

DOCKETED	
Docket Number:	08-AFC-03C
Project Title:	Marsh Landing Generating Station Compliance
TN #:	231205
Document Title:	ACR Part 2 of 2
Description:	2018 ACR Part 2 of 2
Filer:	Scott Seipel
Organization:	NRG, Inc.
Submitter Role:	Applicant
Submission Date:	12/13/2019 10:16:39 AM
Docketed Date:	12/13/2019



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1801D39

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501808523

Project: Annual

Project Received: 01/23/2018

Analytical Report reviewed & approved for release on 01/30/2018 by:

Yen Cao
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: Annual
WorkOrder: 1801D39

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: Annual
WorkOrder: 1801D39

Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
S Surrogate spike recovery outside accepted recovery limits.
c1 Surrogate recovery outside of the control limits due to the dilution of the sample.

Quality Control Qualifiers

F1 MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.



Analytical Report

Client: NRG Energy, LLC
Date Received: 1/23/18 15:47
Date Prepared: 1/23/18
Project: Annual

WorkOrder: 1801D39
Extraction Method: E300.1
Analytical Method: E300.1
Unit: mg/L

Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1801D39-001B	Water	01/23/2018 14:10	IC3 01251805.D	152074

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Sulfate	30	0.062	2.0	20	01/23/2018 20:22

<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	
Formate	0	S	85-115	01/23/2018 20:22

Analyst(s): AO Analytical Comments: c1



Analytical Report

Client: NRG Energy, LLC
Date Received: 1/23/18 15:47
Date Prepared: 1/24/18
Project: Annual

WorkOrder: 1801D39
Extraction Method: SM4500-S⁻² D-2000
Analytical Method: SM4500 S⁻² D
Unit: mg/L

Total Sulfide - S

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1801D39-001A	Water	01/23/2018 14:10	SPECTROPHOTOMETER	152117

<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Sulfide	0.020	J	0.013	0.050	1	01/24/2018 10:52

Analyst(s): RB



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 1/23/18
Date Analyzed: 1/23/18
Instrument: IC3
Matrix: Water
Project: Annual

WorkOrder: 1801D39
BatchID: 152074
Extraction Method: E300.1
Analytical Method: E300.1
Unit: mg/L
Sample ID: MB/LCS-152074
1801B71-002AMS/MSD

QC Summary Report for E300.1

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Sulfate	ND	0.954	0.0031	0.10	1	-	95	85-115
Surrogate Recovery								
Formate	0.101	0.0990			0.10	101	99	85-115

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Sulfate	36.0	36.0	1	35	116,F1	116,F1	85-115	0	15
Surrogate Recovery									
Formate	0.0973	0.0986	0.10		97	99	85-115	1.25	10



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 1/24/18
Date Analyzed: 1/24/18
Instrument: SPECTROPHOTOMETER
Matrix: Water
Project: Annual

WorkOrder: 1801D39
BatchID: 152117
Extraction Method: SM4500-S⁻² D-2000
Analytical Method: SM4500 S⁻² D
Unit: mg/L
Sample ID: MB/LCS-152117
1801C06-001AMS/MSD

QC Summary Report For SM4500 S-2D

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Total Sulfide	ND	0.502	0.013	0.050	0.50	-	100	80-120

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Total Sulfide	0.481	0.486	0.50	ND	96	97	80-120	1.06	20

McCampbell Analytical, Inc.



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1801D39

ClientCode: GOA

☐ WaterTrax

☐ WriteOn

☐ EDF

☐ Excel

☐ EQulS

☒ Email

☐ HardCopy

☐ ThirdParty

☒ J-flag

☐ Detection Summary

☐ Dry-Weight

Report to:

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party: joe.moura@nrg.com; james.robinson@nrg.
PO: 4501808523
Project: Annual

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TAT: 5 days;

Date Received: 01/23/2018

Date Logged: 01/25/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1801D39-001	FAC Combined Wastewater	Water	1/23/2018 14:10	☐	B	A										
1801D39-002	FAC Combined Wastewater ML-18-033	Water	1/23/2018 14:10	☒	B	A										

Test Legend:

1	300_1_W
5	
9	

2	SULFIDE_W
6	
10	

3	
7	
11	

4	
8	
12	

Prepared by: Alexandra Iniguez

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: Annual

Comments:

Work Order: 1801D39
QC Level: LEVEL 2
Date Logged: 1/25/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1801D39-001A	FAC Combined Wastewater	Water	SM4500S2D (Total Sulfide)	1	250mL HDPE w/ NaOH+ZnAc	☐	1/23/2018 14:10	5 days	Trace	☐	
1801D39-001B	FAC Combined Wastewater	Water	E300.1 (Inorganic Anions) <Sulfate>	1	125mL HDPE, unprsv.	☐	1/23/2018 14:10	5 days	Trace	☐	
1801D39-002A	FAC Combined Wastewater ML-18-033	Water	SM4500S2D (Total Sulfide)	1	250mL HDPE w/ NaOH+ZnAc	☐	1/23/2018 14:10	5 days	Trace	☒	
1801D39-002B	FAC Combined Wastewater ML-18-033	Water	E300.1 (Inorganic Anions) <Sulfate>	1	125mL HDPE, unprsv.	☐	1/23/2018 14:10	5 days	Trace	☒	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1801D39

Chain of Custody

Page 3 of 12

Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

SAMPLES SUBMITTED TO				SEND INVOICE TO				PROJECT				ANALYSIS REQUEST			
Laboratory: McCampbell Analytical, Inc. Attention: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Address: 925 252 9262/ 925 252 9269 Phone/Fax:				Company: NRG Energy, Inc. Attention: Sandra Hemdon Address: 1121 4th St. Near Roads, LA 70780 P.O. No.: 4501808523				Plant: Marsh Landing Title: DDSD Phase: Annual Manager: David Frandsen							
SAMPLE INFORMATION								CONTAINER INFORMATION				Sulfide (E376.2)	Sulfate (E300.1)		
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.				
ML-18-032	23-Jan-18	1410	DDSD	Semi-Annual	Wastewater	Grab	FAC Combined Wastewater	1	HDPE Bottle	250	NaOH & ZnAc (ZHS, 4°C)	X	X		
ML-18-033	23-Jan-18	1410	DDSD	Semi-Annual	Wastewater	Grab	FAC Combined Wastewater	1	HDPE Bottle	250	Unpreserved (4°C)	X	X		
HOLDING TIME: 7 days												28 days			
REPORTING			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY							
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 Phone/Fax: 925 324-3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: joe.moura@nrg.com E-mail CC: kathy.crist@nrg.com E-mail CC: harry.bobis@nrg.com								STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. *Include sample description with client sample ID. Invoice per quote 7224							
PRINTED NAME			SIGNATURE		COMPANY		DATE		TIME						
Sampled by: James Robinson			<i>James Robinson</i>		NRG-Marsh Landing Generating Station		23-Jan-18		1547		1410				
Relinquished by: James Robinson			<i>James Robinson</i>		NRG		23-Jan-18		1547						
Received by: Alexandra I.			<i>Alexandra I.</i>		MAI		1/23/18		1547						
Relinquished by:															
Received by:															
Relinquished by:															
Received by:															



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **Annual**

Date and Time Received: **1/23/2018 15:47**
Date Logged: **1/25/2018**
Received by: **Alexandra Iniguez**
Logged by: **Alexandra Iniguez**

WorkOrder №: **1801D39** Matrix: Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☒	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	NA ☐
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Sample/Temp Blank temperature	Temp: 5.6°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☒	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☒	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

UCMR Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes ☐	No ☐	NA ☒
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes ☐	No ☐	NA ☒

Comments:

Instrument Calibration Report

Attn:

Magnetic Flow Meter

David Frandsen
3201-C Wilbur Ave
Antioch, Ca 94509

Tag/Instrument ID **FT-360004**
Description **Mag-Meter**
Manufacturer **Rosemount**

Calibrated Range **0 TO 500 Gal/M**
Serial Number **378997**
Model Number **8732E**

Plant / Unit **NRG**
System
Location **Out behind Amonia tank**

Calibration Type **SCHEDULED**
Calibrated **12-Jan-18**
Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

Required Accuracy⁽¹⁾: 0.50%

In Val	In Units	Out Val	Out Units	As Found	Error %	As Left	Error %
0.00	Gal/M	4.00	mA	4.01	0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.61	0.06%	5.60	0.00%
10.00	Gal/M	9.33	mA	9.34	0.06%	9.33	0.00%
30.00	Gal/M	20.00	mA	20.01	0.06%	20.00	0.00%
10.00	Gal/M	9.33	mA	9.34	0.06%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.61	0.06%	5.60	0.00%
0.00	Gal/M	4.00	mA	4.01	0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

Meter Tube Cal #: 0838305208252005
Units of Measure: Gal/M
Span: 0 To 500
Coil Pulse Mode: 37 Hz

Calibration Settings

1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

Description	Manufacturer	Model Number	Serial Number	NIST Cert. Number
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

Calibration Result: **PASS**

Calibrated by: *James Hiracheta*

Checkout By:

Instrument Calibration Report

Attn:

Magnetic Flow Meter

 David Frandsen
 3201-C Wilbur Ave
 Antioch, Ca 94509

 Tag/Instrument ID **Ft-400001**
 Description **Mag-Meter**
 Manufacturer **Rosemount**

 Calibrated Range **0 TO 500 Gal/M**
 Serial Number **0338199**
 Model Number **8732E**

 Plant / Unit **NRG**
 System
 Location **Out behind Amonia tank**

 Calibration Type **SCHEDULED**
 Calibrated **12-Jan-18**
 Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

 Required Accuracy⁽¹⁾: 0.50%

<u>In Val</u>	<u>In Units</u>	<u>Out Val</u>	<u>Out Units</u>	<u>As Found</u>	<u>Error %</u>	<u>As Left</u>	<u>Error %</u>
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.60	0.00%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
30.00	Gal/M	20.00	mA	19.94	-0.37%	20.00	0.00%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.60	0.00%
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

 Meter Tube Cal #: 0984705909605005
 Units of Measure: Gal/M
 Span: 0 To 500
 Coil Pulse Mode: 37 Hz

Calibration Settings

 1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>NIST Cert. Number</u>
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

 QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

 Calibration Result: **PASS**

 Calibrated by: *James Hiracheta*

Checkout By:

Instrument Calibration Report

Attn:

Magnetic Flow Meter

 David Frandsen
 3201-C Wilbur Ave
 Antioch, Ca 94509

 Tag/Instrument ID **Ft-950002**
 Description **Mag-Meter**
 Manufacturer **Rosemount**

 Calibrated Range **0 TO 80 Gal/M**
 Serial Number **0337659**
 Model Number **8732E**

 Plant / Unit **NRG**
 System
 Location **Next Admin building**

 Calibration Type **SCHEDULED**
 Calibrated **12-Jan-18**
 Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

 Required Accuracy⁽¹⁾: 0.50%

<u>In Val</u>	<u>In Units</u>	<u>Out Val</u>	<u>Out Units</u>	<u>As Found</u>	<u>Error %</u>	<u>As Left</u>	<u>Error %</u>
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.59	-0.06%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
30.00	Gal/M	20.00	mA	19.94	-0.37%	19.99	-0.06%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.59	-0.06%
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

 Meter Tube Cal #: 0926105209236005
 Units of Measure: Gal/M
 Span: 0 To 80
 Coil Pulse Mode: 37 Hz

Calibration Settings

 1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>NIST Cert. Number</u>
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

 QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

 Calibration Result: **PASS**

 Calibrated by: *James Hiracheta*

Checkout By:



RECEIVED BY
DELTA DIABLO

JUL 03 2018

Industrial User Report Checklist And Certification Statement Form

Attn:	Mike Auer		
Environmental Compliance Specialist			
Environmental Specialist	Phone	(925) 756-1900	Fax (925) 756-1961
Industrial User Facility Name	NRG Marsh Landing, LLC		
Duly Authorized Representative Name	Joe Moura		
Duly Authorized Representative Phone	925-779-6685		

This Industrial User Report Checklist and Certification Statement Form shall be submitted with all Self-Monitoring Reports (SMRs), as specified by the Wastewater Discharge Permit issued by Delta Diablo, hereinafter referred to as the District. When submitting Self-Monitoring Reports, check all that are applicable.

Self-Monitoring Reports (SMRs) (Required)

☒ Flow Discharge Summary (Review Discharge Permit.)

☐ Calibration of Effluent Flow Meters; if applicable.

☒ Monitoring Results –all required tests completed, results reviewed, results included

Quality Assurance/Quality Control (QA/QC) and Chain-of-Custody (COC) (Review Discharge Permit):

☒ pH (field-grab) (shall be analyzed within 15 minutes of sample collection).

Results, collection time, analysis time and Technician's Initials shall be reported in the comments section of the respective COC. The pH meter shall be accurate and reproducible to 0.1 pH unit with a range of 0 to 14 and equipped with a temperature-compensation adjustment (Standard methods).

☐ Cyanide samples were tested for oxidizers and preserved with Sodium Hydroxide (NaOH).

This shall be reported in the comments section on the respective COC, if applicable.

☒ Selenium lab analysis by EPA Method 200.8 by Reaction Mode: if applicable.

☐ Total Phenolics lab analysis by EPA Method 420.4: if applicable.

☒ All sample analysis for regulatory compliance reporting shall be completed by an ELAP certified Laboratory.

☒ Certification Statement included (see attached)

☐ Other requested data _____



Industrial User Report Checklist And Certification Statement Form

Violations (if applicable)

- ☐ All wastewater discharge violations are reported during this period:
- ☐ The District was contacted within 24- hours of becoming aware of the violation.
Date: _____
- ☐ A follow-up resample was completed. Date: _____
- ☐ Corrective actions implemented to resolve violation (Please explain in writing)
- ☐ Significant Non-Compliance (SNC) Status Review

Please circle the review period *: **January – June** and **July -December**.

