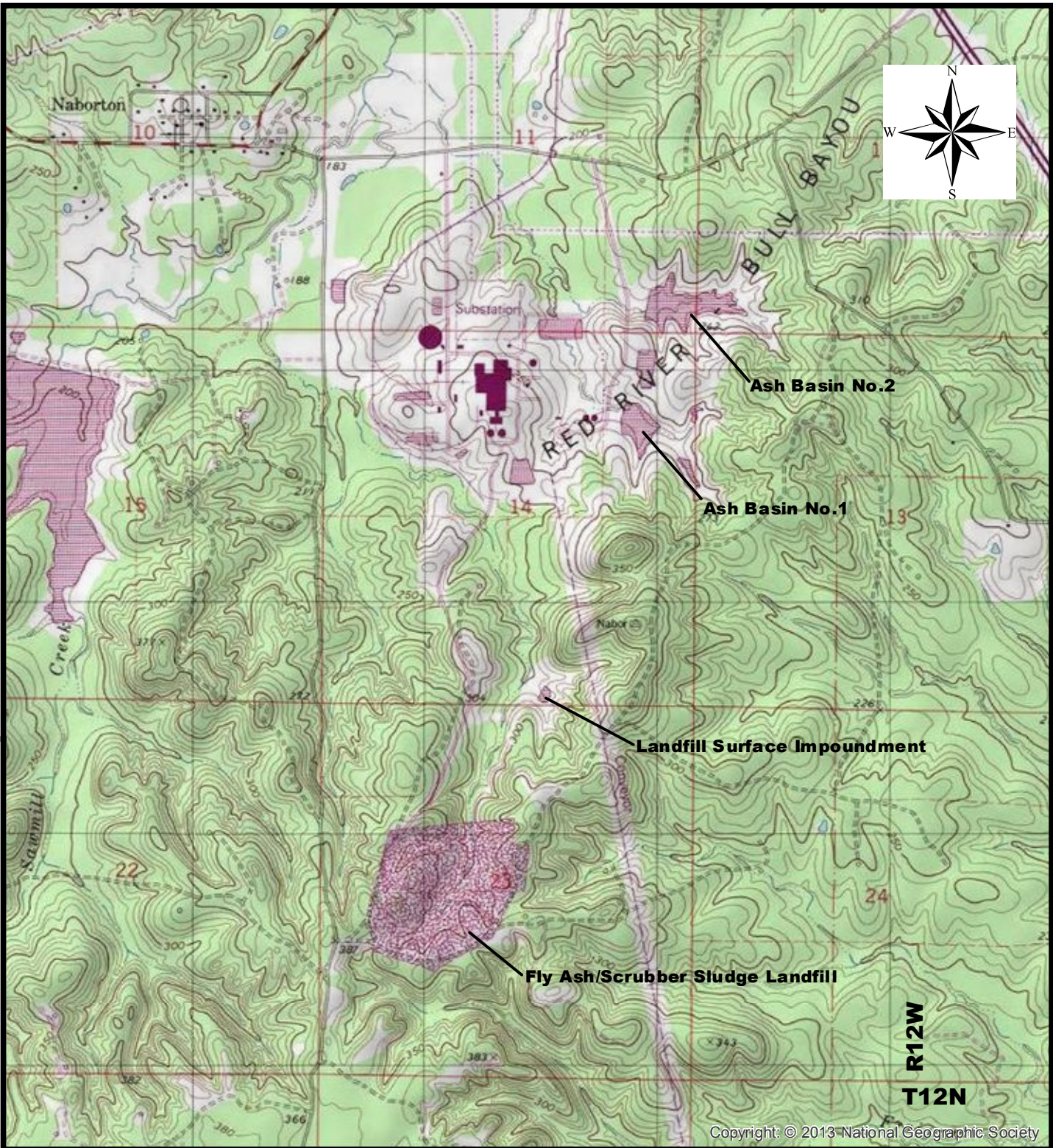
**8.0 CERTIFICATION**

I hereby certify this annual groundwater monitoring report for Cleco Power LLC. I am a duly licensed Professional Engineer under the laws of the State of Louisiana.



<u>Signature</u>	<u>27124</u>
<u>Bradley E. Bates</u>	<u>Professional Engineer</u>
<u>Name</u>	<u>Title</u>
<u>Eagle Environmental Services, Inc.</u>	<u>1/10/18</u>
<u>Company</u>	<u>Date</u>





**Note:**

U.S.G.S. Quadrangle "Bayou Pierre Lake, LA" at scale 1:24,000

**CLECO Corporation**

Dolet Hills Power Station

## Site Location Map

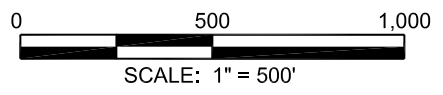
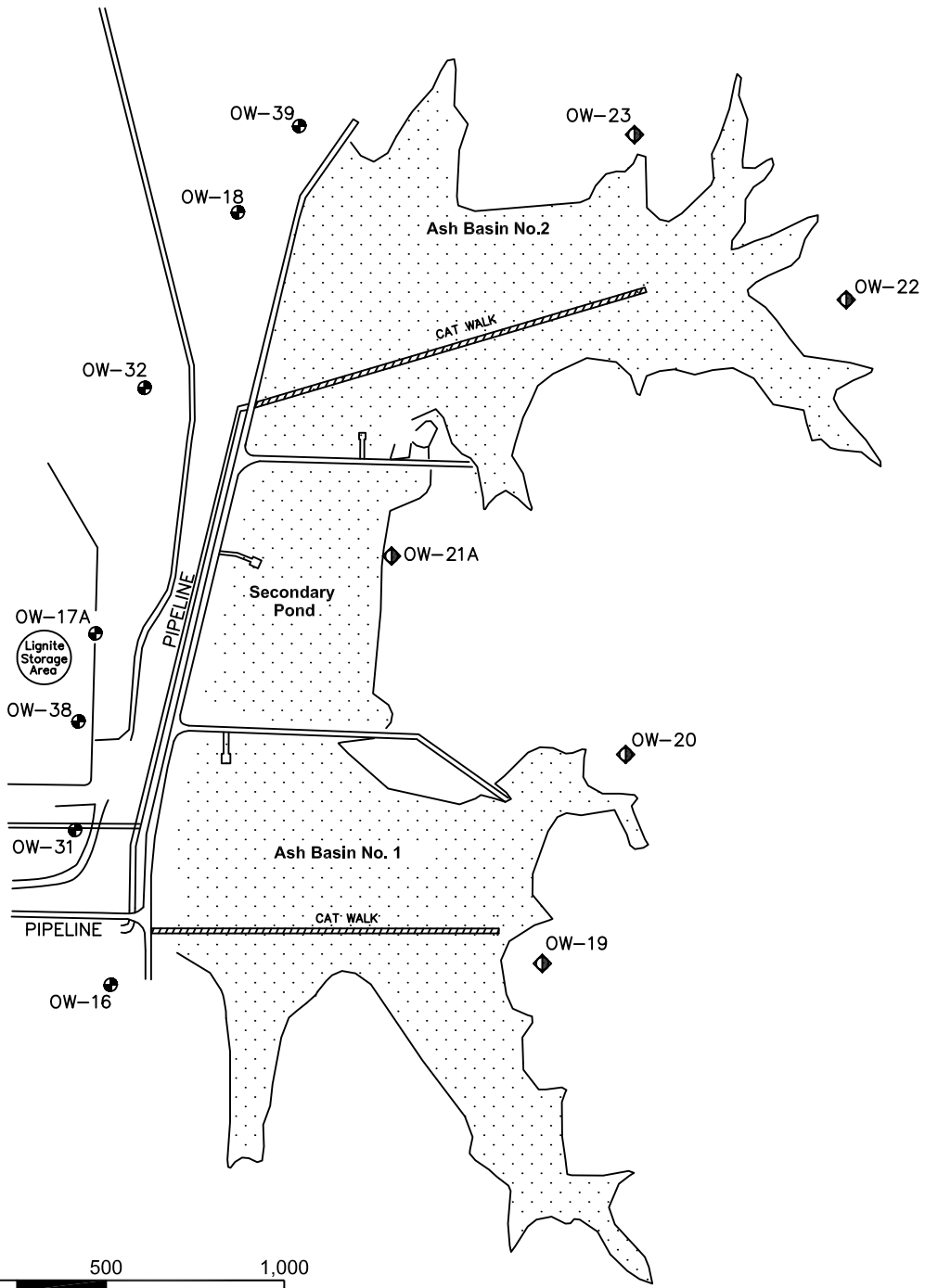
DeSoto Parish, Louisiana





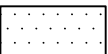
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Approved:	JM
Date:	3/23/17
Dwg. No.:	01-17-0168-C001

**FIGURE 1**





**Legend**

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-             Permitted Facility