The SIU shall conduct a SNC review for the previous completed period * prior to the Self-monitoring Report (SMR) due date. Examples: A October SMR due date, the SNC review period is **January – June** or an April SMR due date, the SNC review period is **July – December**.

The SNC definition can be found in 40 CFR 403.8.

- a) Chronic SNC= >66% of a regulated parameter in violation during six-month Period *.
- b) Technical Review Criteria (TRC) SNC = >33% of a regulated pollutant during a six-month period* equals or exceeds the product of the daily maximum limit or the average limit multiplied by the applicable TRC factor (1.4 for BOD, TSS and Oil/Grease and 1.2 for all other regulated pollutants except pH).

☐ Is the SIU in SNC (as defined in a and/or b) for this period*? Yes ☐, No ☐; If yes, for what period? _____. Please report the SNC status to the District in the SMR and include corrective actions to resolve the SNC classification.

☐ Other violations – i.e., reporting, spills to sewer, or prohibited discharges

All violations will be discussed in the cover letter of the Self-Monitoring Report.

☐ Significant Changes

Anticipated changes that may alter the nature, quality, or volume of the wastewater discharged. Planned changes shall be submitted at least 90 days prior to implementation, and shall include a detailed description of this change.



Industrial User Report Checklist And Certification Statement Form

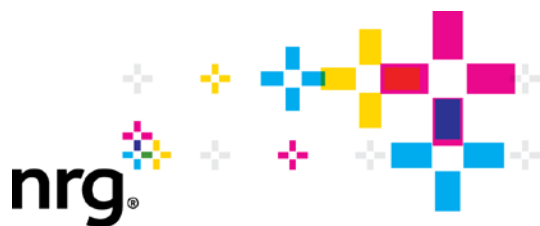
Certification Statement

Industrial User Facility Name	NRG Marsh Landing, LLC
Industrial User Facility Address	3201-C Wilbur Avenue, Antioch, CA 94509
Duly Authorized Representative Phone	925-779-6685
Indicate Period Covered by This Report	April 1-June 30, 2018

Certification Statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations (40 CFR 403.6).

Duly Authorized Representative Signature	
Duly Authorized Representative Print	Joe Moura
Date	7/3/18



NRG Marsh Landing, LLC
Marsh Landing Generating Station
3201-C Wilbur Avenue (shipping)
PO Box 1687 (mailing)
Antioch, CA 94509

July 3, 2018

Mr. Mike Auer
Delta Diablo
2500 Pittsburg-Antioch Highway
Antioch, CA 94509-1373

**Subject: 2018 Second Quarterly (April 1-June 30) Self-Monitoring Report
NRG Marsh Landing, LLC, Marsh Landing Generating Station,
Industrial Wastewater Discharge Permit 0311963-S**

This letter documents the transmittal of the 2018 Second Quarterly Self-Monitoring Report (SMR).

Compliance Statement (choose one):

- ☒ There were no violations of waste discharge requirements during the reporting period.
- ☐ The following violation(s) of waste discharge requirements occurred during the reporting period, as described below:

Discussion:

This report is the SMR filed for the station and covers the period from April 1 through June 30, 2018. This report includes monthly flow data and quarterly analytical data required to be collected in 2018. Data are summarized in the attached tables.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. David Frandsen, Environmental Specialist at david.frandsen@nrg.com or call 925.779.6695.

Sincerely,



Joe Moura

Site Manager

NRG Marsh Landing, LLC

Marsh Landing Generating Station

Attachments

Table 1:	Quarterly Results for Combined Wastewater (FAC Combined)
Table 2:	April 2018 Monthly Flow Data
Table 3:	May 2018 Monthly Flow Data
Table 4:	June 2018 Monthly Flow Data

Attachment 1: pH COC

Attachment 2: Analytical Reports

Table 1
Quarterly Results for Combined Wastewater (FAC Combined)

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509

Sample Station Location	FAC Combined
Sample Station Description	Local Limits FAC Combined Wastewater
Reporting Period	April - June 2018
Report Type	Quarterly

Constituent	Sample Date	Permit Limit	Result	Units
Field pH	4/25/2018	6-10	7.9	S.U.
BOD	4/25/2018	-	12	mg/L
COD	4/25/2018	-	38	mg/L
Arsenic	4/25/2018	0.15	0.00049 J	mg/L
Cadmium	4/25/2018	0.1	ND	mg/L
Chromium	4/25/2018	0.5	0.00031 J	mg/L
Copper	4/25/2018	0.5	0.0074	mg/L
Iron	4/25/2018	-	0.120	mg/L
Lead	4/25/2018	0.5	0.00014 J	mg/L
Mercury	4/25/2018	0.003	ND	mg/L
Molybdenum	4/25/2018	-	0.0010	mg/L
Nickel	4/25/2018	0.5	0.0017	mg/L
Selenium	4/25/2018	0.25	0.0015 J	mg/L
Silver	4/25/2018	0.2	ND	mg/L
Zinc	4/25/2018	1.0	0.055	mg/L
TDS	4/25/2018	-	300	mg/L
TSS	4/25/2018	-	4.60	mg/L

J = The reported concentration is an estimated value.

mg/L = Milligrams per liter

ND = Not detected at or above the laboratory Method Detection Limit or Reporting Limit.

S.U. = Standard units

Table 2
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	April, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	4/1/2018 - 4/30/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	0	0.00	
2	0	0.00	
3	3,713	20.34	
4	2,731	19.61	
5	0	0.00	
6	6,703	19.79	
7	10,883	19.62	
8	6,279	19.71	
9	5,486	19.68	
10	0	0.00	
11	0	0.00	
12	0	0.00	
13	3,826	21.18	
14	958	19.68	
15	0	0.00	
16	0	0.00	
17	0	0.00	
18	6,085	19.69	
19	6,723	19.89	
20	0	0.00	
21	0	0.00	
22	0	0.00	
23	0	0.00	
24	16,919	19.77	
25	14,863	19.57	
26	11,264	20.78	
27	3,003	19.58	
28	9,072	19.60	
29	0	0.00	
30	0	0.00	

Total Monthly Flow (gal)	108,508	Did flow exceed limits?	NO
Daily Max Flow (gpd)	16,919	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	3,617		

Table 3
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	May, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	5/1/2018 - 5/31/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	464	16.26	
2	4,207	21.02	
3	1,878	19.65	
4	4,245	19.67	
5	409	16.24	
6	0	0.00	
7	6,089	21.04	
8	11,524	19.57	
9	5,277	19.65	
10	4,446	19.61	
11	6,007	19.76	
12	5,604	19.62	
13	0	0.00	
14	0	0.00	
15	0	0.00	
16	6,812	19.68	
17	9,340	19.59	
18	0	0.00	
19	12,602	20.77	
20	0	0.00	
21	769	19.60	
22	11,342	19.63	
23	2,739	19.59	
24	9,871	19.59	
25	0	0.00	
26	4,687	20.75	
27	0	0.00	
28	1,532	19.56	
29	3,898	19.58	
30	14,325	20.82	
31	13,142	19.59	

Total Monthly Flow (gal)	141,209	Did flow exceed limits?	NO
Daily Max Flow (gpd)	14,325	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	4,555		

Table 4
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	June, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	6/1/2018 - 6/30/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	5,448	19.68	
2	2,405	19.58	
3	0	0.00	
4	6,647	20.36	
5	5,868	19.60	
6	8,628	20.46	
7	6,753	19.62	
8	8,990	19.71	
9	17,721	25.45	1
10	0	0.00	
11	436	15.81	
12	5,411	19.74	
13	7,148	19.62	
14	0	0.00	
15	3,479	19.09	
16	5,518	20.86	
17	412	15.53	
18	401	14.81	
19	12,681	19.59	
20	5,730	20.71	
21	4,575	19.57	
22	3,785	19.75	
23	7,542	19.58	
24	0	0.00	
25	383	14.59	
26	5,719	21.28	
27	12,457	19.60	
28	16,020	19.68	
29	4,807	19.74	
30	9,676	19.57	

Total Monthly Flow (gal)	168,641	Did flow exceed limits?	NO
Daily Max Flow (gpd)	17,721	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	5,621		

Marsh Landing Generating Station
Chemistry Department
Environmental Laboratory Accreditation Program Certificate No. 2818

Reported to:
Laboratory Coordinator

NPDES Monthly Analytical Report

Sample Point	Sample Number	Sample Date (m/d/y)	Sample Collection Time	Date Analyzed (m/d/y)	pH Analysis Time	Sample Medium	Sample Type (Grab, 24-Hour Composite)	pH
Method: SM								
Unit: 4500-H+B								
Reporting Limit: 0.18								
Method Detection Limit: 0.06								
FAC Combined Wastewater	ML-18-052	4/25/18	1000	4/25/18	1000	Wastewater	Grab	7.9

SM = Standard Method; ppm = parts per million; mg/L = milligrams per liter; N/A = not applicable

Laboratory Director or Coordinator: David Frandsen

Chemistry Technologist: James Robinson

Signature:

David Frandsen

Date:

May 3, 2018

Signature:

James E. Robinson

Date:

25-Apr-18

Reviewed By:

OCJ



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1804E12

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501801523

Project: Marsh Landing: DDSD: Quarterly

Project Received: 04/25/2018

Analytical Report reviewed & approved for release on 05/01/2018 by:

Christine Askari
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: Marsh Landing; DDSD: Quarterly
WorkOrder: 1804E12

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: Marsh Landing: DDSD: Quarterly
WorkOrder: 1804E12

Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
j1 See attached narrative



Case Narrative

Client: NRG Energy, LLC
Project: Marsh Landing: DDS: Quarterly

Work Order: 1804E12
May 01, 2018

Our standard ICP-MS analytical procedure is to analyze selenium using the reaction mode.



Analytical Report

Client: NRG Energy, LLC
Date Received: 4/25/18 16:34
Date Prepared: 4/25/18
Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E12
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
(ML-18-045) FAC Combined Wastewater	1804E12-001A	Water	04/25/2018 10:00	ICP-MS3 035SMPL.D	157145

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Arsenic	0.49	J	0.19	0.50	1	04/26/2018 11:31
Cadmium	ND		0.040	0.25	1	04/26/2018 11:31
Chromium	0.31	J	0.14	0.50	1	04/26/2018 11:31
Copper	7.4		0.10	2.0	1	04/26/2018 11:31
Iron	120		4.4	20	1	04/26/2018 11:31
Lead	0.14	J	0.078	0.50	1	04/26/2018 11:31
Mercury	ND		0.010	0.050	1	04/26/2018 11:31
Molybdenum	1.0		0.26	0.50	1	04/26/2018 11:31
Nickel	1.7		0.18	0.50	1	04/26/2018 11:31
Selenium	0.15	J	0.15	0.50	1	04/26/2018 11:31
Silver	ND		0.025	0.19	1	04/26/2018 11:31
Zinc	55		5.0	15	1	04/26/2018 11:31

Surrogates	REC (%)	Limits	
Terbium	104	70-130	04/26/2018 11:31

Analyst(s): JC

Analytical Comments: j1



Quality Control Report

Client: NRG Energy, LLC

Date Prepared: 4/25/18

Date Analyzed: 4/25/18

Instrument: ICP-MS2

Matrix: Water

Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E12

BatchID: 157145

Extraction Method: E200.8

Analytical Method: E200.8

Unit: µg/L

Sample ID: MB/LCS-157145
1804D77-016DMS/MSD

QC Summary Report for Metals

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Arsenic	ND	47.9	0.19	0.50	50	-	96	85-115
Cadmium	ND	46.7	0.040	0.25	50	-	93	85-115
Chromium	ND	46.6	0.14	0.50	50	-	93	85-115
Copper	ND	47.3	0.10	2.0	50	-	95	85-115
Iron	ND	4700	4.4	20	5000	-	94	85-115
Lead	ND	50.2	0.078	0.50	50	-	100	85-115
Mercury	ND	1.18	0.010	0.050	1.25	-	95	85-115
Molybdenum	ND	48.0	0.26	0.50	50	-	96	85-115
Nickel	ND	46.9	0.18	0.50	50	-	94	85-115
Selenium	ND	47.7	0.15	0.50	50	-	95	85-115
Silver	ND	47.5	0.025	0.19	50	-	95	85-115
Zinc	ND	479	5.0	15	500	-	96	85-115
Surrogate Recovery								
Terbium	751	740			750	100	99	70-130



Quality Control Report

Client: NRG Energy, LLC

Date Prepared: 4/25/18

Date Analyzed: 4/25/18

Instrument: ICP-MS2

Matrix: Water

Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E12

BatchID: 157145

Extraction Method: E200.8

Analytical Method: E200.8

Unit: µg/L

Sample ID: MB/LCS-157145
1804D77-016DMS/MSD

QC Summary Report for Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Arsenic	47.8	47.9	50	ND	96	96	75-125	0	20
Cadmium	47.6	47.5	50	ND	95	95	75-125	0	20
Chromium	47.8	47.8	50	ND	96	96	75-125	0	20
Copper	47.3	47.2	50	ND	94	94	75-125	0	20
Iron	4840	4840	5000	67	96	95	75-125	0.103	20
Lead	50.4	49.4	50	ND	101	99	75-125	2.08	20
Mercury	1.24	1.22	1.25	ND	97	96	75-125	1.55	20
Molybdenum	47.8	48.2	50	ND	96	96	75-125	0	20
Nickel	47.4	47.1	50	ND	95	94	75-125	0.699	20
Selenium	47.2	48.6	50	ND	94	97	75-125	2.84	20
Silver	47.6	48.0	50	ND	95	96	75-125	0.712	20
Zinc	480	477	500	ND	96	95	75-125	0.502	20

Surrogate Recovery

Terbium	738	740	750		98	99	70-130	0.257	20
---------	-----	-----	-----	--	----	----	--------	-------	----

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Arsenic	ND<2.5	ND	-	-
Cadmium	ND<1.2	ND	-	-
Chromium	ND<2.5	ND	-	-
Copper	ND<10	ND	-	-
Iron		67		-
Lead	ND<2.5	ND	-	-
Mercury	ND<0.25	ND	-	-
Molybdenum	ND<2.5	ND	-	-
Nickel	ND<2.5	ND	-	-
Selenium	ND<2.5	ND	-	-
Silver	ND<0.95	ND	-	-
Zinc	ND<75	ND	-	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.