**CLECO Corporation**  
Dolet Hills Power Station

**Zone 4 Monitoring Wells Location Map**

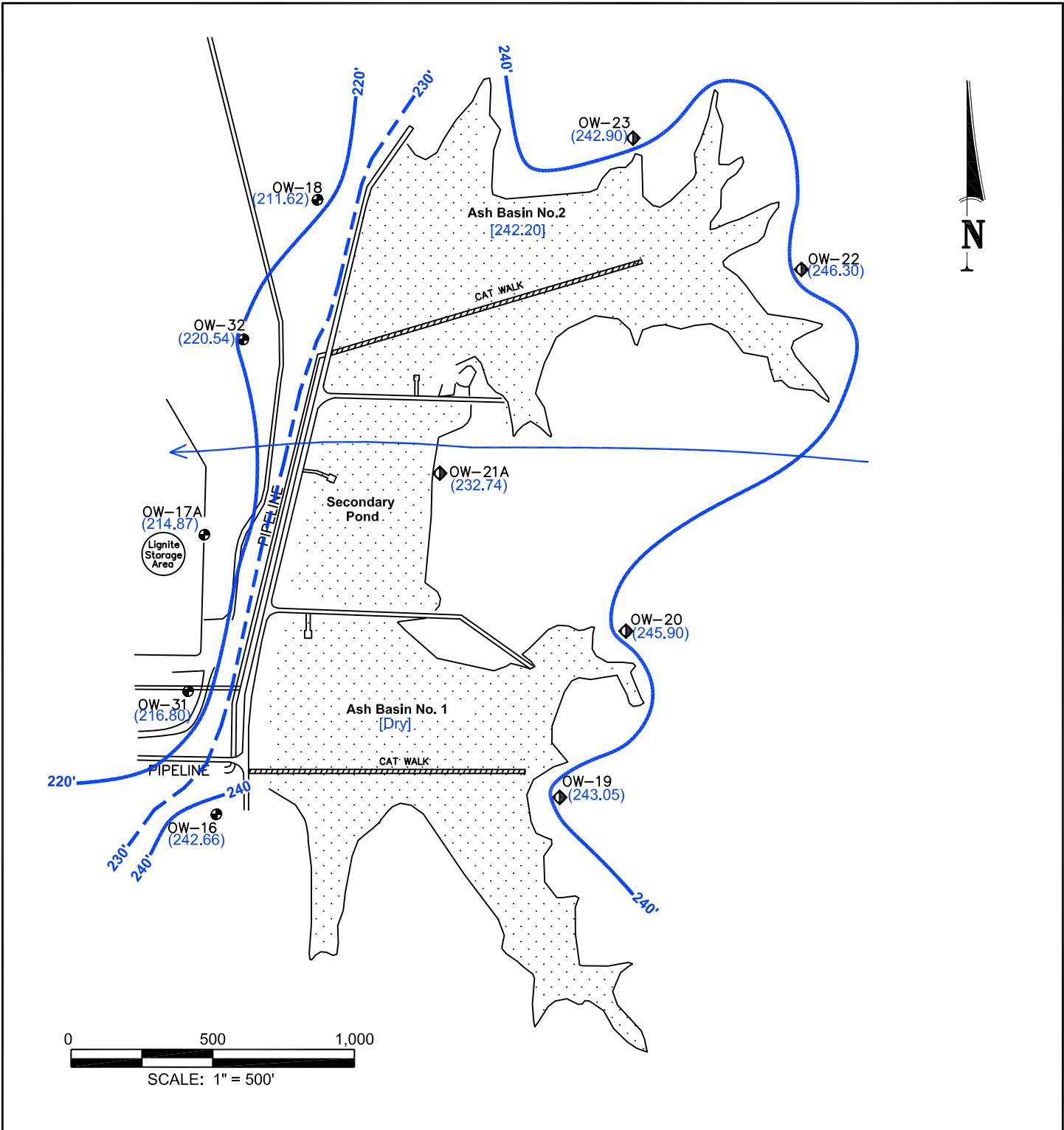
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**Figure 2**

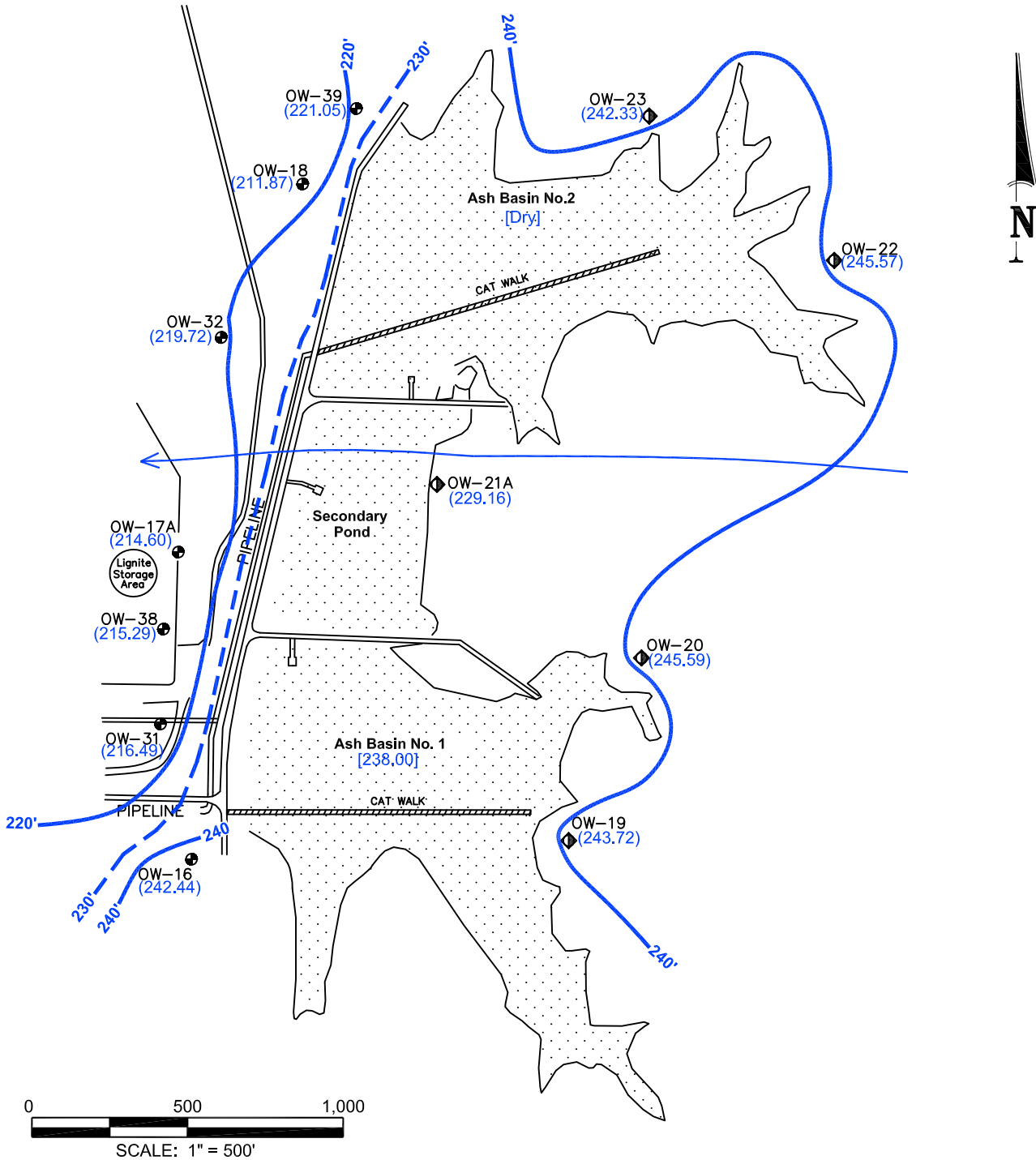






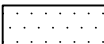

### Legend

- OW-16 Zone 4 Compliance Monitoring Well Location
- OW-23 Zone 4 Background Monitoring Well Location
- Permitted Facility
- (242.66) Potentiometric Surface Elevation (ft. NGVD)
- [242.20] Surface Water Elevation (ft. NGVD)
- 240' — Potentiometric Surface Elevation Contour Line (ft. NGVD)
- Inferred Groundwater Flow Direction

 Dolet Hills Power Station											
<b>Potentiometric Surface Map</b> <b>May 2016</b>											
DeSoto Parish, Louisiana											
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<b>Figure 3</b>											



## Legend

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (242.44)      Potentiometric Surface Elevation (ft. NGVD)
- [238.00]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction



Dolet Hills Power Station

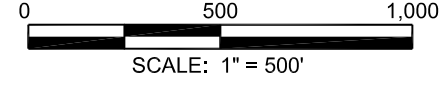
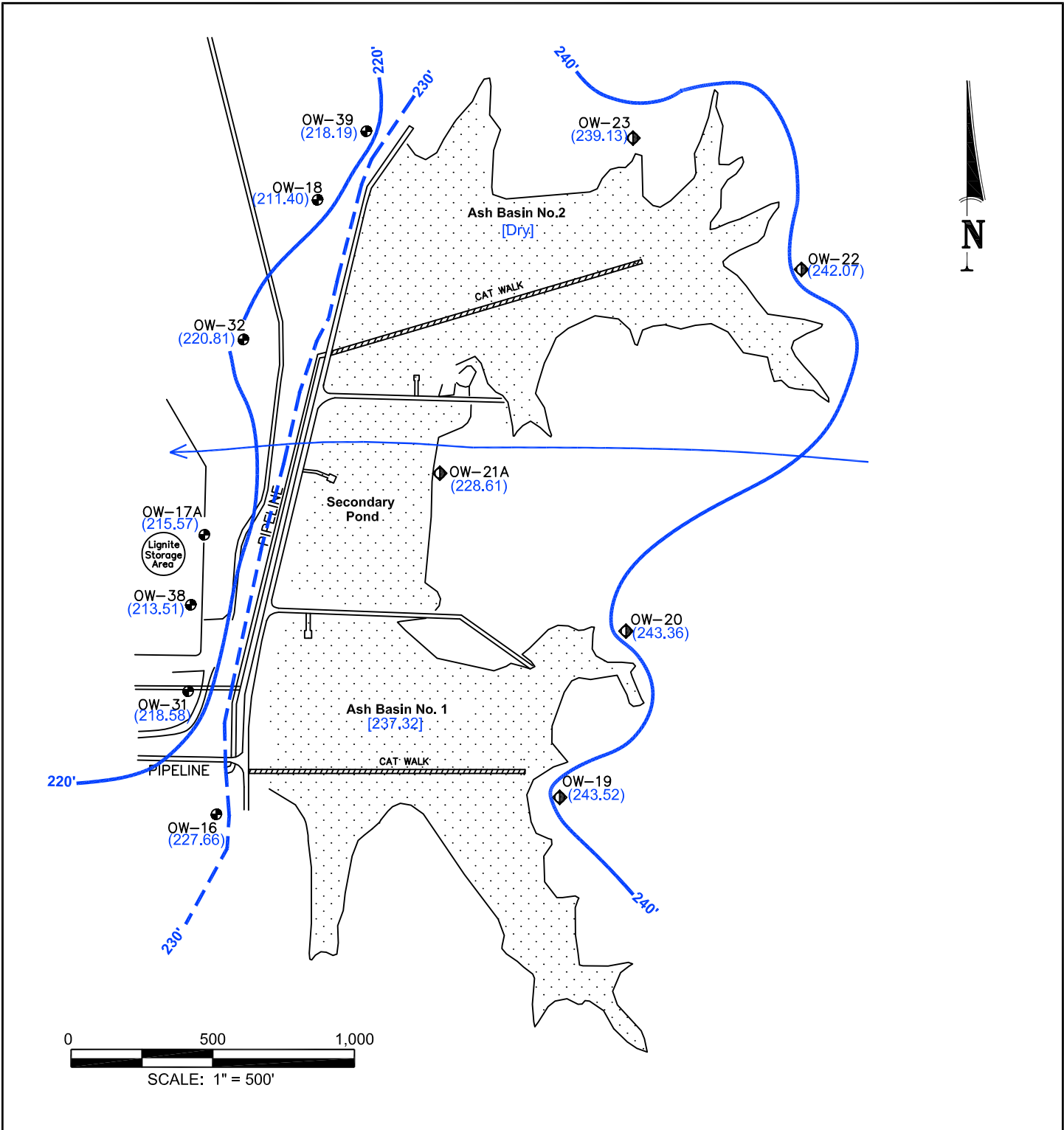
### Potentiometric Surface Map June 2016

DeSoto Parish, Louisiana





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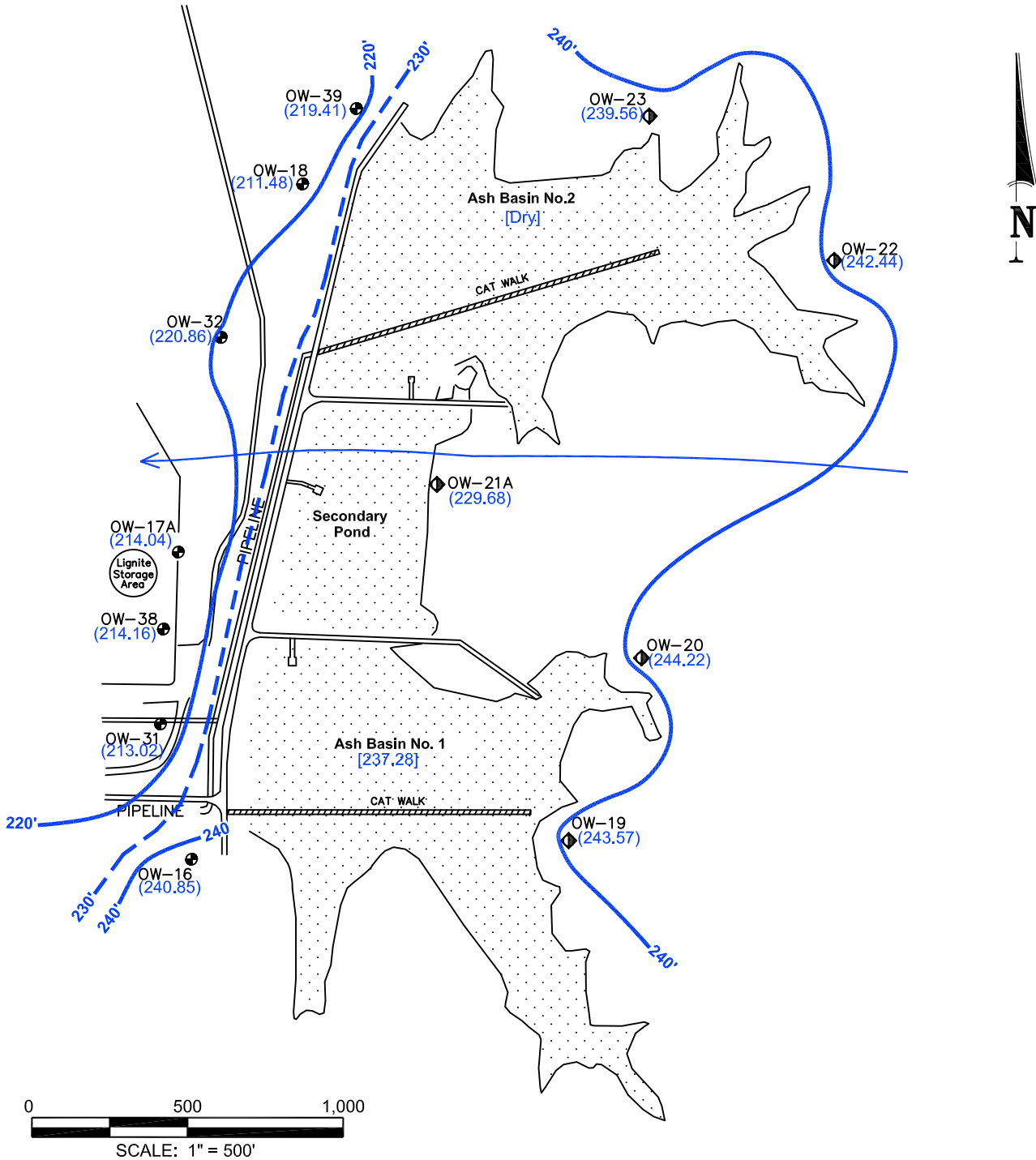
**Figure 4**







### Legend

- OW-16 Zone 4 Compliance Monitoring Well Location
- OW-23 Zone 4 Background Monitoring Well Location
- Permitted Facility
- (227.66) Potentiometric Surface Elevation (ft. NGVD)
- [237.32] Surface Water Elevation (ft. NGVD)
- 240' — Potentiometric Surface Elevation Contour Line (ft. NGVD)
- ← Inferred Groundwater Flow Direction

 Dolet Hills Power Station											
<b>Potentiometric Surface Map</b> <b>November 2016</b>											
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<b>Figure 5</b>											



## Legend

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (240.85)      Potentiometric Surface Elevation (ft. NGVD)
- [237.28]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction



Dolet Hills Power Station

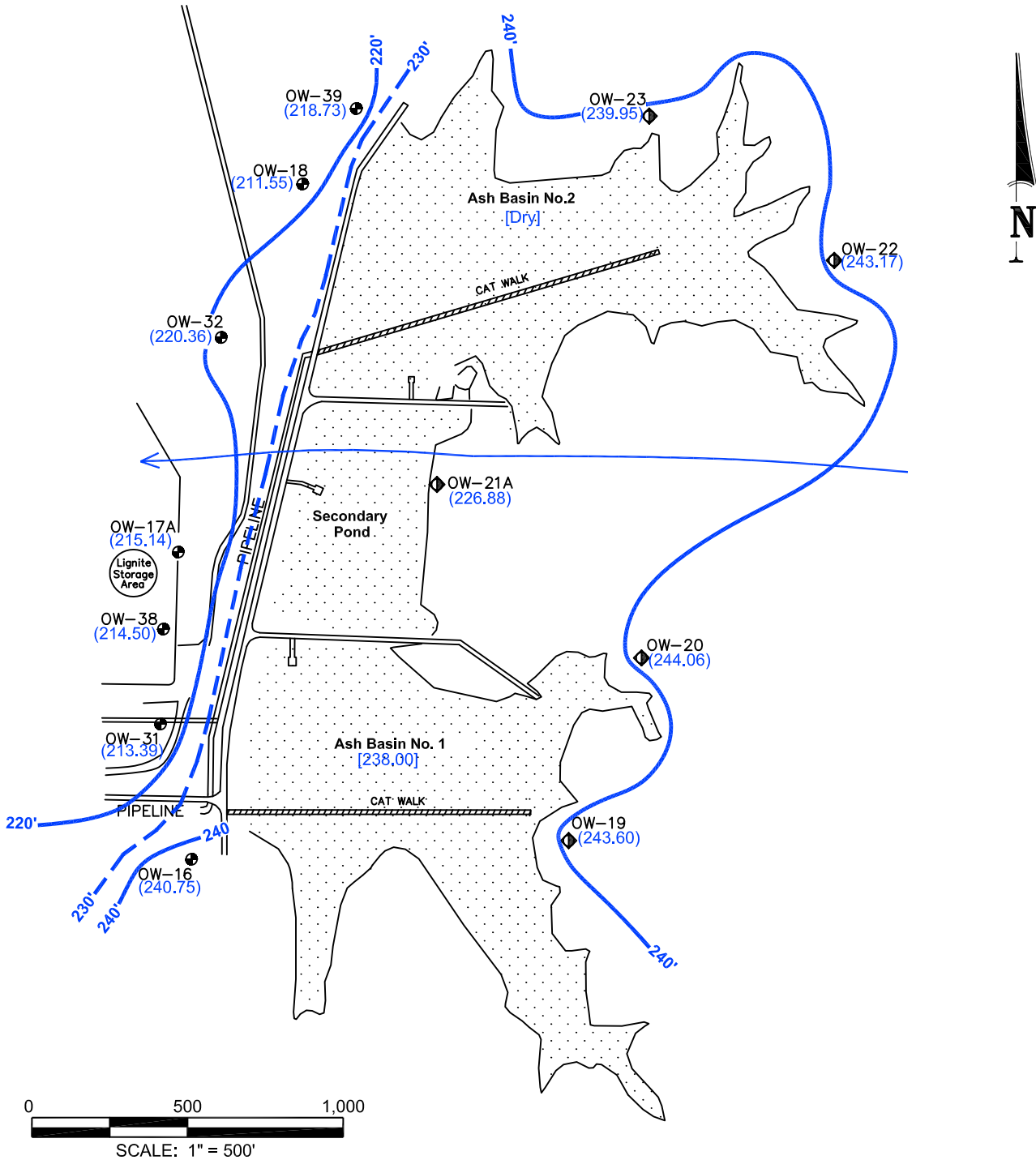
## Potentiometric Surface Map December 2016

DeSoto Parish, Louisiana







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**Figure 6**



## Legend

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (243.60)      Potentiometric Surface Elevation (ft. NGVD)
- [238.00]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction



Dolet Hills Power Station

## Potentiometric Surface Map January 2017

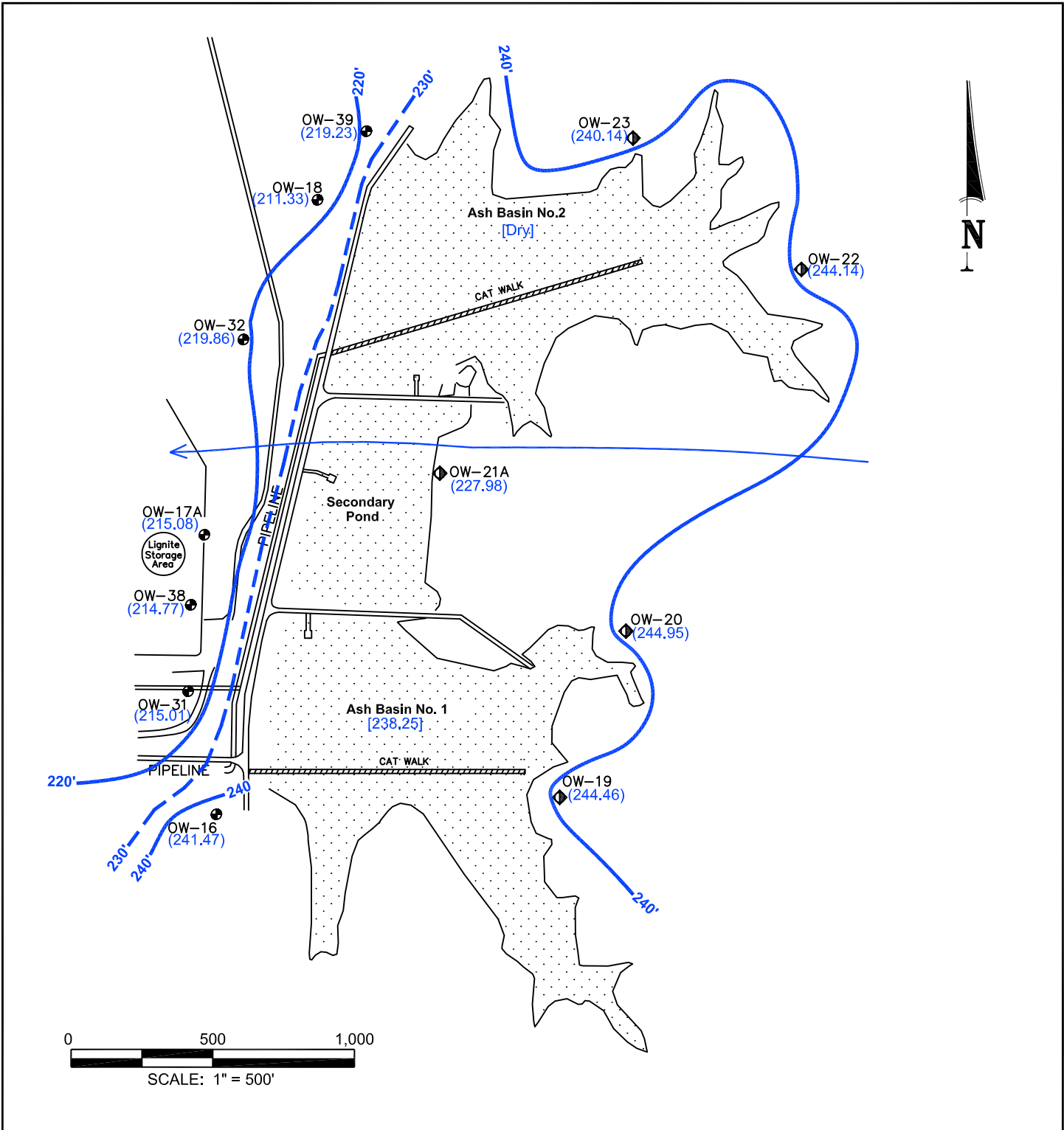
DeSoto Parish, Louisiana



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**Figure 7**





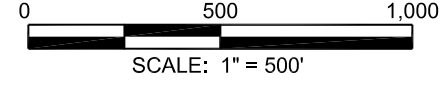
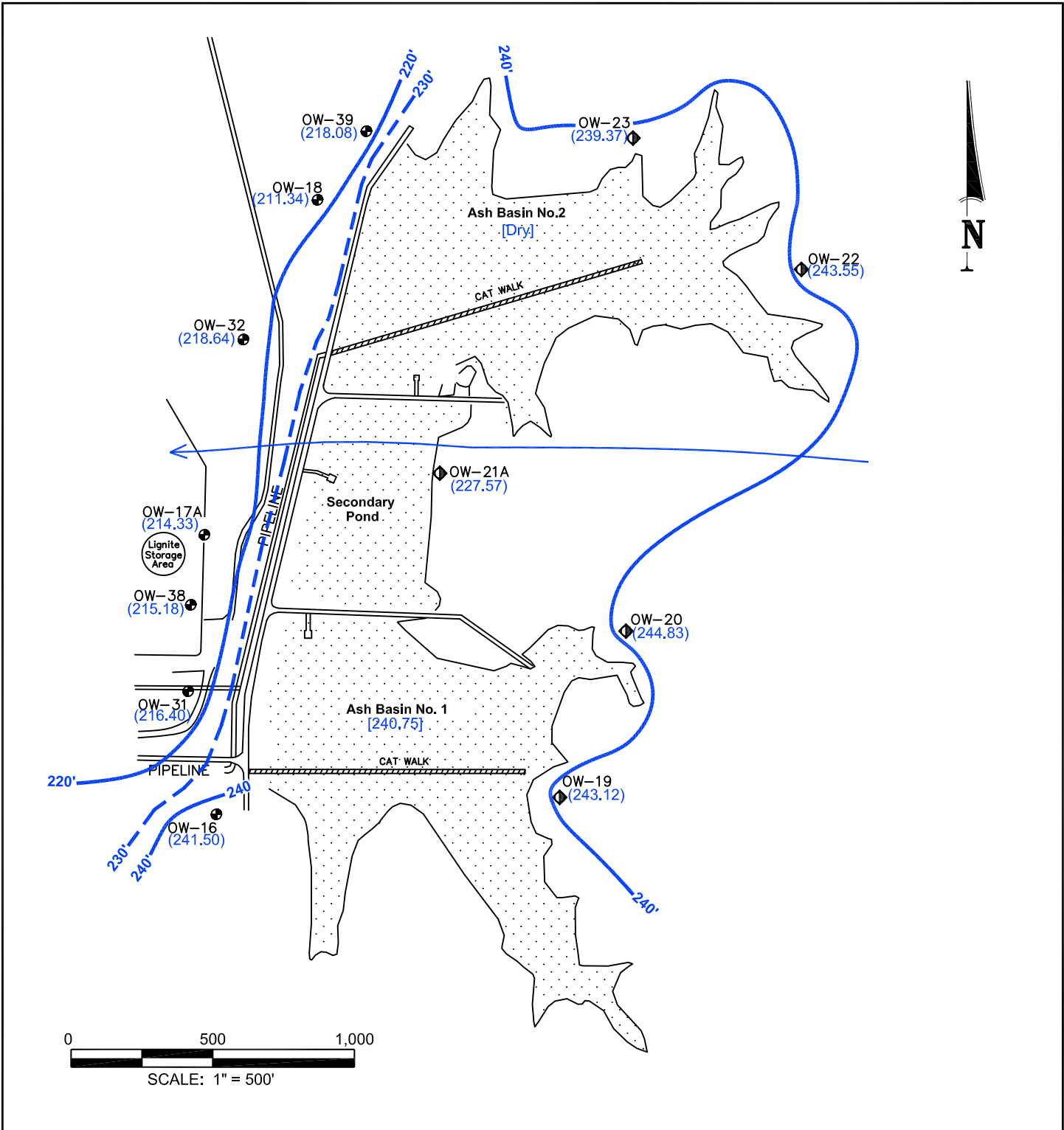