McC Campbell Analytical, Inc.

1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262



CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1804E12

ClientCode: GOA

☐ WaterTrax

☐ WriteOn

☐ EDF

☐ Excel

☐ EQulS

☒ Email

☐ HardCopy

☐ ThirdParty

☒ J-flag

☐ Detection Summary

☐ Dry-Weight

Report to:

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party: David.Frandsen@nrg.com; Kathy.crist@nr
PO: 4501801523
Project: Marsh Landing: DDS: Quarterly

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TAT: 5 days;

Date Received: 04/25/2018

Date Logged: 04/25/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1804E12-001	(ML-18-045) FAC Combined Wastewater	Water	4/25/2018 10:00	☐	A											

Test Legend:

1	METALSMS_TTLC_W
5	
9	

2	
6	
10	

3	
7	
11	

4	
8	
12	

Prepared by: Kena Ponce

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: Marsh Landing: DDSD: Quarterly

Comments:

Work Order: 1804E12
QC Level: LEVEL 2
Date Logged: 4/25/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1804E12-001A	(ML-18-045) FAC Combined Wastewater	Water	E200.8 (Metals) <Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Zinc>	1	250mL HDPE w/ HNO3	☐	4/25/2018 10:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

Chain of Custody

Page 1 of 1

Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

1804E12

SAMPLES SUBMITTED TO						SEND INVOICE TO		PROJECT				ANALYSIS REQUEST			
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No. 1644 Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925 252 9262/ 925 252 9269						Company: NRG Energy, Inc Attention: Sandra Herndon Address: 112 Telly St New Roads, LA 70760 P O No.: 4501801523		Plant: Marsh Landing Title: DDSD Phase: Quarterly Manager: David Frandsen				Total Metals¹ (EPA Method 200.8)			
SAMPLE INFORMATION										CONTAINER INFORMATION					
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.	Total Metals ¹			
ML-18-045	25-Apr-18	1000	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	250	HNO3 (pH<2)	X			
HOLDING TIME 28 days															
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 925 324-3533/6509 Phone/Fax: E-mail: david.frandsen@nrg.com E-mailCC: james.robinson@nrg.com E-mailCC: jos.moura@nrg.com E-mailCC: mary.jordan@nrg.com E-mailCC: kathy.young@nrg.com			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION				DIRECTIONS FOR LABORATORY STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Nickel, Molybdenum, Selenium (reaction mode), Silver, Zinc *Include sample description with client sample ID.								
PRINTED NAME		SIGNATURE		COMPANY		DATE		TIME							
Sampled by: James Robinson		<i>James Robinson</i>		NRG		25-Apr-18		1000							
Relinquished by: James Robinson		<i>James Robinson</i>		NRG		25-Apr-18		1634							
Received by: Kena Ponce		<i>Kena Ponce</i>		MAI		25-Apr-18		1634							
Relinquished by:															
Received by:															
Relinquished by:															
Received by:															



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **Marsh Landing: DDSD: Quarterly**
WorkOrder No: **1804E12** Matrix: Water
Carrier: Client Drop-In

Date and Time Received: **4/25/2018 16:34**
Date Logged: **4/25/2018**
Received by: Kena Ponce
Logged by: Kena Ponce

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☒	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☒
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

Sample/Temp Blank temperature	Temp: 5.4°C	NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☐ No ☐	NA ☒
Sample labels checked for correct preservation?	Yes ☒ No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☒ No ☐	NA ☐

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐ No ☐	NA ☒
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐ No ☐	NA ☒

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1804E11

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501801523

Project: Marsh Landing: DDSD: Quarterly

Project Received: 04/25/2018

Analytical Report reviewed & approved for release on 05/01/2018 by:

Christine Askari

Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: Marsh Landing; DDSD: Quarterly
WorkOrder: 1804E11

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Analytical Report

Client: NRG Energy, LLC

Date Received: 4/25/18 16:34

Date Prepared: 4/25/18

Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11

Extraction Method: SM5210B

Analytical Method: SM5210 B-2001

Unit: mg/L

Biochemical Oxygen Demand (BOD)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1804E11-001B	Water	04/25/2018 10:00	WetChem	157182

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
BOD	12	4.0	4.0	1	04/30/2018 14:09

Analyst(s): AL



Analytical Report

Client: NRG Energy, LLC
Date Received: 4/25/18 16:34
Date Prepared: 4/30/18
Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11
Extraction Method: SM5220 D-1997
Analytical Method: SM5220 D-1997
Unit: mg/L

Chemical Oxygen Demand (COD) as mg O₂ /L

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1804E11-001A	Water	04/25/2018 10:00	SPECTROPHOTOMETER	157372

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
COD	38	7.2	10	1	04/30/2018 12:30

Analyst(s): RB



Analytical Report

Client: NRG Energy, LLC
Date Received: 4/25/18 16:34
Date Prepared: 4/26/18
Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11
Extraction Method: SM2540 C-1997
Analytical Method: SM2540 C-1997
Unit: mg/L

Total Dissolved Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1804E11-001C	Water	04/25/2018 10:00	WetChem	157237

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Dissolved Solids	300	10.0	10.0	1	04/27/2018 06:45

Analyst(s): RB



Analytical Report

Client: NRG Energy, LLC
Date Received: 4/25/18 16:34
Date Prepared: 4/26/18
Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11
Extraction Method: SM2540 D-1997
Analytical Method: SM2540 D-1997
Unit: mg/L

Total Suspended Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1804E11-001D	Water	04/25/2018 10:00	WetChem	157234

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Suspended Solids	4.60	1.00	1.00	1	04/26/2018 13:35

Analyst(s): AL



Quality Control Report

Client: NRG Energy, LLC

Date Prepared: 4/25/18

Date Analyzed: 4/30/18

Instrument: WetChem

Matrix: Water

Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11

BatchID: 157182

Extraction Method: SM5210B

Analytical Method: SM5210 B-2001

Unit: mg/L

Sample ID: MB/LCS/LCSD-157182

QC Summary Report for BOD

Analyte	MB Result	MDL	RL			
BOD	ND	4.0	4.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
BOD	172	170	198	87	86	80-120	0.878	16



Quality Control Report

Client: NRG Energy, LLC

Date Prepared: 4/30/18

Date Analyzed: 4/30/18

Instrument: SPECTROPHOTOMETER

Matrix: Water

Project: Marsh Landing: DDSD: Quarterly

WorkOrder: 1804E11

BatchID: 157372

Extraction Method: SM5220 D-1997

Analytical Method: SM5220 D-1997

Unit: mg/L

Sample ID: MB/LCS/LCSD-157372
1804E93-001HMS/MSD

QC Summary Report for COD

Analyte	MB Result	MDL	RL			
COD	ND	7.2	10	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
COD	104	104	100	104	104	90-110	0	20

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
COD	NR	NR		24000	NR	NR	-	NR	-



Quality Control Report

Client: NRG Energy, LLC

WorkOrder: 1804E11

Date Prepared: 4/26/18

BatchID: 157237

Date Analyzed: 4/27/18

Extraction Method: SM2540 C-1997

Instrument: WetChem

Analytical Method: SM2540 C-1997

Matrix: Water

Unit: mg/L

Project: Marsh Landing: DDS: Quarterly

QC Summary Report for Total Dissolved Solids

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1804D78-001C	219	1	220	1	0.46	<10



Quality Control Report

Client: NRG Energy, LLC

WorkOrder: 1804E11

Date Prepared: 4/26/18

BatchID: 157234

Date Analyzed: 4/26/18

Extraction Method: SM2540 D-1997

Instrument: WetChem

Analytical Method: SM2540 D-1997

Matrix: Water

Unit: mg/L

Project: Marsh Landing: DDS: Quarterly

QC Summary Report for Total Suspended Solids

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1804E11-001D	4.60	1	4.70	1	2.15	<10



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1804E11

ClientCode: GOA

☐ WaterTrax

☐ WriteOn

☐ EDF

☐ Excel

☐ EQuIS

☒ Email

☐ HardCopy

☐ ThirdParty

☒ J-flag

☐ Detection Summary

☐ Dry-Weight

Report to:

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party: Kathy.crist@nrg.com; joe.moura@nrg.com;
PO: 4501801523
Project: Marsh Landing: DDS: Quarterly

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TATs: 5 days;
7 days;

Date Received: 04/25/2018

Date Logged: 04/25/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1804E11-001	FAC Combined Wastewater	Water	4/25/2018 10:00	☐	B	A	C	D								

Test Legend:

1	BOD_W
5	
9	

2	COD_W
6	
10	

3	TDS_W
7	
11	

4	TSS_W
8	
12	

Prepared by: Kena Ponce

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: Marsh Landing: DDSD: Quarterly

Comments:

Work Order: 1804E11
QC Level: LEVEL 2
Date Logged: 4/25/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1804E11-001A	FAC Combined Wastewater	Water	SM5220D (COD)	2	aVOA w/ H2SO4	☐	4/25/2018 10:00	5 days	None	☐	
1804E11-001B	FAC Combined Wastewater	Water	SM5210B (BOD)	1	1L HDPE, unprsv.	☐	4/25/2018 10:00	7 days	None	☐	
1804E11-001C	FAC Combined Wastewater	Water	SM2540C (TDS)	1	500mL HDPE, unprsv.	☐	4/25/2018 10:00	5 days	None	☐	
1804E11-001D	FAC Combined Wastewater	Water	SM2540D (TSS)	1	1L HDPE, unprsv.	☐	4/25/2018 10:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

Chain of Custody

Page 1 of 1

Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

1804/El

SAMPLES SUBMITTED TO							SEND INVOICE TO		PROJECT				ANALYSIS REQUEST				
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No.: 1644 Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925.252.9262/ 925.252.9269							Company: NRG Energy, Inc. Attention: Sandra Heardon Address: 112 Tully St. New Roads, LA 70780 P.O. No.: 4501801523		Plant: Marsh Landing Title: DDSD Phase: Quarterly Manager: David Frandsen				COD (SM 5220D) 800 (SM 5210B) TDS (SM 2540B) TSS (SM 2540D)				
SAMPLE INFORMATION							CONTAINER INFORMATION										
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.	COD (SM 5220D)	800 (SM 5210B)	TDS (SM 2540B)	TSS (SM 2540D)		
ML-18-041	25-Apr-18	1000	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	2	Amber VOAs	43	H ₂ SO ₄ (pH<2, 4°C)	X					
ML-18-042	25-Apr-18	1000	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HOPE Bottle	1,000	None (Z1-S, 4°C)		X				
ML-18-043	25-Apr-18	1000	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HOPE Bottle	500	None (4°C)			X			
mL-18-044	25-Apr-18	1000	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	Poly	1,000	None				X		
												HOLDING TIME: 28 days 48 hours 7 days 7 days					
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925.324.3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: karmour.a@nrg.com E-mail CC: holly.candlish@nrg.com E-mail CC: holly.candlish@nrg.com			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNO) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. *Include sample description with client sample ID.									
PRINTED NAME			SIGNATURE			COMPANY			DATE			TIME					
Sampled by			James Robinson			James Robinson			NRG			25-Apr-18			1000		
Relinquished by			James Robinson			James Robinson			NRG			25-Apr-18			1634		
Received by			Kena Ponce			Kena Ponce			MAI			25-Apr-18			1634		
Relinquished by																	
Received by																	
Relinquished by																	
Received by																	

S.Y



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **Marsh Landing: DDSD: Quarterly**

Date and Time Received: **4/25/2018 16:34**

Date Logged: **4/25/2018**

Received by: **Kena Ponce**

Logged by: **Kena Ponce**

WorkOrder No: **1804E11** Matrix: Water

Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☒	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☒
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

Sample/Temp Blank temperature	Temp: 5.4°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☒	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☒	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐	No ☐	NA ☒

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐	No ☐	NA ☒
--	------------------------------	-----------------------------	--

Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐	No ☐	NA ☒
--	------------------------------	-----------------------------	--

Comments:

RECEIVED BY
DELTA DIABLO

OCT 05 2018

Industrial User Report Checklist And Certification Statement Form

Attn:	Mike Auer		
Environmental Compliance Specialist			
Environmental Specialist	Phone	(925) 756-1900	Fax (925) 756-1961
Industrial User Facility Name	N KGM ashLandng, LLC		
Duly Authorized Representative Name	Joe Moura		
Duly Authorized Representative Phone	925-779-6685		

This Industrial User Report Checklist and Certification Statement Form shall be submitted with all Self-Monitoring Reports (SMRs), as specified by the Wastewater Discharge Permit issued by Delta Diablo, hereinafter referred to as the District. When submitting Self-Monitoring Reports, check all that are applicable.

Self-Monitoring Reports (SMRs) (Required)

☒ Flow Discharge Summary (Review Discharge Permit.)

☐ Calibration of Effluent Flow Meters; if applicable.

☒ Monitoring Results -- all required tests completed, results reviewed, results included
Quality Assurance/Quality Control (QA/QC) and Chain-of-Custody (COC) (Review Discharge Permit):

☒ pH (field-grab) (shall be analyzed within 15 minutes of sample collection).

Results, collection time, analysis time and Technician's Initials shall be reported in the comments section of the respective COC. The pH meter shall be accurate and reproducible to 0.1 pH unit with a range of 0 to 14 and equipped with a temperature-compensation adjustment (Standard methods).