0 500 1,000  
SCALE: 1" = 500'

### Legend

- OW-16 Zone 4 Compliance Monitoring Well Location
- ◆ OW-23 Zone 4 Background Monitoring Well Location
- ▨ Permitted Facility
- (244.46) Potentiometric Surface Elevation (ft. NGVD)
- [238.25] Surface Water Elevation (ft. NGVD)
- 240' — Potentiometric Surface Elevation Contour Line (ft. NGVD)
- ← Inferred Groundwater Flow Direction

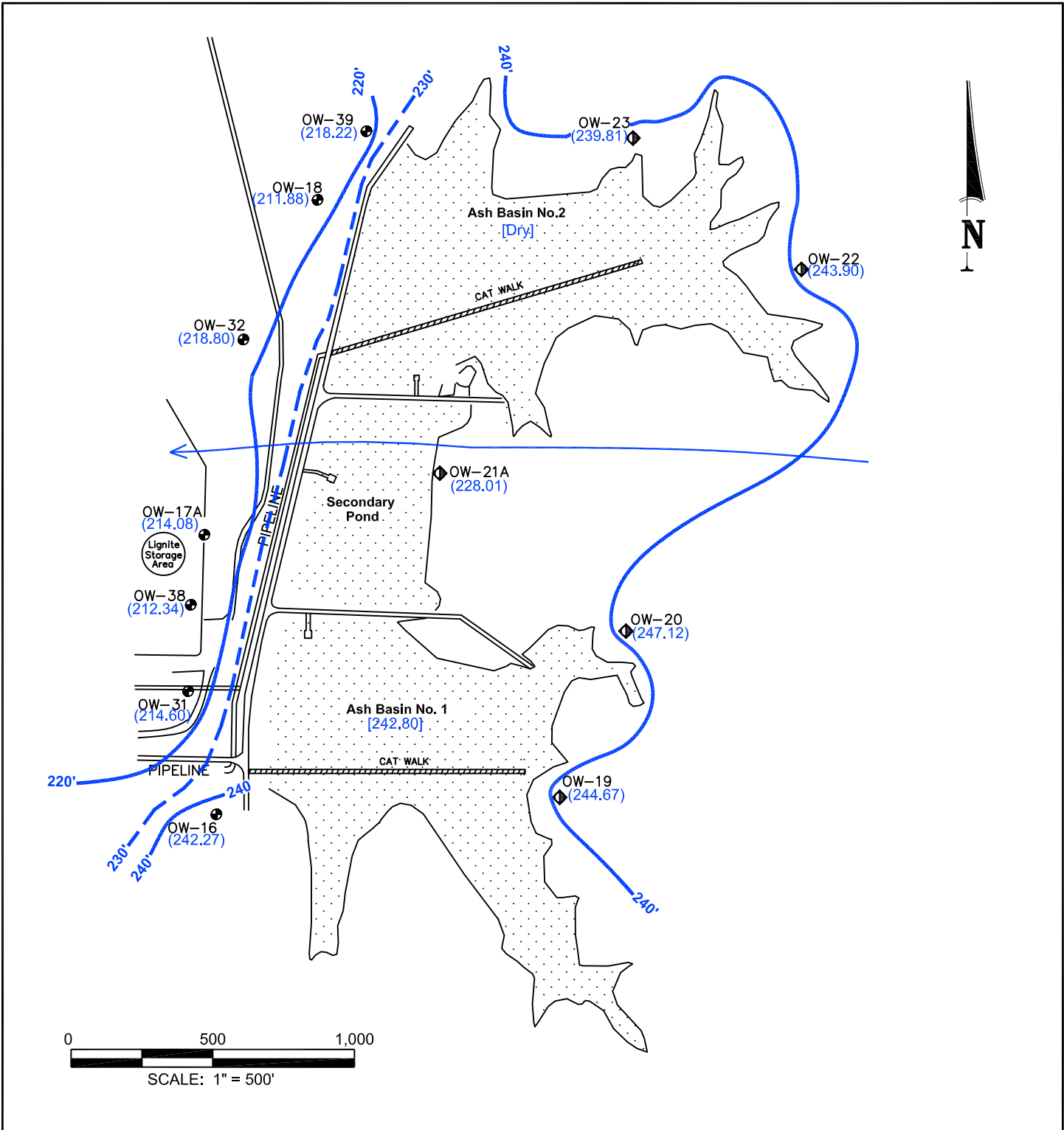
 Dolet Hills Power Station											
<b>Potentiometric Surface Map</b> <b>February 2017</b>											
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<b>Figure 8</b>											





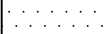

### Legend



- OW-16      Zone 4 Compliance Monitoring Well Location
- OW-23      Zone 4 Background Monitoring Well Location
- Permitted Facility
- (241.50)      Potentiometric Surface Elevation (ft. NGVD)
- [240.75]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
- Inferred Groundwater Flow Direction

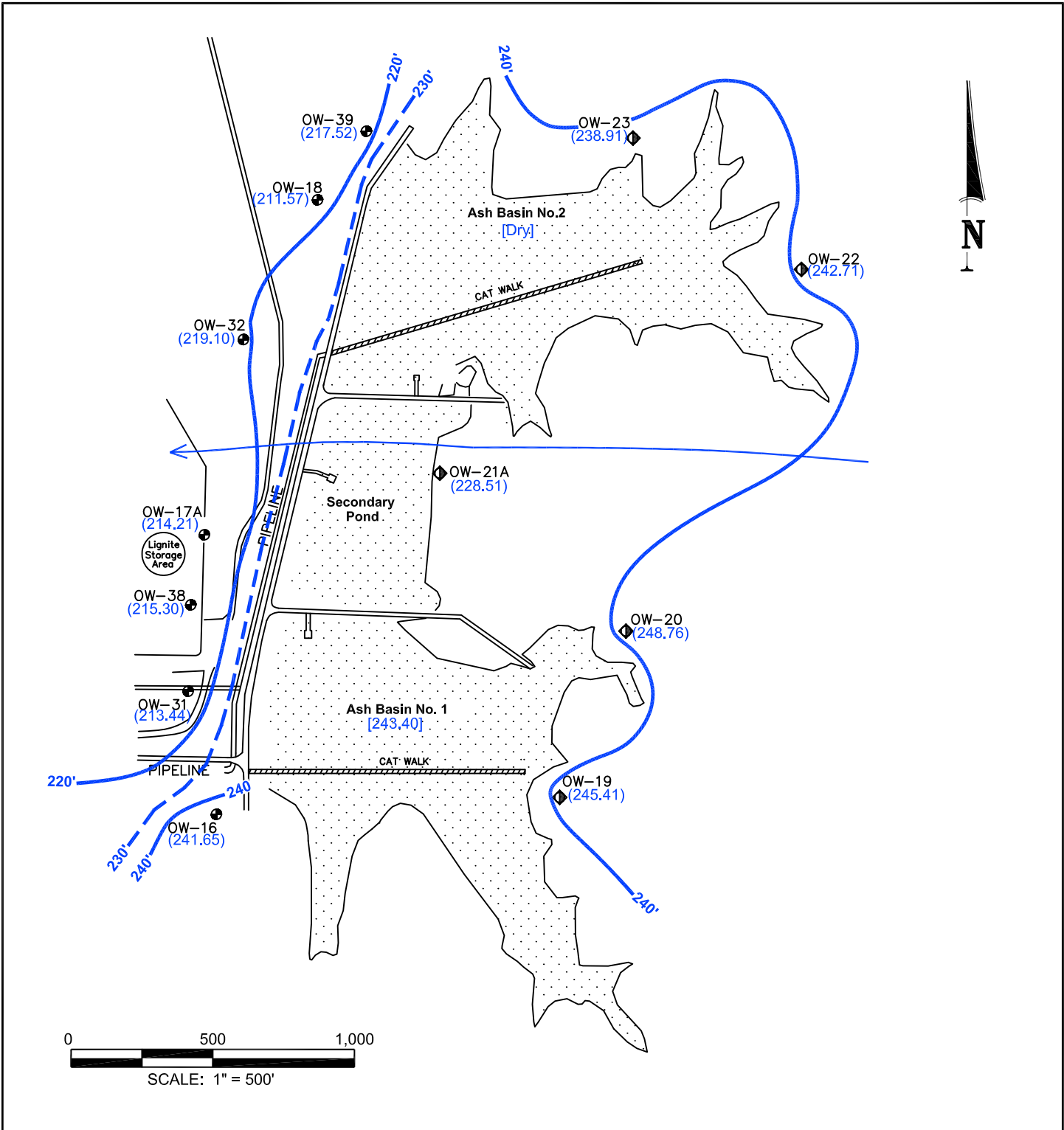
<b>CLECO Corporation</b> Dolet Hills Power Station											
<b>Potentiometric Surface Map</b> <b>May 2017</b>											
DeSoto Parish, Louisiana											
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<b>Figure 9</b>											