☒ Cyanide samples were tested for oxidizers and preserved with Sodium Hydroxide (NaOH).
This shall be reported in the comments section on the respective COC, if applicable.

☒ Selenium lab analysis by EPA Method 200.8 by Reaction Mode: if applicable.

☒ Total Phenolics lab analysis by EPA Method 420.4: if applicable.

☒ All sample analysis for regulatory compliance reporting shall be completed by an
ELAP certified Laboratory.

☒ Certification Statement included (see attached)

☐ Other requested data _____



Industrial User Report Checklist And Certification Statement Form

Violations (if applicable)

- ☐ All wastewater discharge violations are reported during this period:
- ☐ The District was contacted within 24- hours of becoming aware of the violation.
Date: _____
- ☐ A follow-up resample was completed. Date: _____
- ☐ Corrective actions implemented to resolve violation (Please explain in writing)
- ☐ Significant Non-Compliance (SNC) Status Review

Please circle the review period *: **January – June** and **July -December**.

The SIU shall conduct a SNC review for the previous completed period * prior to the Self-monitoring Report (SMR) due date. Examples: A October SMR due date, the SNC review period is **January – June** or an April SMR due date, the SNC review period is **July – December**.

The SNC definition can be found in 40 CFR 403.8.

- a) Chronic SNC= >66% of a regulated parameter in violation during six-month Period *.
- b) Technical Review Criteria (TRC) SNC = >33% of a regulated pollutant during a six-month period* equals or exceeds the product of the daily maximum limit or the average limit multiplied by the applicable TRC factor (1.4 for BOD, TSS and Oil/Grease and 1.2 for all other regulated pollutants except pH).

☐ Is the SIU in SNC (as defined in a and/or b) for this period*? Yes ☐, No ☐; If yes, for what period? _____. Please report the SNC status to the District in the SMR and include corrective actions to resolve the SNC classification.

☐ Other violations – i.e., reporting, spills to sewer, or prohibited discharges

All violations will be discussed in the cover letter of the Self-Monitoring Report.

☐ Significant Changes

Anticipated changes that may alter the nature, quality, or volume of the wastewater discharged. Planned changes shall be submitted at least 90 days prior to implementation, and shall include a detailed description of this change.



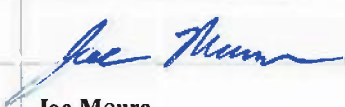
Industrial User Report Checklist And Certification Statement Form

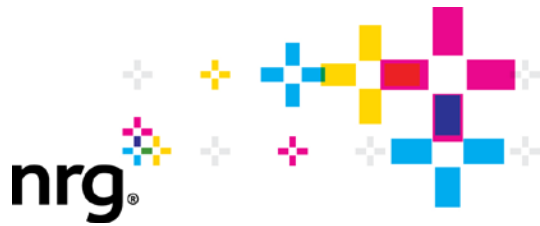
Certification Statement

Industrial User Facility Name	NRG Marsh Landing, LLC
Industrial User Facility Address	3201-C Wilbur Avenue, Antioch, CA 94509
Duly Authorized Representative Phone	925-779-6685
Indicate Period Covered by This Report	July 1-September 30, 2018

Certification Statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations (40 CFR 403.6).

Duly Authorized Representative Signature	
Duly Authorized Representative Print	Joe Moura
Date	10/04/2018



NRG Marsh Landing, LLC
Marsh Landing Generating Station
3201-C Wilbur Avenue (shipping)
PO Box 1687 (mailing)
Antioch, CA 94509

October 4, 2018

Mr. Mike Auer
Delta Diablo
2500 Pittsburg-Antioch Highway
Antioch, CA 94509-1373

**Subject: 2018 Third Quarterly (July 1-September 30) Self-Monitoring Report
NRG Marsh Landing, LLC, Marsh Landing Generating Station,
Industrial Wastewater Discharge Permit 0311963-S**

This letter documents the transmittal of the 2018 Third Quarterly Self-Monitoring Report (SMR).

Compliance Statement (choose one):

- ☒ There were no violations of waste discharge requirements during the reporting period.
- ☐ The following violation(s) of waste discharge requirements occurred during the reporting period, as described below:

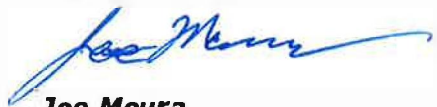
Discussion:

This report is the SMR filed for the station and covers the period from July 1 through September 30, 2018. This report includes monthly flow data and quarterly and semiannual analytical data required to be collected in 2018. Data are summarized in the attached tables.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. David Frandsen, Environmental Specialist at davld.frandsen@nrg.com or call 925.779.6695

Sincerely,



Joe Moura

Site Manager

NRG Marsh Landing, LLC

Marsh Landing Generating Station

Attachments

Table 1:	Quarterly Results for Combined Wastewater (FAC Combined)
Table 2:	Semiannual Results for Combined Wastewater (FAC Combined)
Table 3:	July 2018 Monthly Flow Data
Table 4:	August 2018 Monthly Flow Data
Table 5:	September 2018 Monthly Flow Data

Attachment 1: pH COC

Attachment 2: Analytical Reports

Table 1
Quarterly Results for Combined Wastewater (FAC Combined)

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509

Sample Station Location	FAC Combined
Sample Station Description	Local Limits FAC Combined Wastewater
Reporting Period	July - September 2018
Report Type	Quarterly

Constituent	Sample Date	Permit Limit	Result	Units
Field pH	8/7/2018	6-10	8.2	S.U.
BOD	8/7/2018	-	ND	mg/L
COD	8/7/2018	-	190	mg/L
Arsenic	8/7/2018	0.15	0.0011	mg/L
Cadmium	8/7/2018	0.1	ND	mg/L
Chromium	8/7/2018	0.5	0.00032 J	mg/L
Copper	8/7/2018	0.5	0.0049	mg/L
Iron	8/7/2018	-	0.061	mg/L
Lead	8/7/2018	0.5	0.000086 J	mg/L
Mercury	8/7/2018	0.003	ND	mg/L
Molybdenum	8/7/2018	-	0.0023	mg/L
Nickel	8/7/2018	0.5	0.0025	mg/L
Selenium	8/7/2018	0.25	ND	mg/L
Silver	8/7/2018	0.2	ND	mg/L
Zinc	8/7/2018	1.0	0.019	mg/L
TDS	8/7/2018	-	502	mg/L
TSS	8/7/2018	-	1.9	mg/L

B = Analyte detected in the associated Method Blank and in the sample

J = The reported concentration is an estimated value.

mg/L = Milligrams per liter

ND = Not detected at or above the laboratory Method Detection Limit or Reporting Limit.

S.U. = Standard units

Table 2
Semiannual Results for Combined Wastewater (FAC Combined)

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509

Sample Station Location	FAC Combined
Sample Station Description	Local Limits FAC Combined Wastewater
Reporting Period	July-December 2018
Report Type	Semiannual

Constituent	Sample Date	Permit Limit	Result	Units
Cyanide	8/7/2018	0.20	ND	mg/L
Total Phenolics (EPA 420.4)	8/7/2018	1.0	0.0029	mg/L
Ammonia as N	8/7/2018	200	1.1	mg/L
Oil and Grease Animal/Vegetable (HEM)	8/7/2018	300	19	mg/L
Oil and Grease Petroleum/Mineral (SGT-HEM)	8/7/2018	100	9.1	mg/L
4,4 - DDT	8/7/2018	-	0.0000027 J, P	mg/L
<i>Bromodichloromethane</i>	8/7/2018	-	0.0025	mg/L
<i>Bromoform</i>	8/7/2018	-	0.00015 J	mg/L
<i>Chloroform</i>	8/7/2018	-	0.0028	mg/L
<i>Dibromochloromethane</i>	8/7/2018	-	0.0013	mg/L
<i>Bis (2-ethylhexyl) Phthalate</i>	8/7/2018	-	0.00058 J	mg/L
<i>Di-n-octylphthalate</i>	8/7/2018	-	0.00045 J	mg/L
<i>Phenol</i>	8/7/2018	-	0.00078 J	mg/L
<i>Total Toxic Organics</i>	8/7/2018	2.0	0.0066	mg/L

J = The reported concentration is an estimated value and is not included in Total Toxic Organics total.

P = Agreement between quantitative confirmation results exceed method recommendation limits.

mg/L = Milligrams per liter

ND = Not detected at or above the laboratory Method Detection Limit or Reporting Limit.

Table 3
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	July, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	7/1/2018 - 7/31/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	0	0.00	
2	7,078	19.96	
3	4,484	19.58	
4	393	16.06	
5	0	0.00	
6	368	14.38	
7	4,261	19.63	
8	427	17.27	
9	4,270	20.06	
10	4,094	19.58	
11	6,203	19.65	
12	3,369	19.58	
13	384	14.73	
14	4,282	21.21	
15	0	0.00	
16	5,015	19.64	
17	15,888	19.57	
18	6,349	21.03	
19	15,672	19.63	
20	6,058	19.59	
21	449	16.13	
22	0	0.00	
23	16,424	20.04	
24	28,236	20.67	
25	28,118	20.54	
26	28,167	20.61	
27	29,273	20.59	
28	29,519	20.63	
29	29,470	20.61	
30	29,520	20.64	
31	27,694	20.59	

Total Monthly Flow (gal)	335,465	Did flow exceed limits?	NO
Daily Max Flow (gpd)	29,520	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	10,821		

Table 4
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	August, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	8/1/2018 - 8/31/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	29,479	20.62	
2	29,518	20.62	
3	20,348	20.60	
4	726	20.58	
5	8,232	23.13	1
6	29,370	20.65	
7	29,430	20.67	
8	29,517	20.72	
9	29,476	20.69	
10	29,524	20.68	
11	29,494	20.65	
12	29,519	20.62	
13	29,471	20.65	
14	29,518	20.61	
15	29,476	20.63	
16	29,520	20.60	
17	29,460	20.59	
18	28,996	20.64	
19	12,257	20.59	
20	1,882	20.09	
21	13,099	21.47	
22	14,368	20.11	
23	0	0.00	
24	386	15.79	
25	0	0.00	
26	0	0.00	
27	6,382	21.19	
28	4,381	20.07	
29	4,774	20.12	
30	7,383	20.25	
31	0	0.00	

Total Monthly Flow (gal)	535,987	Did flow exceed limits?	NO
Daily Max Flow (gpd)	29,524	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	17,290		

Table 5
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	September, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	9/1/2018 - 9/30/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	548	14.47	
2	0	0.00	
3	0	0.00	
4	13422	20.16	
5	5257	21.42	
6	11840	20.12	
7	5579	20.23	
8	13184	20.09	
9	372	17.41	
10	1655	17.62	
11	10382	21.43	
12	5025	20.12	
13	8936	20.26	
14	1967	19.02	
15	9589	20.51	
16	0	0.00	
17	0	0.00	
18	13868	20.17	
19	0	0.00	
20	12804	21.19	
21	5309	20.10	
22	4535	20.16	
23	0	0.00	
24	11203	20.46	
25	7266	20.20	
26	4877	20.22	
27	6524	20.31	
28	17394	21.16	
29	1304	20.09	
30	0	0.00	

Total Monthly Flow (gal)	172,839	Did flow exceed limits?	NO
Daily Max Flow (gpd)	17,394	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	5,761		

NPDES Monthly Analytical Report

Sample Point	Sample Number	Sample Date (m/d/y)	Sample Collection Time	Date Analyzed (m/d/y)	pH Analysis Time	Sample Medium	Sample Type (Grab, 24-Hour Composite)	pH
Method: SM Unit: 4500-H+B standard Reporting Limit: 0.18 Method Detection Limit: 0.06								
FAC Combined Wastewater	ML-18-081	8/7/18	1300	8/7/18	1300	Wastewater	Grab	8.2

SM = Standard Method; ppm = parts per million; mg/L = milligrams per liter; N/A = not applicable

Environmental Engineer

David Frandsen

Signature:

David Frandsen

Date:

Aug. 16, 2018

Sampling Technologist: James E Robinson

Signature:

James E. Robinson

Date:

8/7/18

Reviewed By:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1808290

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501808516

Project: DDSD; Marsh Landing

Project Received: 08/07/2018

Analytical Report reviewed & approved for release on 08/14/2018 by:

Christine Askari

Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Marsh Landing
WorkOrder: 1808290

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Marsh Landing
WorkOrder: 1808290

Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
j1 See attached narrative



Case Narrative

Client: NRG Energy, LLC
Project: DDSD; Marsh Landing

Work Order: 1808290
August 14, 2018

j1:

Our standard ICP-MS analytical procedure is to analyze selenium using the reaction mode.



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808290
Extraction Method: SM5210B
Analytical Method: SM5210 B-2001
Unit: mg/L

Biochemical Oxygen Demand (BOD)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808290-002B	Water	08/07/2018 13:00	WetChem	162955

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
BOD	ND	4.0	4.0	1	08/13/2018 14:45

Analyst(s): AL



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/13/18
Project: DDSD; Marsh Landing

WorkOrder: 1808290
Extraction Method: SM5220 D-1997
Analytical Method: SM5220 D-1997
Unit: mg/L

Chemical Oxygen Demand (COD) as mg O₂ /L

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808290-002A	Water	08/07/2018 13:00	SPECTROPHOTOMETER	163158

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
COD	190	7.2	10	1	08/13/2018 20:19

Analyst(s): PHU



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/7/18
Project: DDSD; Marsh Landing

WorkOrder: 1808290
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808290-002E	Water	08/07/2018 13:00	ICP-MS2 078SMPL.D	162800

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Arsenic	1.1		0.19	0.50	1	08/09/2018 15:41
Cadmium	ND		0.040	0.25	1	08/09/2018 15:41
Chromium	0.32	J	0.14	0.50	1	08/09/2018 15:41
Copper	4.9		0.10	2.0	1	08/09/2018 15:41
Iron	61		4.4	20	1	08/09/2018 15:41
Lead	0.086	J	0.078	0.50	1	08/09/2018 15:41
Mercury	ND		0.010	0.050	1	08/09/2018 15:41
Molybdenum	2.3		0.26	0.50	1	08/09/2018 15:41
Nickel	2.5		0.18	0.50	1	08/09/2018 15:41
Selenium	ND		0.15	0.50	1	08/09/2018 15:41
Silver	ND		0.025	0.19	1	08/09/2018 15:41
Zinc	19		5.0	15	1	08/09/2018 15:41

Surrogates	REC (%)	Limits	
Terbium	100	70-130	08/09/2018 15:41

Analyst(s): JC

Analytical Comments: j1



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808290
Extraction Method: SM2540 C-1997
Analytical Method: SM2540 C-1997
Unit: mg/L

Total Dissolved Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808290-002C	Water	08/07/2018 13:00	WetChem	162917

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Dissolved Solids	502	10.0	10.0	1	08/09/2018 08:10

Analyst(s): RB



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/9/18
Project: DDSD; Marsh Landing

WorkOrder: 1808290
Extraction Method: SM2540 D-1997
Analytical Method: SM2540 D-1997
Unit: mg/L

Total Suspended Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808290-002D	Water	08/07/2018 13:00	WetChem	162988

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Suspended Solids	1.90	1.00	1.00	1	08/09/2018 13:35

Analyst(s): AL



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/13/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808290
BatchID: 162955
Extraction Method: SM5210B
Analytical Method: SM5210 B-2001
Unit: mg/L
Sample ID: MB/LCS/LCSD-162955

QC Summary Report for BOD

Analyte	MB Result	MDL	RL			
BOD	ND	4.0	4.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
BOD	178	187	198	90	94	80-120	4.93	16



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/13/18
Date Analyzed: 8/13/18
Instrument: SPECTROPHOTOMETER
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808290
BatchID: 163158
Extraction Method: SM5220 D-1997
Analytical Method: SM5220 D-1997
Unit: mg/L
Sample ID: MB/LCS/LCSD-163158

QC Summary Report for COD

Analyte	MB Result	MDL	RL			
COD	ND	7.2	10	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
COD	102	102	100	102	102	90-110	0	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/6/18
Date Analyzed: 8/7/18
Instrument: ICP-MS3
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808290
BatchID: 162800
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS/LCSD-162800

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Arsenic	ND	0.19	0.50	-	-	-
Cadmium	ND	0.040	0.25	-	-	-
Chromium	ND	0.14	0.50	-	-	-
Copper	ND	0.10	2.0	-	-	-
Iron	ND	4.4	20	-	-	-
Lead	ND	0.078	0.50	-	-	-
Mercury	ND	0.010	0.050	-	-	-
Molybdenum	ND	0.26	0.50	-	-	-
Nickel	ND	0.18	0.50	-	-	-
Selenium	ND	0.15	0.50	-	-	-
Silver	ND	0.025	0.19	-	-	-
Zinc	ND	5.0	15	-	-	-

Surrogate Recovery

Terbium	745	750	99	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Arsenic	49.2	50.2	50	98	100	85-115	1.91	20
Cadmium	49.2	49.1	50	98	98	85-115	0	20
Chromium	48.4	48.8	50	97	98	85-115	0.638	20
Copper	48.3	48.0	50	97	96	85-115	0.643	20
Iron	4920	4930	5000	98	99	85-115	0.162	20
Lead	50.2	50.3	50	100	101	85-115	0.119	20
Mercury	1.20	1.20	1.25	96	96	85-115	0	20
Molybdenum	50.6	50.5	50	101	101	85-115	0	20
Nickel	49.3	48.9	50	99	98	85-115	0.754	20
Selenium	49.4	49.8	50	99	100	85-115	0.706	20
Silver	51.2	51.1	50	102	102	85-115	0	20
Zinc	487	488	500	97	98	85-115	0.103	20

Surrogate Recovery

Terbium	751	766	750	100	102	70-130	1.94	20
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Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808290
BatchID: 162917
Extraction Method: SM2540 C-1997
Analytical Method: SM2540 C-1997
Unit: mg/L

QC Summary Report for Total Dissolved Solids

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1808279-002C	275	1	262	1	4.84	<10



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/9/18
Date Analyzed: 8/9/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808290
BatchID: 162988
Extraction Method: SM2540 D-1997
Analytical Method: SM2540 D-1997
Unit: mg/L

QC Summary Report for Total Suspended Solids

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1808290-001D	ND	1	ND	1	N/A	<10

McCampbell Analytical, Inc.



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

☐ WaterTrax ☐ WriteOn ☐ EDF

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1808290

ClientCode: GOA

☐ Excel ☐ EQulS ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party:
PO: 4501808516
Project: DDSD; Marsh Landing

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TATs: 5 days;
7 days;

Date Received: 08/07/2018

Date Logged: 08/07/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1808290-002	FAC Combined Wastewater	Water	8/7/2018 13:00	☐	B	A	E	C	D							

Test Legend:

1	BOD_W
5	TSS_W
9	

2	COD_W
6	
10	

3	METALSMS_TTLC_W
7	
11	

4	TDS_W
8	
12	

Prepared by: Nancy Palacios

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: DDS; Marsh Landing

Comments:

Work Order: 1808290
QC Level: LEVEL 2
Date Logged: 8/7/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1808290-002A	FAC Combined Wastewater	Water	SM5220D (COD)	2	aVOA w/ H2SO4	☐	8/7/2018 13:00	5 days	None	☐	
1808290-002B	FAC Combined Wastewater	Water	SM5210B (BOD)	1	1L HDPE, unprsv.	☐	8/7/2018 13:00	7 days	None	☐	
1808290-002C	FAC Combined Wastewater	Water	SM2540C (TDS)	1	500mL HDPE, unprsv.	☐	8/7/2018 13:00	5 days	None	☐	
1808290-002D	FAC Combined Wastewater	Water	SM2540D (TSS)	1	1L HDPE, unprsv.	☐	8/7/2018 13:00	5 days	None	☐	
1808290-002E	FAC Combined Wastewater	Water	E200.8 (Metals) <Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Zinc>	1	250mL HDPE w/ HNO3	☐	8/7/2018 13:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

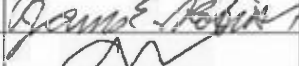
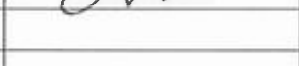
1808290

Chain of Custody

Page 3 of 4

Marsh Landing Generating Station

3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

SAMPLES SUBMITTED TO							SEND INVOICE TO		PROJECT		ANALYSIS REQUEST								
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No: 1644 Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925.252.9262/ 925.252.9268							Company: NRG Energy, Inc. Attention: Sandra Hemdon Address: 112 Tully St. New Roads, LA 70080 P.O. No.: 4501808516		Plant: Marsh Landing Title: DDSD Phase: Quarterly Manager: David Frandsen		COD (SM 5220D)	BOD (SM 5210B)	TDS (SM 2540B)	TSS (SM 2540D)					
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)					Preserv.				
ML-18-067	7-Aug-18	1300	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	2	Amber VOAs	43	H ₂ SO ₄ (pH<2, 4°C)	X							
ML-18-068	7-Aug-18	1300	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	1,000	None (ZnH ₂ , 4°C)		X						
ML-18-069	7-Aug-18	1300	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	500	None (4°C)			X					
ML-18-070	7-Aug-18	1300	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	Poly	1,000	None				X				
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925.324.3533/6509 E-mail: david.frandsen@nrg.com E-mailCC: james.robinson@nrg.com E-mailCC: joe.mour@nrg.com												LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION STANDARDTAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNO) with estimated J-lagged concentrations below the RL and include method detection limits (MDLs) in report. *Include sample description with client sample ID.							
PRINTED NAME James E Robinson												SIGNATURE 		COMPANY NRG		DATE 7-Aug-18		TIME 1300	
Relinquished by: James E Robinson														NRG		7-Aug-18		346	
Received by: AGUSTINA VENEGAS														MAI		8/7/18		1545	
Relinquished by:																			
Received by:																			
Relinquished by:																			
Received by:																			

1808290

Chain of Custody

Page 4 of 4

Marsh Landing Generating Station

3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509

Phone: (925) 779-6500 Fax: (925) 779-6509

SAMPLES SUBMITTED TO							SEND INVOICE TO		PROJECT			ANALYSIS REQUEST		
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No. 1644 Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925.252.9282/ 925.252.9269							Company: NRG Energy, Inc. Attention: Sandra Herndon Address: 112 Telly St New Roads, LA 70700 P.O. No.: 4501808516		Plant: Marsh Landing Title: DDSD Phase: Quarterly Manager: David Frandsen			Total Metals¹ (EPA Method 200.8)		
SAMPLE INFORMATION							CONTAINER INFORMATION							
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.			
ML-18-071	7-Aug-18	1300	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	250	HNO3 (pH<2)	X		
HOLDING TIME: 28 days														
REPORTING			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY						
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 Phone/Fax: 925.324.3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: joe.moura@nrg.com								STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Nickel, Molybdenum, Selenium (reaction mode), Silver, Zinc *Include sample description with client sample ID.						
PRINTED NAME			SIGNATURE					COMPANY		DATE		TIME		
Sampled by: James E Robinson			<i>James E. Robinson</i>					NRG		7-Aug-18		1300		
Relinquished by: James E Robinson			<i>James E. Robinson</i>					NRG		7-Aug-18		3:46		
Received by: <i>AGUSTINA VEREGAS</i>			<i>OW</i>					MAI		8/7/18		1:46		
Relinquished by:														
Received by:														
Relinquished by:														
Received by:														



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **DDSD; Marsh Landing**

Date and Time Received: **8/7/2018 15:46**
Date Logged: **8/7/2018**
Received by: **Agustina Venegas**
Logged by: **Nancy Palacios**

WorkOrder No: **1808290** Matrix: Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☒	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☒
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

Sample/Temp Blank temperature	Temp: 2°C		NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☒	No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☒	No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☒	No ☐	NA ☐

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐	No ☐	NA ☒
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐	No ☐	NA ☒

Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1808291

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501808516

Project: DDSD; Marsh Landing

Project Received: 08/07/2018

Analytical Report reviewed & approved for release on 08/16/2018 by:

Yen Cao

Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Marsh Landing
WorkOrder: 1808291

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Marsh Landing
WorkOrder: 1808291

Analytical Qualifiers

J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
P	Agreement between quantitative confirmation results exceed method recommended limits.
a1	Sample diluted due to matrix interference.
a19	Reporting limit near, but not identical to our standard reporting limit due to variable sample volume.



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/13/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E1664A_SG
Analytical Method: E1664A
Unit: mg/L

Hexane Extractable Material (HEM; Oil & Grease) with Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002A	Water	08/07/2018 13:00	O&G	163134

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
SGT-HEM	9.1	1.2	5.6	1	08/14/2018 12:25

Analyst(s): HN



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/10/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E1664A
Analytical Method: E1664A
Unit: mg/L

Hexane Extractable Material (HEM; Oil & Grease) without Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002B	Water	08/07/2018 13:00	O&G	163119

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
HEM	19	1.2	5.3	1	08/13/2018 09:55

Analyst(s): HN



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/9/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E608/SW3620B
Analytical Method: E608
Unit: µg/L

Organochlorine Pesticides + PCBs w/ Florisil Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002E	Water	08/07/2018 13:00	GC20 08101860.D	162982

Analytes	Result	Qualifiers	MDL	RL	DE	Date Analyzed
Aldrin	ND		0.0031	0.011	10	08/11/2018 02:16
a-BHC	ND		0.0034	0.011	10	08/11/2018 02:16
b-BHC	ND		0.0076	0.011	10	08/11/2018 02:16
d-BHC	ND		0.0015	0.011	10	08/11/2018 02:16
g-BHC	ND		0.0049	0.011	10	08/11/2018 02:16
Chlordane (Technical)	ND		0.025	0.22	10	08/11/2018 02:16
a-Chlordane	ND		0.0093	0.011	10	08/11/2018 02:16
g-Chlordane	ND		0.0016	0.011	10	08/11/2018 02:16
p,p-DDD	ND		0.0012	0.011	10	08/11/2018 02:16
p,p-DDE	ND		0.0020	0.011	10	08/11/2018 02:16
p,p-DDT	0.0027	JP	0.0019	0.011	10	08/11/2018 02:16
Dieldrin	ND		0.0015	0.011	10	08/11/2018 02:16
Endosulfan I	ND		0.0012	0.011	10	08/11/2018 02:16
Endosulfan II	ND		0.0050	0.011	10	08/11/2018 02:16
Endosulfan sulfate	ND		0.0036	0.022	10	08/11/2018 02:16
Endrin	ND		0.0020	0.011	10	08/11/2018 02:16
Endrin aldehyde	ND		0.0058	0.011	10	08/11/2018 02:16
Endrin ketone	ND		0.0029	0.011	10	08/11/2018 02:16
Heptachlor	ND		0.0045	0.011	10	08/11/2018 02:16
Heptachlor epoxide	ND		0.0027	0.011	10	08/11/2018 02:16
Methoxychlor	ND		0.0013	0.011	10	08/11/2018 02:16
Toxaphene	ND		0.022	0.22	10	08/11/2018 02:16
Aroclor1016	ND		0.021	0.22	10	08/11/2018 02:16
Aroclor1221	ND		0.026	0.22	10	08/11/2018 02:16
Aroclor1232	ND		0.042	0.22	10	08/11/2018 02:16
Aroclor1242	ND		0.031	0.22	10	08/11/2018 02:16
Aroclor1248	ND		0.020	0.22	10	08/11/2018 02:16
Aroclor1254	ND		0.016	0.22	10	08/11/2018 02:16
Aroclor1260	ND		0.031	0.22	10	08/11/2018 02:16
PCBs, total	ND		0.016	0.22	10	08/11/2018 02:16