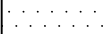

### Legend



-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (242.27)      Potentiometric Surface Elevation (ft. NGVD)
- [242.80]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction

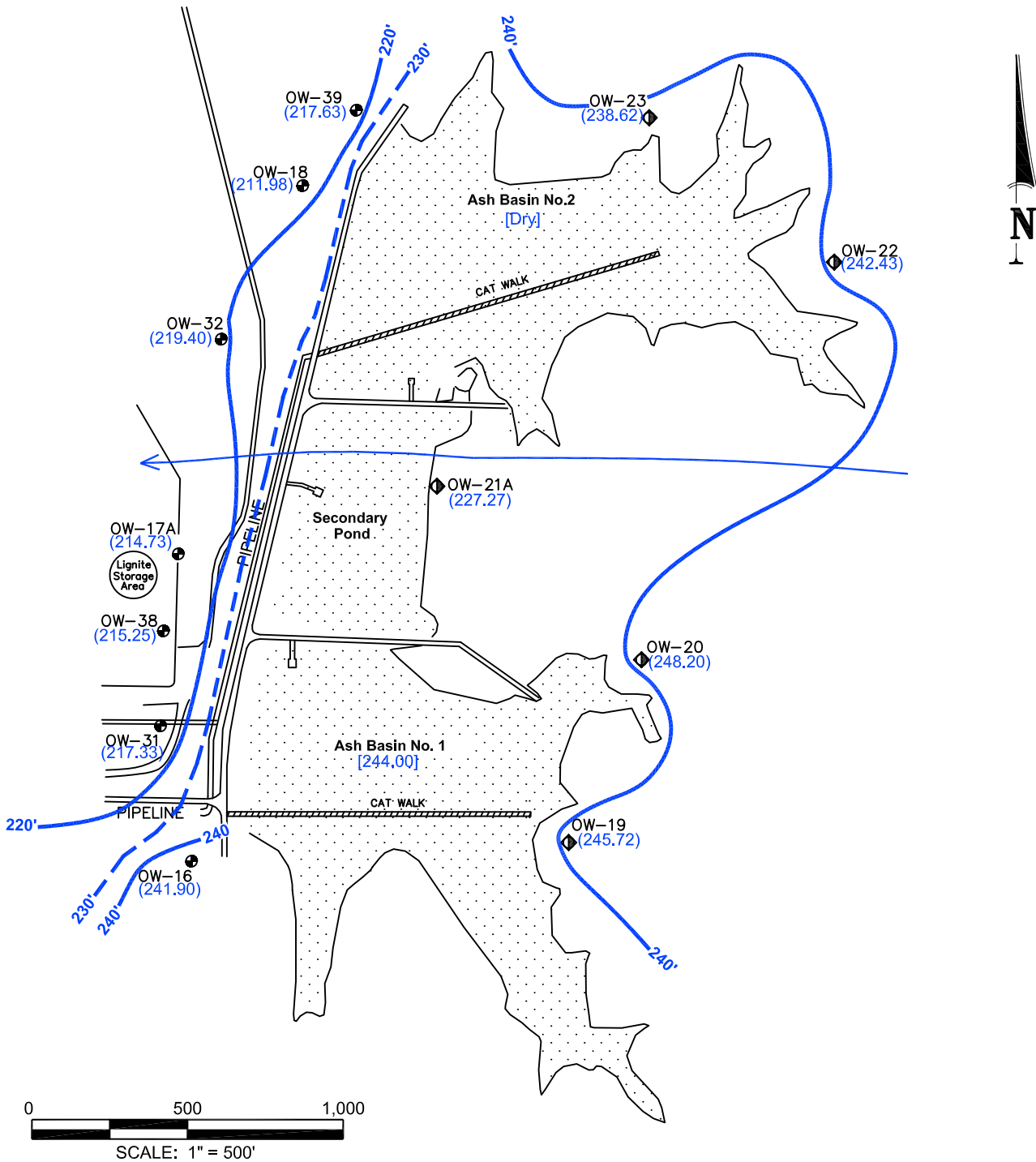
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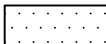

### Legend

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (241.65)      Potentiometric Surface Elevation (ft. NGVD)
- [243.40]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction

 Dolet Hills Power Station											
<b>Potentiometric Surface Map</b> <b>July 2017</b>											
DeSoto Parish, Louisiana											
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<b>Figure 11</b>											



## Legend

-  OW-16      Zone 4 Compliance Monitoring Well Location
-  OW-23      Zone 4 Background Monitoring Well Location
-       Permitted Facility
- (241.90)      Potentiometric Surface Elevation (ft. NGVD)
- [244.00]      Surface Water Elevation (ft. NGVD)
- 240' ———      Potentiometric Surface Elevation Contour Line (ft. NGVD)
-       Inferred Groundwater Flow Direction



Dolet Hills Power Station

## Potentiometric Surface Map August 2017

DeSoto Parish, Louisiana



Drawn:	JP
Checked:	JM
Approved:	JM
Date:	9/12/17
Dwg. No.:	01-17-0168-D006

**Figure 12**





Table 1  
Monitoring Well Information

Cleco Dolet Hills Power Station  
Ash Basins

Well Number	OW-16	OW-17A	OW-18	OW-19	OW-20	OW-21A
Up or Down Gradient	D	D	D	U	U	U
Ash Basin Unit Monitored	AB No. 1	AB No. 1	AB No. 2	Both	Both	Both
Latitude (dd°mm'ss")	32°03'26"	32°03'36"	32°03'47"	32°03'26"	32°01'52"	32°01'56"
Longitude (dd°mm'ss")	93°31'52"	93°31'53"	93°31'49"	93°31'52"	93°33'31"	93°33'41"
Casing Elevation (ft NGVD)	254.95	231.57	218.44	260.01	258.84	244.40
Well Depth (ft bgs)	42.0	45.3	31.5	34.1	31.8	31.9
Screen Length (ft)	10	10	10	10	10	10
Top of Screen (ft NGVD)	217.97	194.13	194.17	230.98	234.39	219.93
Bottom of Screen (ft NGVD)	207.97	184.13	184.17	220.98	224.39	209.93
Casing Diameter & Material	4" PVC	4" PVC	4" PVC	4" PVC	4" PVC	4" PVC

Well Number	OW-22	OW-23	OW-31	OW-32	OW-38	OW-39
Up or Down Gradient	U	U	D	D	D	D
Ash Basin Unit Monitored	Both	Both	AB No. 1	AB No. 2	AB No. 1	AB No. 2
Latitude (dd°mm'ss")	32°02'07"	32°02'10"	32°01'51"	32°02'05"	32°01'55"	32°02'10"
Longitude (dd°mm'ss")	93°33'22"	93°33'31"	93°33'51"	93°33'48"	93°33'50"	93°33'44"
Casing Elevation (ft NGVD)	256.98	255.55	221.71	237.65	221.60	228.96
Well Depth (ft bgs)	31.1	38.4	29.5	30.0	37.3	32.5
Screen Length (ft)	10	10	10	10	10	10
Top of Screen (ft NGVD)	234.19	224.57	199.11	214.7	192.36	203.69
Bottom of Screen (ft NGVD)	224.19	214.57	189.11	204.7	182.36	193.69
Casing Diameter & Material	4" PVC	4" PVC	2" PVC	2" PVC	2" PVC	2" PVC



Table 2  
May 2016 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32
		5/4/16	5/4/16	5/4/16	5/5/16	5/5/16	5/5/16	5/4/16	5/4/16	5/4/16	5/4/16
<i>Detection Monitoring Parameters</i>											
Boron (mg/l)	NA	1.1	1.9	0.18	0.58	0.27	0.41	0.16	1.4	2.9	1.8
Calcium (mg/l)	NA	471	66.4	10.2	32.3	152	444	139	272	90.2	548
Chloride (mg/l)	NA	252	896	31.4	301	164	614	163	437	1,340	434
Fluoride (mg/l)	4	<0.5	0.21	0.5	<0.5	0.16	0.18	0.14	0.25	<0.5	1.4
pH (S.U.)	NA	6.82	7.48	7.3	7.33	6.84	6.68	7.47	7.16	7.29	6.69
Sulfate (mg/l)	NA	2,150	27.1	1.6	141	691	1,050	298	1,800	4	4,130
TDS (mg/l)	NA	4,340	1,980	260	985	1,240	3,380	1,090	3,900	2,560	7,090
<i>Assessment Monitoring Parameters</i>											
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.002	0.0015	0.0044	0.0015	<0.001	<0.001	<0.001	<0.001	0.0075	<0.001
Barium (mg/l)	2	0.035	0.43	0.13	0.23	0.029	0.028	0.05	0.018	0.95	0.014
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt (mg/l)	NA	<0.001	<0.001	<0.001	<0.001	<0.001	0.0014	<0.001	<0.001	<0.001	0.013
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (mg/l)	NA	0.33	0.14	0.043	0.18	0.081	0.39	0.11	0.41	0.14	1.1
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.546	0.885	0.557	0.331	0.139	0.793	0.209	-0.139	1.53	0
Radium-228 (pCi/l)	5	1.12	1.14	0.0717	1.41	0.98	0.861	0.31	0.412	3.62	2.4