Surrogates	REC (%)	Limits	
Decachlorobiphenyl	88	70-130	08/11/2018 02:16

Analyst(s): CK

Analytical Comments: a1



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E624
Analytical Method: E624
Unit: µg/L

Acrolein, Acrylonitrile, & 2-Chloroethyl Vinyl Ether

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002G	Water	08/07/2018 13:00	GC28 08081810.D	162938

Analytes	Result	MDL	RL	DE	Date Analyzed
Acrolein (Propenal)	ND	2.5	5.0	1	08/08/2018 13:10
Acrylonitrile	ND	1.0	2.0	1	08/08/2018 13:10
2-Chloroethyl Vinyl Ether	ND	0.50	1.0	1	08/08/2018 13:10

Surrogates	REC (%)	Limits	
Dibromofluoromethane	133	78-141	08/08/2018 13:10

Analyst(s): AK



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSO; Marsh Landing

WorkOrder: 1808291
Extraction Method: E624
Analytical Method: E624
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
FAC Combined Wastewater	1808291-002F	Water	08/07/2018 13:00	GC18 08061854.D	162886	
Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Benzene	ND		0.051	0.50	1	08/08/2018 02:16
Bromodichloromethane	2.5		0.20	0.50	1	08/08/2018 02:16
Bromoform	0.15	J	0.066	0.50	1	08/08/2018 02:16
Bromomethane	ND		0.16	0.50	1	08/08/2018 02:16
Carbon tetrachloride	ND		0.069	0.50	1	08/08/2018 02:16
Chlorobenzene	ND		0.050	0.50	1	08/08/2018 02:16
Chloroethane	ND		0.31	0.50	1	08/08/2018 02:16
Chloroform	2.8		0.064	0.50	1	08/08/2018 02:16
Chloromethane	ND		0.13	0.50	1	08/08/2018 02:16
Dibromochloromethane	1.3		0.080	0.50	1	08/08/2018 02:16
1,2-Dibromoethane (EDB)	ND		0.12	0.50	1	08/08/2018 02:16
1,2-Dichlorobenzene	ND		0.080	0.50	1	08/08/2018 02:16
1,3-Dichlorobenzene	ND		0.071	0.50	1	08/08/2018 02:16
1,4-Dichlorobenzene	ND		0.072	0.50	1	08/08/2018 02:16
1,1-Dichloroethane	ND		0.060	0.50	1	08/08/2018 02:16
1,2-Dichloroethane (1,2-DCA)	ND		0.090	0.50	1	08/08/2018 02:16
1,1-Dichloroethene	ND		0.086	0.50	1	08/08/2018 02:16
trans-1,2-Dichloroethene	ND		0.060	0.50	1	08/08/2018 02:16
1,2-Dichloropropane	ND		0.055	0.50	1	08/08/2018 02:16
cis-1,3-Dichloropropene	ND		0.090	0.50	1	08/08/2018 02:16
trans-1,3-Dichloropropene	ND		0.070	0.50	1	08/08/2018 02:16
Ethylbenzene	ND		0.050	0.50	1	08/08/2018 02:16
Methyl-t-butyl ether (MTBE)	ND		0.10	0.50	1	08/08/2018 02:16
Methylene chloride	ND		0.052	0.50	1	08/08/2018 02:16
1,1,2,2-Tetrachloroethane	ND		0.11	0.50	1	08/08/2018 02:16
Tetrachloroethene	ND		0.082	0.50	1	08/08/2018 02:16
Toluene	ND		0.040	0.50	1	08/08/2018 02:16
1,2,4-Trichlorobenzene	ND		0.086	0.50	1	08/08/2018 02:16
1,1,1-Trichloroethane	ND		0.050	0.50	1	08/08/2018 02:16
1,1,2-Trichloroethane	ND		0.080	0.50	1	08/08/2018 02:16
Trichloroethene	ND		0.060	0.50	1	08/08/2018 02:16
Trichlorofluoromethane	ND		0.047	0.50	1	08/08/2018 02:16
Vinyl chloride	ND		0.070	0.50	1	08/08/2018 02:16
Xylenes, Total	ND		0.25	0.50	1	08/08/2018 02:16

(Cont.)



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E624
Analytical Method: E624
Unit: µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002F	Water	08/07/2018 13:00	GC18 08061854.D	162886

Analytes	Result	Qualifiers	MDL	RL	DE	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			<u>Limits</u>		
Dibromofluoromethane	113			78-141		08/08/2018 02:16
Toluene-d8	120			78-129		08/08/2018 02:16
4-BFB	109			61-140		08/08/2018 02:16

Analyst(s): AK



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E625
Analytical Method: E625
Unit: µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
FAC Combined Wastewater	1808291-002H	Water	08/07/2018 13:00	GC21 08091809.D	162944	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.26	1.1	1	08/09/2018 13:10
Acenaphthylene	ND		0.28	1.1	1	08/09/2018 13:10
Anthracene	ND		0.16	1.1	1	08/09/2018 13:10
Benzidine	ND		0.31	5.4	1	08/09/2018 13:10
Benzo (a) anthracene	ND		0.17	1.1	1	08/09/2018 13:10
Benzo (a) pyrene	ND		0.18	1.1	1	08/09/2018 13:10
Benzo (b) fluoranthene	ND		0.17	1.1	1	08/09/2018 13:10
Benzo (g,h,i) perylene	ND		0.19	1.1	1	08/09/2018 13:10
Benzo (k) fluoranthene	ND		0.22	1.1	1	08/09/2018 13:10
Bis (2-chloroethoxy) Methane	ND		0.32	1.1	1	08/09/2018 13:10
Bis (2-chloroethyl) Ether	ND		0.26	1.1	1	08/09/2018 13:10
Bis (2-chloroisopropyl) Ether	ND		0.30	1.1	1	08/09/2018 13:10
Bis (2-ethylhexyl) Adipate	ND		0.54	1.1	1	08/09/2018 13:10
Bis (2-ethylhexyl) Phthalate	0.58	J	0.37	2.2	1	08/09/2018 13:10
4-Bromophenyl Phenyl Ether	ND		0.18	1.1	1	08/09/2018 13:10
Butylbenzyl Phthalate	ND		0.31	1.1	1	08/09/2018 13:10
4-Chloroaniline	ND		0.35	2.2	1	08/09/2018 13:10
4-Chloro-3-methylphenol	ND		0.29	1.1	1	08/09/2018 13:10
2-Chloronaphthalene	ND		0.27	1.1	1	08/09/2018 13:10
2-Chlorophenol	ND		0.28	1.1	1	08/09/2018 13:10
4-Chlorophenyl Phenyl Ether	ND		0.22	1.1	1	08/09/2018 13:10
Chrysene	ND		0.19	1.1	1	08/09/2018 13:10
Dibenzo (a,h) anthracene	ND		0.20	1.1	1	08/09/2018 13:10
Dibenzofuran	ND		0.23	1.1	1	08/09/2018 13:10
Di-n-butyl Phthalate	ND		0.32	1.1	1	08/09/2018 13:10
1,2-Dichlorobenzene	ND		0.25	1.1	1	08/09/2018 13:10
1,3-Dichlorobenzene	ND		0.24	1.1	1	08/09/2018 13:10
1,4-Dichlorobenzene	ND		0.24	1.1	1	08/09/2018 13:10
3,3-Dichlorobenzidine	ND		0.15	2.2	1	08/09/2018 13:10
2,4-Dichlorophenol	ND		0.30	1.1	1	08/09/2018 13:10
Diethyl Phthalate	ND		0.16	1.1	1	08/09/2018 13:10
2,4-Dimethylphenol	ND		0.11	1.1	1	08/09/2018 13:10
Dimethyl Phthalate	ND		0.19	1.1	1	08/09/2018 13:10
4,6-Dinitro-2-methylphenol	ND		1.1	5.4	1	08/09/2018 13:10
2,4-Dinitrophenol	ND		0.94	5.4	1	08/09/2018 13:10
2,4-Dinitrotoluene	ND		0.18	1.1	1	08/09/2018 13:10
2,6-Dinitrotoluene	ND		0.22	1.1	1	08/09/2018 13:10

(Cont.)



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E625
Analytical Method: E625
Unit: µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
FAC Combined Wastewater	1808291-002H	Water	08/07/2018 13:00	GC21 08091809.D	162944	
Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Di-n-octyl Phthalate	0.45	J	0.29	2.2	1	08/09/2018 13:10
1,2-Diphenylhydrazine	ND		0.17	1.1	1	08/09/2018 13:10
Fluoranthene	ND		0.19	1.1	1	08/09/2018 13:10
Fluorene	ND		0.22	1.1	1	08/09/2018 13:10
Hexachlorobenzene	ND		0.19	1.1	1	08/09/2018 13:10
Hexachlorobutadiene	ND		0.26	1.1	1	08/09/2018 13:10
Hexachlorocyclopentadiene	ND		1.3	5.4	1	08/09/2018 13:10
Hexachloroethane	ND		0.31	1.1	1	08/09/2018 13:10
Indeno (1,2,3-cd) pyrene	ND		0.20	1.1	1	08/09/2018 13:10
Isophorone	ND		0.34	1.1	1	08/09/2018 13:10
2-Methylnaphthalene	ND		0.31	1.1	1	08/09/2018 13:10
2-Methylphenol (o-cresol)	ND		0.20	1.1	1	08/09/2018 13:10
3 & 4-Methylphenol (m,p-Cresol)	3.7		0.20	1.1	1	08/09/2018 13:10
Naphthalene	ND		0.26	1.1	1	08/09/2018 13:10
2-Nitroaniline	ND		1.4	5.4	1	08/09/2018 13:10
3-Nitroaniline	ND		1.3	5.4	1	08/09/2018 13:10
4-Nitroaniline	ND		1.3	5.4	1	08/09/2018 13:10
Nitrobenzene	ND		0.34	1.1	1	08/09/2018 13:10
2-Nitrophenol	ND		1.5	5.4	1	08/09/2018 13:10
4-Nitrophenol	ND		1.8	5.4	1	08/09/2018 13:10
N-Nitrosodimethylamine	ND		0.80	5.4	1	08/09/2018 13:10
N-Nitrosodiphenylamine	ND		0.19	1.1	1	08/09/2018 13:10
N-Nitrosodi-n-propylamine	ND		0.38	1.1	1	08/09/2018 13:10
Pentachlorophenol	ND		0.54	5.4	1	08/09/2018 13:10
Phenanthrene	ND		0.24	1.1	1	08/09/2018 13:10
Phenol	0.78	J	0.37	1.1	1	08/09/2018 13:10
Pyrene	ND		0.26	1.1	1	08/09/2018 13:10
1,2,4-Trichlorobenzene	ND		0.24	1.1	1	08/09/2018 13:10
2,4,5-Trichlorophenol	ND		0.23	1.1	1	08/09/2018 13:10
2,4,6-Trichlorophenol	ND		0.25	1.1	1	08/09/2018 13:10

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Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDS D; Marsh Landing

WorkOrder: 1808291
Extraction Method: E625
Analytical Method: E625
Unit: µg/L

Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002H	Water	08/07/2018 13:00	GC21 08091809.D	162944

Analytes	Result	Qualifiers	MDL	RL	DE	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>			<u>Limits</u>		
2-Fluorophenol	63			8-130		08/09/2018 13:10
Phenol-d5	52			5-130		08/09/2018 13:10
Nitrobenzene-d5	106			20-140		08/09/2018 13:10
2-Fluorobiphenyl	102			40-140		08/09/2018 13:10
2,4,6-Tribromophenol	137			16-180		08/09/2018 13:10
Terphenyl-d14	123			40-170		08/09/2018 13:10

Analyst(s): REB

Analytical Comments: a19



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E350.1
Analytical Method: E350.1
Unit: mg/L

Ammonia As Nitrogen

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002D	Water	08/07/2018 13:00	WC_SKALAR 080818A1_42	162910

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
Ammonia, total as N	1.1	0.020	0.10	1	08/08/2018 13:15

Analyst(s): BM



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/8/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: Kelada-01
Analytical Method: Kelada-01
Unit: µg/L

Cyanide, Total

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002C	Water	08/07/2018 13:00	WC_SKALAR	080818A1_27 162926

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
Total Cyanide	ND	1.0	1.0	1	08/08/2018 14:57

Analyst(s): BM



Analytical Report

Client: NRG Energy, LLC
Date Received: 8/7/18 15:46
Date Prepared: 8/9/18
Project: DDSD; Marsh Landing

WorkOrder: 1808291
Extraction Method: E420.4
Analytical Method: E420.4
Unit: µg/L

Phenolics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1808291-002D	Water	08/07/2018 13:00	WC_SKALAR	080918A1_72 162979

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DE</u>	<u>Date Analyzed</u>
Phenolics	2.9	0.51	2.0	1	08/09/2018 14:48

Analyst(s): BM



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/13/18
Date Analyzed: 8/14/18
Instrument: O&G
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 163134
Extraction Method: E1664A_SG
Analytical Method: E1664A
Unit: mg/L
Sample ID: MB/LCS/LCSD-163134

QC Summary Report for E1664A

Analyte	MB Result	MDL	RL			
SGT-HEM	ND	1.1	5.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
SGT-HEM	9.07	9.36	10.42	87	90	64-132	3.17	30



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/13/18
Date Analyzed: 8/13/18
Instrument: O&G
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 163119
Extraction Method: E1664A
Analytical Method: E1664A
Unit: mg/L
Sample ID: MB/LCS/LCSD-163119

QC Summary Report for E1664A

Analyte	MB Result	MDL	RL			
HEM	ND	1.1	5.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
HEM	19.6	18.9	20.83	94	91	78-114	3.39	30



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/9/18
Date Analyzed: 8/10/18
Instrument: GC20
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162982
Extraction Method: E608/SW3620B
Analytical Method: E608
Unit: µg/L
Sample ID: MB/LCS/LCSD-162982