Notes:

mg/l = milligrams per liter

S.U. = standard units

pCi/l = picocuries per liter



Table 3  
June 2016 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16	6/22/16
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.3	2.1	0.22	0.5	0.27	0.45	0.17	1.5	3.2	2.3	1.4	0.58
Calcium (mg/l)	NA	573	87.2	10.2	28.2	179	426	161	286	111	672	12.4	303
Chloride (mg/l)	NA	252	724	33.7	215	152	672	158	419	1,250	446	95.1	808
Fluoride (mg/l)	4	0.22	0.22	0.37	0.2	0.12	0.13	0.17	0.27	0.1	<0.1	0.49	<0.1
pH (S.U.)	NA	7.72	8.38	7.5	8.1	6.96	7.97	8.2	7.5	8.66	7.54	8.48	7.56
Sulfate (mg/l)	NA	2,160	24.7	5	124	587	954	268	1,530	<1	3,770	34.9	1,960
TDS (mg/l)	NA	4,460	1,980	285	920	1,470	3,640	1,200	3,800	2,720	7,160	540	5,420
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	0.0018	0.001	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0021	0.0032	0.0078	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	0.0057	0.0075
Barium (mg/l)	2	0.039	0.53	0.31	0.19	0.04	0.027	0.058	0.023	1	0.016	0.079	0.21
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0015	<0.003	<0.003
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.004	<0.004
Chromium (mg/l)	0.1	0.0013	0.0055	0.016	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0043	0.024
Cobalt (mg/l)	NA	0.0019	0.004	0.0096	<0.001	0.0022	0.0019	<0.001	<0.001	<0.001	0.0048	0.0013	0.02
Lead (mg/l)	0.015	<0.001	0.0078	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.012	0.015
Lithium (mg/l)	NA	0.38	0.16	0.054	0.17	0.083	0.39	0.1	0.44	0.15	0.92	0.026	0.27
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.012	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.466	0.85	1.01	0.532	0.0596	0.276	0	0.222	2.06	0.962	0.219	2
Radium-228 (pCi/l)	5	1.6	1.36	2.39	0.637	0.623	1.02	0.662	1.58	2.76	1.82	0.42	3.03

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 4  
November 2016 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16	11/17/16
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	2	0.14	0.41	0.23	0.41	0.19	1.4	2.9	1.8	1.9	0.8
Calcium (mg/l)	NA	494	73.6	8.9	20.9	91.5	362	138	251	84.2	514	17.3	380
Chloride (mg/l)	NA	262	922	35.9	192	123	753	159	538	1,380	523	175	1,340
Fluoride (mg/l)	4	1.3	0.26	0.25	0.23	0.22	0.76	0.11	0.29	0.24	1.6	0.2	0.55
pH (S.U.)	NA	6.76	7.27	7	7.11	6.19	6.7	7.36	7.24	7.36	6.82	7.81	6.75
Sulfate (mg/l)	NA	2,350	38.4	2.7	106	440	969	352	1,760	9	4,230	3.4	2,810
TDS (mg/l)	NA	1,880	270	275	850	1,030	3,520	1,200	4,100	2,820	6,780	1,940	6,580
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0018	0.0015	0.0061	<0.001	<0.001	<0.001	<0.001	<0.001	0.0052	<0.001	0.0067	0.0067
Barium (mg/l)	2	0.034	0.49	0.31	0.14	0.058	0.026	0.047	0.018	0.95	0.014	0.12	0.062
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011	0.005
Cobalt (mg/l)	NA	0.0012	<0.001	0.0025	<0.001	0.001	0.0019	<0.001	<0.001	<0.001	0.012	<0.001	0.01
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0028
Lithium (mg/l)	NA	0.32	0.15	0.042	0.14	0.077	0.35	0.1	0.39	0.14	0.81	0.048	0.29
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0078	0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.238	1.75	1.17	0.403	0.285	-0.087	0.382	0.389	1.52	0.3	0.44	0.807
Radium-228 (pCi/l)	5	0.829	1.1	1.08	0.433	0.351	0.812	-0.117	0.431	2.95	1.37	-0.000359	2.61

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 5  
December 2016 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16	12/6/16
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	1.9	0.13	0.37	0.25	0.38	0.12	1.3	3	1.7	1.3	0.65
Calcium (mg/l)	NA	501	69.2	8.2	19.5	115	336	120	223	84.2	478	15.5	318
Chloride (mg/l)	NA	269	756	34.1	174	134	748	176	470	1,340	501	124	1,020
Fluoride (mg/l)	4	0.34	0.19	0.27	0.23	0.21	0.74	0.16	0.37	0.21	1.7	0.53	0.48
pH (S.U.)	NA	5.68	6.16	6.01	7.11	6.64	6.83	6.6	5.92	6.74	5.69	6.91	6.24
Sulfate (mg/l)	NA	2,420	38.3	3.5	99.9	506	821	234	1,660	7.9	3,900	48.4	2,580
TDS (mg/l)	NA	4,980	2,070	325	820	1,160	3,540	1,100	3,990	2,700	7,000	765	6,430
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0013	0.0015	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	0.0045	<0.001	0.005	0.004
Barium (mg/l)	2	0.032	0.47	0.068	0.15	0.035	0.023	0.048	0.017	0.93	0.017	0.091	0.053
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt (mg/l)	NA	0.0015	<0.001	<0.001	0.0022	<0.001	<0.001	<0.001	<0.001	<0.001	0.0077	<0.001	0.0048
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (mg/l)	NA	0.32	0.14	0.041	0.14	0.073	0.34	0.086	0.36	0.13	0.74	0.028	0.26
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0038	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.34	1.01	0.139	0.297	0	1.02	0.239	0.596	1.02	0.198	0.449	0.532
Radium-228 (pCi/l)	5	0.562	1.29	0.533	0.817	0.00524	0.517	-0.0807	0.644	2.62	3.36	-0.402	1.06

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter





Table 6  
January 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17	1/4/17
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	1.9	0.22	0.39	0.24	0.36	0.15	1.3	2.7	1.8	1.4	0.67
Calcium (mg/l)	NA	531	75	10.3	21.9	91	364	142	269	92.2	538	18	377
Chloride (mg/l)	NA	277	834	32.9	179	120	663	170	496	1,340	496	132	1,070
Fluoride (mg/l)	4	0.25	0.18	0.31	0.21	0.18	0.1	0.12	0.41	0.21	<0.10	0.44	0.55
pH (S.U.)	NA	5.97	7.38	7.05	7.13	6.06	6.09	7.49	7.33	7.2	6.69	7.62	7.01
Sulfate (mg/l)	NA	2,410	34.9	<1	101	381	932	282	1,930	<100	3,930	28.3	3,110
TDS (mg/l)	NA	4,930	2,000	360	820	1,050	3,580	1,150	4,140	2,720	7,150	840	6,900
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.002	0.0014	0.0051	0.0018	<0.001	<0.001	<0.001	<0.001	0.0055	<0.001	0.0073	0.0044
Barium (mg/l)	2	0.034	0.48	0.15	0.16	0.029	0.03	0.055	0.021	0.96	0.017	0.11	0.053
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	0.0013	<0.001	<0.001	<0.001	0.0011	<0.001	<0.001	0.0012
Cobalt (mg/l)	NA	0.0013	<0.001	<0.001	0.0018	<0.001	0.0042	<0.001	<0.001	<0.001	<0.001	<0.001	0.0043
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (mg/l)	NA	0.36	0.14	0.04	0.14	0.074	0.35	0.096	0.38	0.13	0.81	0.029	0.28
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0031	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.749	0.476	0.485	0	0	0.205	0	0.139	2.38	0.524	-0.156	0.673
Radium-228 (pCi/l)	5	0.6	1.17	0.724	0.757	0.605	0.409	0.178	0.564	3.21	1.14	0.797	0.905

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 7  
February 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17	2/7/17
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.2	2	0.18	0.4	0.26	0.41	0.14	1.5	3.1	1.9	1.5	0.67
Calcium (mg/l)	NA	562	71	10.1	20.8	76.9	441	128	242	97.5	636	18.5	385
Chloride (mg/l)	NA	266	725	32.9	166	108	628	166	484	1,310	499	135	1,040
Fluoride (mg/l)	4	0.25	0.19	0.31	0.2	0.17	1.1	0.17	0.44	0.22	<0.10	0.47	0.45
pH (S.U.)	NA	5.74	6.53	6.2	6.99	5.85	5.89	7.51	6.47	6.51	5.6	7	6.69
Sulfate (mg/l)	NA	2,390	28.1	2	93.2	321	942	261	1,800	2.9	3,800	13.8	2,740
TDS (mg/l)	NA	5,010	2,080	420	860	935	3,550	1,180	4,060	2,760	7,020	875	6,820
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Arsenic (mg/l)	0.01	0.0019	0.0015	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0045	<0.0010	0.0061	0.0025
Barium (mg/l)	2	0.034	0.45	0.055	0.1	0.023	0.033	0.043	0.019	0.96	0.029	0.1	0.051
Beryllium (mg/l)	0.004	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cadmium (mg/l)	0.005	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Chromium (mg/l)	0.1	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	0.0011
Cobalt (mg/l)	NA	0.0012	<0.0010	<0.0010	<0.0010	<0.0010	0.0018	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0023
Lead (mg/l)	0.015	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Lithium (mg/l)	NA	0.38	0.14	0.041	0.13	0.072	0.38	0.1	0.42	0.14	0.9	0.035	0.32
Mercury (mg/l)	0.002	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Molybdenum (mg/l)	NA	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030
Selenium (mg/l)	0.05	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Thallium (mg/l)	0.002	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Radium-226 (pCi/l)	5	0.143	1.63	-0.211	0.275	0.0765	0.314	0.354	0.338	2.51	0.129	0.28	-0.312
Radium-228 (pCi/l)	5	1.04	0.983	0.0665	0.495	0.187	1.56	0.222	0.306	3.21	0.982	0.0797	0.861

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 8  
May 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17	5/10/17
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	1.9	0.18	0.37	0.27	0.37	0.16	1.4	3.1	1.9	1.7	0.7
Calcium (mg/l)	NA	498	60.9	9.8	19.6	61.6	358	135	238	91.2	518	17.8	368
Chloride (mg/l)	NA	260	757	30.2	166	89.6	562	153	447	1,310	482	161	1,200
Fluoride (mg/l)	4	0.18	0.4	0.5	0.27	0.28	0.1	0.12	0.41	0.22	1.2	0.51	0.35
pH (S.U.)	NA	6.59	7.22	6.89	7.13	6.99	6.54	7.03	7	7.14	6.28	7.79	6.68
Sulfate (mg/l)	NA	2,410	26.5	1.4	93.9	262	1,040	304	1,740	<1	3,840	8.7	3,050
TDS (mg/l)	NA	4,800	1,890	305	775	765	3,280	1,180	3,920	2,520	6,720	780	7,120
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0016	0.0011	0.0039	<0.001	<0.001	<0.001	<0.001	<0.001	0.0073	<0.001	0.0044	0.0018
Barium (mg/l)	2	0.029	0.4	0.13	0.11	0.024	0.026	0.051	0.016	0.94	0.013	0.12	0.035
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt (mg/l)	NA	<0.001	<0.001	0.001	<0.001	<0.001	0.0016	<0.001	<0.001	<0.001	<0.001	<0.001	0.0055
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (mg/l)	NA	0.36	0.14	0.041	0.14	0.06	0.41	0.11	0.43	0.13	0.87	0.046	0.31
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.664	1.28	0.376	0.274	0.109	0.201	0.478	0.153	1.65	-0.049	0.349	0.156
Radium-228 (pCi/l)	5	0.788	1.48	0.614	0.402	-0.0841	0.453	0.698	0.211	4.67	2.03	0.176	0.995

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 9  
June 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17	6/19/17
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	2	0.15	0.39	0.31	0.37	0.16	1.4	2.8	1.8	1.8	0.72
Calcium (mg/l)	NA	543	71.9	9.7	19.7	93.9	361	141	247	96.1	530	19	399
Chloride (mg/l)	NA	280	777	38.9	163	106	652	161	451	1,340	492	169	1,190
Fluoride (mg/l)	4	0.23	0.2	0.29	0.23	0.19	0.12	0.16	0.64	0.25	1.4	0.51	0.35
pH (S.U.)	NA	6.6	7.38	6.96	7.33	6.75	6.74	7.42	7.31	7.25	6.49	7.78	6.61
Sulfate (mg/l)	NA	2,380	25.4	3.3	83.2	358	920	261	1,600	2.9	3,670	8.1	2,930
TDS (mg/l)	NA	5,240	1,970	300	765	960	3,680	1,220	4,000	2,700	6,960	850	7,240
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0013	<0.001	0.003	<0.001	<0.001	<0.001	<0.001	<0.001	0.0021	<0.001	0.0047	0.0044
Barium (mg/l)	2	0.028	0.48	0.17	0.11	0.038	0.024	0.056	0.016	0.97	0.014	0.13	0.061
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0016	0.0089
Cobalt (mg/l)	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.012
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.0054
Lithium (mg/l)	NA	0.34	0.14	0.041	0.13	0.057	0.35	0.099	0.38	0.12	0.79	0.048	0.31
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.00026	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0046	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.641	1.52	0.548	0.912	0.295	0.55	0.254	0.731	1.79	0.809	0.533	0.628
Radium-228 (pCi/l)	5	0.777	1.52	0.592	0.889	0.531	0.251	0.337	0.397	3.43	0.94	0.702	2.24

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 10  
July 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-38	OW-39
		7/20/17	7/20/17
<i>Detection Monitoring Parameters</i>			
Boron (mg/l)	NA	1.8	0.67
Calcium (mg/l)	NA	21.2	485
Chloride (mg/l)	NA	170	1,050
Fluoride (mg/l)	4	0.52	0.26
pH (S.U.)	NA	7.29	6.35
Sulfate (mg/l)	NA	15.6	3,020
TDS (mg/l)	NA	845	7,180
<i>Assessment Monitoring Parameters</i>			
Antimony (mg/l)	0.006	<0.001	<0.001
Arsenic (mg/l)	0.01	0.0048	0.0015
Barium (mg/l)	2	0.17	0.041
Beryllium (mg/l)	0.004	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001
Chromium (mg/l)	0.1	0.0068	<0.001
Cobalt (mg/l)	NA	0.0034	0.0068
Lead (mg/l)	0.015	0.0035	<0.001
Lithium (mg/l)	NA	0.056	0.31
Mercury (mg/l)	0.002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	0.0082	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.699	0.686
Radium-228 (pCi/l)	5	0.633	0.536

Notes:

mg/l = milligrams per liter

S.U. = standard units

pCi/l = picocuries per liter





Table 11  
August 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-16	OW-17A	OW-18	OW-19 (BG)	OW-20 (BG)	OW-21A (BG)	OW-22 (BG)	OW-23 (BG)	OW-31	OW-32	OW-38	OW-39
		8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17	8/21/17
<b>Detection Monitoring Parameters</b>													
Boron (mg/l)	NA	1.1	2	0.13	0.33	0.23	0.37	0.14	1.4	2.9	1.9	1.9	0.71
Calcium (mg/l)	NA	485	67.5	8.9	17.5	154	367	132	225	91.4	556	18.2	439
Chloride (mg/l)	NA	287	811	39.1	140	174	750	182	490	1,260	572	182	1,240
Fluoride (mg/l)	4	0.52	0.32	0.42	0.34	0.2	0.33	0.28	0.35	0.35	0.37	0.61	0.8
pH (S.U.)	NA	7.01	7.31	7.01	7.68	6.26	6.95	7.66	7.54	7.1	6.64	7.62	6.99
Sulfate (mg/l)	NA	2,430	26.4	4.9	77.7	707	820	277	1,660	15.7	3,870	23.2	3,100
TDS (mg/l)	NA	4,880	1,990	280	680	1,560	3,720	1,190	4,260	2,800	7,540	900	7,400
<b>Assessment Monitoring Parameters</b>													
Antimony (mg/l)	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic (mg/l)	0.01	<0.001	0.0015	0.0044	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	0.0053	0.0013
Barium (mg/l)	2	0.033	0.47	0.22	0.11	0.047	0.024	0.056	0.013	1	0.012	0.14	0.034
Beryllium (mg/l)	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium (mg/l)	0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium (mg/l)	0.1	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt (mg/l)	NA	<0.001	<0.001	0.0023	<0.001	0.0045	<0.001	<0.001	<0.001	<0.001	0.0099	<0.001	0.0074
Lead (mg/l)	0.015	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Lithium (mg/l)	NA	0.33	0.14	0.04	0.13	0.091	0.35	0.098	0.36	0.13	0.76	0.05	0.3
Mercury (mg/l)	0.002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Molybdenum (mg/l)	NA	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.0091	<0.003
Selenium (mg/l)	0.05	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Thallium (mg/l)	0.002	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Radium-226 (pCi/l)	5	0.668	1.46	0.801	0.714	0.462	0.718	0.346	0	2.16	0.307	0.897	0.427
Radium-228 (pCi/l)	5	0.755	0.896	0.225	0.384	1.38	0.928	0.54	0.301	3.18	1.28	0.662	0.732

Notes:  
mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter



Table 12  
October 2017 Analytical Summary

Cleco Dolet Hills Power Station  
Ash Basins

Parameter/Well/ Date	MCL	OW-17A	OW-31	OW-32	OW-38
		10/5/17	10/5/17	10/5/17	10/5/17
<i>Detection Monitoring Parameters</i>					
Chloride (mg/l)	NA			597	
Fluoride (mg/l)	4	0.43			0.5
Sulfate (mg/l)	NA		10.1		
TDS (mg/l)	NA			7,030	

Notes:

mg/l = milligrams per liter  
S.U. = standard units  
pCi/l = picocuries per liter