QC Summary Report for E608 w/ Florisil Clean-up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aldrin	ND	0.00028	0.0010	-	-	-
a-BHC	ND	0.00031	0.0010	-	-	-
b-BHC	ND	0.00069	0.0010	-	-	-
d-BHC	ND	0.00014	0.0010	-	-	-
g-BHC	ND	0.00045	0.0010	-	-	-
Chlordane (Technical)	ND	0.0023	0.020	-	-	-
a-Chlordane	ND	0.00085	0.0010	-	-	-
g-Chlordane	ND	0.00015	0.0010	-	-	-
p,p-DDD	ND	0.00011	0.0010	-	-	-
p,p-DDE	ND	0.00018	0.0010	-	-	-
o,p-DDT	ND	0.0010	0.0010	-	-	-
p,p-DDT	0.000386,J	0.00017	0.0010	-	-	-
Dieldrin	ND	0.00014	0.0010	-	-	-
Endosulfan I	ND	0.00011	0.0010	-	-	-
Endosulfan II	ND	0.00046	0.0010	-	-	-
Endosulfan sulfate	ND	0.00033	0.0020	-	-	-
Endrin	ND	0.00018	0.0010	-	-	-
Endrin aldehyde	ND	0.00053	0.0010	-	-	-
Endrin ketone	ND	0.00026	0.0010	-	-	-
Heptachlor	ND	0.00041	0.0010	-	-	-
Heptachlor epoxide	ND	0.00025	0.0010	-	-	-
Methoxychlor	ND	0.00012	0.0010	-	-	-
Toxaphene	ND	0.0020	0.020	-	-	-
Aroclor1016	ND	0.0019	0.020	-	-	-
Aroclor1221	ND	0.0024	0.020	-	-	-
Aroclor1232	ND	0.0038	0.020	-	-	-
Aroclor1242	ND	0.0028	0.020	-	-	-
Aroclor1248	ND	0.0018	0.020	-	-	-
Aroclor1254	ND	0.0015	0.020	-	-	-
Aroclor1260	ND	0.0028	0.020	-	-	-
PCBs, total	ND	0.0015	0.020	-	-	-
Surrogate Recovery						
Decachlorobiphenyl	0.0393			0.050	79	70-130

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Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/9/18
Date Analyzed: 8/10/18
Instrument: GC20
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162982
Extraction Method: E608/SW3620B
Analytical Method: E608
Unit: µg/L
Sample ID: MB/LCS/LCSD-162982

QC Summary Report for E608 w/ Florisil Clean-up

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aldrin	0.0340	0.0340	0.050	68	68	42-122	0	20
a-BHC	0.0392	0.0390	0.050	78	78	37-134	0	20
b-BHC	0.0401	0.0402	0.050	80	80	17-147	0	20
d-BHC	0.0405	0.0410	0.050	81	82	19-140	1.15	20
g-BHC	0.0378	0.0379	0.050	76	76	32-127	0	20
a-Chlordane	0.0348	0.0352	0.050	70	70	40-140	0	20
g-Chlordane	0.0354	0.0357	0.050	71	71	70-130	0	20
p,p-DDD	0.0370	0.0378	0.050	74	76	31-141	1.99	20
p,p-DDE	0.0388	0.0395	0.050	78	79	30-145	1.59	20
p,p-DDT	0.0338	0.0351	0.050	68	70	25-160	3.84	20
Dieldrin	0.0409	0.0414	0.050	82	83	36-146	1.12	20
Endosulfan I	0.0346	0.0347	0.050	69	69	45-153	0	20
Endosulfan II	0.0342	0.0350	0.050	68	70	0-202	2.49	20
Endosulfan sulfate	0.0358	0.0370	0.050	72	74	26-144	3.16	20
Endrin	0.0378	0.0384	0.050	76	77	30-147	1.67	20
Endrin aldehyde	0.0330	0.0336	0.050	66	67	40-140	2.04	20
Endrin ketone	0.0317	0.0330	0.050	63	66	40-140	4.16	20
Heptachlor	0.0327	0.0331	0.050	65	66	34-111	1.18	20
Heptachlor epoxide	0.0332	0.0333	0.050	66	67	37-142	0.425	20
Methoxychlor	0.0357	0.0364	0.050	71	73	70-130	2.00	20
Aroclor1016	0.123	0.110	0.15	82	73	50-114	11.4	20
Aroclor1260	0.103	0.0891	0.15	69	59	8-127	14.6	20
Surrogate Recovery								
Decachlorobiphenyl	0.0359	0.0368	0.050	72	74	70-130	2.66	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/8/18
Instrument: GC28
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162938
Extraction Method: E624
Analytical Method: E624
Unit: µg/L
Sample ID: MB/LCS/LCSD-162938
1808291-001GMS/MSD

QC Summary Report for E624

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acrolein (Propenal)	ND	2.5	5.0	-	-	-
Acrylonitrile	ND	1.0	2.0	-	-	-
2-Chloroethyl Vinyl Ether	ND	0.50	1.0	-	-	-
Surrogate Recovery						
Dibromofluoromethane	32.6			25	130	83-139

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acrolein (Propenal)	19.1	19.7	20	96	99	70-130	3.10	20
Acrylonitrile	19.4	19.7	20	97	99	70-130	1.33	20
2-Chloroethyl Vinyl Ether	19.2	19.6	20	96	98	70-130	2.05	20
Surrogate Recovery								
Dibromofluoromethane	33.0	32.7	25	132	131	83-139	0.868	20

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acrolein (Propenal)	20.6	20.4	20	ND	103	102	70-130	1.21	20
Acrylonitrile	18.9	20.1	20	ND	94	100	70-130	6.11	20
2-Chloroethyl Vinyl Ether	20.8	22.5	20	ND	104	112	70-130	7.75	20
Surrogate Recovery									
Dibromofluoromethane	33.4	33.8	25		134	135	78-141	1.01	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/7/18
Date Analyzed: 8/7/18
Instrument: GC18
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162886
Extraction Method: E624
Analytical Method: E624
Unit: µg/L
Sample ID: MB/LCS/LCSD-162886

QC Summary Report for E624

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Benzene	ND	0.051	0.20	-	-	-
Bromodichloromethane	ND	0.20	0.50	-	-	-
Bromoform	ND	0.066	0.50	-	-	-
Bromomethane	ND	0.16	0.50	-	-	-
Carbon tetrachloride	ND	0.069	0.50	-	-	-
Chlorobenzene	ND	0.050	0.50	-	-	-
Chloroethane	ND	0.31	0.50	-	-	-
Chloroform	ND	0.064	0.50	-	-	-
Chloromethane	ND	0.13	0.50	-	-	-
Dibromochloromethane	ND	0.080	0.50	-	-	-
1,2-Dibromoethane (EDB)	ND	0.12	0.50	-	-	-
1,2-Dichlorobenzene	ND	0.080	0.50	-	-	-
1,3-Dichlorobenzene	ND	0.071	0.50	-	-	-
1,4-Dichlorobenzene	ND	0.072	0.50	-	-	-
1,1-Dichloroethane	ND	0.060	0.50	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.090	0.50	-	-	-
1,1-Dichloroethene	ND	0.086	0.50	-	-	-
trans-1,2-Dichloroethene	ND	0.060	0.50	-	-	-
1,2-Dichloropropane	ND	0.055	0.50	-	-	-
cis-1,3-Dichloropropene	ND	0.090	0.50	-	-	-
trans-1,3-Dichloropropene	ND	0.070	0.50	-	-	-
Ethylbenzene	ND	0.050	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.10	0.50	-	-	-
Methylene chloride	ND	0.052	0.50	-	-	-
Styrene	ND	0.060	0.50	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.11	0.50	-	-	-
Tetrachloroethene	ND	0.082	0.50	-	-	-
Toluene	ND	0.040	0.50	-	-	-
1,2,4-Trichlorobenzene	ND	0.086	0.50	-	-	-
1,1,1-Trichloroethane	ND	0.050	0.50	-	-	-
1,1,2-Trichloroethane	ND	0.080	0.50	-	-	-
Trichloroethene	ND	0.060	0.50	-	-	-
Trichlorofluoromethane	ND	0.047	0.50	-	-	-
Vinyl chloride	ND	0.070	0.50	-	-	-
Xylenes, Total	ND	0.25	0.50	-	-	-

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Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/7/18
Date Analyzed: 8/7/18
Instrument: GC18
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162886
Extraction Method: E624
Analytical Method: E624
Unit: µg/L
Sample ID: MB/LCS/LCSD-162886

QC Summary Report for E624

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
Dibromofluoromethane	26.9			25	108	83-139
Toluene-d8	29.5			25	118	87-125
4-BFB	2.77			2.5	111	74-133



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/7/18
Date Analyzed: 8/7/18
Instrument: GC18
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162886
Extraction Method: E624
Analytical Method: E624
Unit: µg/L
Sample ID: MB/LCS/LCSD-162886

QC Summary Report for E624

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzene	9.16	9.12	10	92	91	37-151	0	20
Bromodichloromethane	8.58	8.53	10	86	85	35-155	0	20
Bromoform	9.74	9.73	10	97	97	45-169	0	20
Bromomethane	9.50	9.57	10	95	96	1-242	0	20
Carbon tetrachloride	9.43	9.38	10	94	94	70-140	0	20
Chlorobenzene	9.06	9.06	10	91	91	37-160	0	20
Chloroethane	9.71	9.74	10	97	97	14-230	0	20
Chloroform	9.79	9.76	10	98	98	51-138	0	20
Chloromethane	10.2	10.5	10	102	105	1-273	0	20
Dibromochloromethane	8.91	8.93	10	89	89	53-149	0	20
1,2-Dibromoethane (EDB)	9.59	9.61	10	96	96	62-127	0	20
1,2-Dichlorobenzene	9.31	9.36	10	93	94	18-190	0	20
1,3-Dichlorobenzene	9.02	8.94	10	90	89	59-156	0	20
1,4-Dichlorobenzene	8.88	8.79	10	89	88	18-190	0	20
1,1-Dichloroethane	9.91	9.84	10	99	98	70-130	0	20
1,2-Dichloroethane (1,2-DCA)	10.0	10.0	10	100	100	49-155	0	20
1,1-Dichloroethene	13.6	13.7	10	136	137	1-234	0	20
trans-1,2-Dichloroethene	10.1	9.94	10	101	99	54-156	0	20
1,2-Dichloropropane	8.78	8.72	10	88	87	1-210	0	20
cis-1,3-Dichloropropene	9.99	9.98	10	100	100	1-227	0	20
trans-1,3-Dichloropropene	9.70	9.68	10	97	97	17-183	0	20
Ethylbenzene	8.68	8.71	10	87	87	37-162	0	20
Methyl-t-butyl ether (MTBE)	9.63	9.58	10	96	96	70-130	0	20
Methylene chloride	9.80	9.79	10	98	98	1-221	0	20
Styrene	9.06	9.07	10	91	91	54-135	0	20
1,1,2,2-Tetrachloroethane	9.93	10.1	10	99	101	46-157	0	20
Tetrachloroethene	8.69	8.64	10	87	86	64-148	0	20
Toluene	8.86	8.83	10	89	88	47-150	0	20
1,2,4-Trichlorobenzene	9.70	9.54	10	97	95	57-139	0	20
1,1,1-Trichloroethane	9.51	9.38	10	95	94	52-162	0	20
1,1,2-Trichloroethane	8.87	8.92	10	89	89	52-150	0	20
Trichloroethene	8.34	8.28	10	83	83	71-157	0	20
Trichlorofluoromethane	9.38	9.37	10	94	94	17-181	0	20
Vinyl chloride	12.5	12.6	10	125	126	1-251	0	20
Xylenes, Total	26.6	26.5	30	89	88	59-128	0	20

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Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/7/18
Date Analyzed: 8/7/18
Instrument: GC18
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162886
Extraction Method: E624
Analytical Method: E624
Unit: µg/L
Sample ID: MB/LCS/LCSD-162886

QC Summary Report for E624

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Surrogate Recovery								
Dibromofluoromethane	29.3	29.1	25	117	116	83-139	0	20
Toluene-d8	29.9	30.0	25	120	120	87-125	0	20
4-BFB	2.87	2.89	2.5	115	116	74-133	0	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: GC21
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162944
Extraction Method: E625
Analytical Method: E625
Unit: µg/L
Sample ID: MB/LCS/LCSD-162944

QC Summary Report for E625

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.24	2.0	-	-	-
Acenaphthylene	ND	0.26	2.0	-	-	-
Anthracene	ND	0.15	2.0	-	-	-
Benzidine	ND	0.29	10	-	-	-
Benzo (a) anthracene	ND	0.16	2.0	-	-	-
Benzo (a) pyrene	ND	0.17	2.0	-	-	-
Benzo (b) fluoranthene	ND	0.16	2.0	-	-	-
Benzo (g,h,i) perylene	ND	0.18	2.0	-	-	-
Benzo (k) fluoranthene	ND	0.20	2.0	-	-	-
Benzyl Alcohol	ND	1.5	10	-	-	-
Bis (2-chloroethoxy) Methane	ND	0.30	2.0	-	-	-
Bis (2-chloroethyl) Ether	ND	0.24	2.0	-	-	-
Bis (2-chloroisopropyl) Ether	ND	0.28	2.0	-	-	-
Bis (2-ethylhexyl) Adipate	ND	2.0	2.0	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	0.34	4.0	-	-	-
4-Bromophenyl Phenyl Ether	ND	0.17	10	-	-	-
Butylbenzyl Phthalate	ND	0.29	2.0	-	-	-
4-Chloroaniline	ND	0.33	4.0	-	-	-
4-Chloro-3-methylphenol	ND	0.27	10	-	-	-
2-Chloronaphthalene	ND	0.25	2.0	-	-	-
2-Chlorophenol	ND	0.26	2.0	-	-	-
4-Chlorophenyl Phenyl Ether	ND	0.20	2.0	-	-	-
Chrysene	ND	0.18	2.0	-	-	-
Dibenzo (a,h) anthracene	ND	0.19	2.0	-	-	-
Dibenzofuran	ND	0.21	2.0	-	-	-
Di-n-butyl Phthalate	ND	0.30	2.0	-	-	-
1,2-Dichlorobenzene	ND	0.23	2.0	-	-	-
1,3-Dichlorobenzene	ND	0.22	2.0	-	-	-
1,4-Dichlorobenzene	ND	0.22	2.0	-	-	-
3,3-Dichlorobenzidine	ND	0.14	4.0	-	-	-
2,4-Dichlorophenol	ND	0.28	2.0	-	-	-
Diethyl Phthalate	ND	0.15	2.0	-	-	-
2,4-Dimethylphenol	ND	0.098	2.0	-	-	-
Dimethyl Phthalate	ND	0.18	2.0	-	-	-
4,6-Dinitro-2-methylphenol	ND	0.98	10	-	-	-
2,4-Dinitrophenol	ND	0.87	25	-	-	-
2,4-Dinitrotoluene	ND	0.17	2.0	-	-	-
2,6-Dinitrotoluene	ND	0.20	2.0	-	-	-

(Cont.)



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: GC21
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162944
Extraction Method: E625
Analytical Method: E625
Unit: µg/L
Sample ID: MB/LCS/LCSD-162944

QC Summary Report for E625

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Di-n-octyl Phthalate	ND	0.27	2.0	-	-	-
1,2-Diphenylhydrazine	ND	0.16	2.0	-	-	-
Fluoranthene	ND	0.18	2.0	-	-	-
Fluorene	ND	0.20	2.0	-	-	-
Hexachlorobenzene	ND	0.18	2.0	-	-	-
Hexachlorobutadiene	ND	0.24	2.0	-	-	-
Hexachlorocyclopentadiene	ND	1.2	10	-	-	-
Hexachloroethane	ND	0.29	2.0	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.19	2.0	-	-	-
Isophorone	ND	0.32	2.0	-	-	-
2-Methylnaphthalene	ND	0.29	2.0	-	-	-
2-Methylphenol (o-Cresol)	ND	0.19	2.0	-	-	-
3 & 4-Methylphenol (m,p-Cresol)	ND	0.19	2.0	-	-	-
Naphthalene	ND	0.24	2.0	-	-	-
2-Nitroaniline	ND	1.3	10	-	-	-
3-Nitroaniline	ND	1.2	10	-	-	-
4-Nitroaniline	ND	1.2	10	-	-	-
Nitrobenzene	ND	0.32	2.0	-	-	-
2-Nitrophenol	ND	1.4	10	-	-	-
4-Nitrophenol	ND	1.7	10	-	-	-
N-Nitrosodiphenylamine	ND	0.18	2.0	-	-	-
N-Nitrosodi-n-propylamine	ND	0.35	2.0	-	-	-
Pentachlorophenol	ND	0.50	10	-	-	-
Phenanthrene	ND	0.22	2.0	-	-	-
Phenol	ND	0.34	2.0	-	-	-
Pyrene	ND	0.24	2.0	-	-	-
Pyridine	ND	2.0	2.0	-	-	-
1,2,4-Trichlorobenzene	ND	0.22	2.0	-	-	-
2,4,5-Trichlorophenol	ND	0.21	2.0	-	-	-
2,4,6-Trichlorophenol	ND	0.23	2.0	-	-	-

(Cont.)



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: GC21
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162944
Extraction Method: E625
Analytical Method: E625
Unit: µg/L
Sample ID: MB/LCS/LCSD-162944

QC Summary Report for E625

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Surrogate Recovery						
2-Fluorophenol	18.0			20	90	8-130
Phenol-d5	20.3			20	102	5-130
Nitrobenzene-d5	20.4			20	102	20-140
2-Fluorobiphenyl	17.9			20	90	40-140
2,4,6-Tribromophenol	23.3			20	116	16-180
4-Terphenyl-d14	18.0			20	90	40-170



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: GC21
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162944
Extraction Method: E625
Analytical Method: E625
Unit: µg/L
Sample ID: MB/LCS/LCSD-162944

QC Summary Report for E625

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	8.66	8.82	10	87	88	63-119	1.75	25
Acenaphthylene	9.55	9.63	10	95	96	57-125	0.870	25
Anthracene	8.72	9.02	10	87	90	67-130	3.39	25
Benzidine	37.9	40.3	50	76	81	43-106	6.18	25
Benzo (a) anthracene	8.32	8.77	10	83	88	64-109	5.32	25
Benzo (a) pyrene	10.7	11.0	10	107	110	74-130	3.33	25
Benzo (b) fluoranthene	10.2	10.7	10	102	107	70-128	4.10	25
Benzo (g,h,i) perylene	8.98	9.18	10	90	92	69-128	2.20	25
Benzo (k) fluoranthene	10.0	10.1	10	100	101	66-130	0.915	25
Bis (2-chloroethoxy) Methane	9.16	9.91	10	92	99	60-118	7.83	25
Bis (2-chloroethyl) Ether	8.89	9.61	10	89	96	47-116	7.80	25
Bis (2-chloroisopropyl) Ether	8.83	9.61	10	88	96	44-116	8.43	25
Bis (2-ethylhexyl) Adipate	9.23	10.4	10	92	104	55-122	12.1	25
Bis (2-ethylhexyl) Phthalate	8.87	9.53	10	89	95	64-131	7.18	25
4-Bromophenyl Phenyl Ether	8.36	9.38	10	84	94	68-129	11.5	25
Butylbenzyl Phthalate	9.45	10.2	10	94	102	66-131	7.42	25
4-Chloroaniline	9.96	10.2	10	100	102	63-120	2.90	25
4-Chloro-3-methylphenol	11.0	11.5	10	110	115	69-127	4.55	25
2-Chloronaphthalene	8.44	8.80	10	84	88	61-120	4.17	25
2-Chlorophenol	9.21	9.75	10	92	98	49-119	5.70	25
4-Chlorophenyl Phenyl Ether	8.74	8.93	10	87	89	65-124	2.08	25
Chrysene	8.05	8.59	10	81	86	67-121	6.48	25
Dibenzo (a,h) anthracene	9.47	9.75	10	95	97	74-126	2.87	25
Dibenzofuran	9.06	9.17	10	91	92	64-122	1.29	25
Di-n-butyl Phthalate	9.48	10.0	10	95	101	64-139	5.79	25
1,2-Dichlorobenzene	9.08	9.74	10	91	97	44-115	7.07	25
1,3-Dichlorobenzene	9.18	9.55	10	92	95	42-114	3.98	25
1,4-Dichlorobenzene	8.60	9.17	10	86	92	43-114	6.50	25
3,3-Dichlorobenzidine	9.02	9.57	10	90	96	10-154	5.87	25
2,4-Dichlorophenol	10.9	11.5	10	109	115	65-123	5.23	25
Diethyl Phthalate	9.31	9.42	10	93	94	62-127	1.16	25
2,4-Dimethylphenol	10.6	11.1	10	106	111	60-119	4.40	25
Dimethyl Phthalate	9.29	9.35	10	93	94	63-125	0.688	25
4,6-Dinitro-2-methylphenol	49.0	49.2	50	98	98	59-123	0	25
2,4-Dinitrophenol	48.2	47.8	50	96	96	43-127	0	25
2,4-Dinitrotoluene	9.63	9.57	10	96	96	68-125	0	25
2,6-Dinitrotoluene	9.70	9.81	10	97	98	66-126	1.13	25
Di-n-octyl Phthalate	11.0	11.5	10	110	115	58-141	3.81	25

(Cont.)



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/9/18
Instrument: GC21
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162944
Extraction Method: E625
Analytical Method: E625
Unit: µg/L
Sample ID: MB/LCS/LCSD-162944

QC Summary Report for E625

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,2-Diphenylhydrazine	8.94	9.76	10	89	98	66-128	8.84	25
Fluoranthene	8.89	8.93	10	89	89	68-134	0	25
Fluorene	9.17	9.39	10	92	94	63-121	2.32	25
Hexachlorobenzene	8.25	8.90	10	83	89	68-127	7.62	25
Hexachlorobutadiene	8.51	9.47	10	85	95	48-122	10.7	25
Hexachlorocyclopentadiene	36.0	40.5	50	72	81	36-109	11.8	25
Hexachloroethane	8.56	9.50	10	86	95	43-116	10.4	25
Indeno (1,2,3-cd) pyrene	9.36	9.62	10	94	96	73-128	2.77	25
Isophorone	9.23	10.3	10	92	103	64-121	10.9	25
2-Methylnaphthalene	9.33	9.89	10	93	99	58-122	5.85	25
2-Methylphenol (o-Cresol)	9.65	10.6	10	97	106	55-121	9.16	25
3 & 4-Methylphenol (m,p-Cresol)	10.0	10.1	10	100	101	58-121	0.928	25
Naphthalene	8.71	9.30	10	87	93	53-120	6.57	25
2-Nitroaniline	51.4	51.0	50	103	102	65-124	0.819	25
3-Nitroaniline	53.2	52.0	50	106	104	67-125	2.22	25
4-Nitroaniline	53.4	51.2	50	107	102	65-124	4.28	25
Nitrobenzene	8.88	10.1	10	89	101	54-125	12.8	25
2-Nitrophenol	47.9	51.4	50	96	103	56-132	7.03	25
4-Nitrophenol	58.4	55.2	50	117	110	60-126	5.63	25
N-Nitrosodiphenylamine	8.89	9.35	10	89	94	67-132	5.10	25
N-Nitrosodi-n-propylamine	9.98	11.0	10	100	110	61-120	9.35	25
Pentachlorophenol	26.4	26.9	20	132	134	50-146	1.76	25
Phenanthrene	7.93	8.24	10	79	82	67-127	3.85	25
Phenol	9.48	9.86	10	95	99	52-119	3.90	25
Pyrene	8.35	9.16	10	83	92	67-132	9.33	25
1,2,4-Trichlorobenzene	9.25	9.83	10	93	98	50-121	6.04	25
2,4,5-Trichlorophenol	9.40	9.75	10	94	98	62-124	3.71	25
2,4,6-Trichlorophenol	9.28	9.60	10	93	96	61-125	3.45	25

Surrogate Recovery

2-Fluorophenol	18.7	19.0	20	93	95	29-140	1.90	25
Phenol-d5	21.6	21.3	20	108	106	38-148	1.43	25
Nitrobenzene-d5	21.9	22.6	20	110	113	31-152	3.07	25
2-Fluorobiphenyl	18.1	19.2	20	90	96	40-140	6.29	25
2,4,6-Tribromophenol	23.8	23.8	20	119	119	39-150	0	25
4-Terphenyl-d14	19.3	20.6	20	97	103	38-147	6.41	25



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/8/18
Instrument: WC_SKALAR
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162910
Extraction Method: E350.1
Analytical Method: E350.1
Unit: mg/L
Sample ID: MB/LCS/LCSD-162910
1808291-002DMS/MSD

QC Summary Report for E350.1

Analyte	MB Result	MDL	RL			
Ammonia, total as N	0.0201,J	0.020	0.10	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Ammonia, total as N	4.23	4.07	4	106	102	88-113	3.91	20

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Ammonia, total as N	4.98	5.11	4	1.1	97	100	88-113	2.59	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/8/18
Date Analyzed: 8/8/18
Instrument: WC_SKALAR
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162926
Extraction Method: Kelada-01
Analytical Method: Kelada-01
Unit: µg/L
Sample ID: MB/LCS/LCSD-162926
1808291-001CMS/MSD

QC Summary Report for Kelada-01

Analyte	MB Result	MDL	RL			
Total Cyanide	ND	1.0	1.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Total Cyanide	40.6	40.2	40	102	100	80-120	1.25	20

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Total Cyanide	40.0	41.6	40	ND	100	104	80-120	3.98	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/9/18
Date Analyzed: 8/9/18
Instrument: WC_SKALAR
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162979
Extraction Method: E420.4
Analytical Method: E420.4
Unit: µg/L
Sample ID: MB/LCS/LCSD-162979

QC Summary Report for E420.4

Analyte	MB Result	MDL	RL			
Phenolics	ND	0.51	2.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Phenolics	42.3	41.5	40	106	104	80-120	1.75	20

(Cont.)

CA ELAP 1644 • NELAP 4033ORELAP



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 8/9/18
Date Analyzed: 8/9/18
Instrument: WC_SKALAR
Matrix: Water
Project: DDSD; Marsh Landing

WorkOrder: 1808291
BatchID: 162986
Extraction Method: E420.4
Analytical Method: E420.4
Unit: µg/L
Sample ID: MB/LCS/LCSD-162986

QC Summary Report for E420.4

Analyte	MB Result	MDL	RL			
Phenolics	0.822,J	0.51	2.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Phenolics	41.2	40.2	40	103	101	80-120	2.29	20

McCampbell Analytical, Inc.



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

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CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1808291

ClientCode: GOA

☐ Excel ☐ EQulS ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party:
PO: 4501808516
Project: DDSD; Marsh Landing

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TAT: 5 days;

Date Received: 08/07/2018

Date Logged: 08/07/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1808291-001	Outfall A (City Water to Tank)	Water	8/7/2018 12:30	☐	A	B	E	F	G	H	D	C	D			
1808291-002	FAC Combined Wastewater	Water	8/7/2018 13:00	☐	A	B	E	F	G	H	D	C	D			

Test Legend:

1	1664A_SG_W
5	624ACR+2CEVE_W
9	PHENOLICS_W

2	1664A_W
6	625_W
10	

3	608_W [J]
7	AMMONIA_W
11	

4	624_W
8	CN_W
12	

Prepared by: Nancy Palacios

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: DDSD; Marsh Landing

Comments:

Work Order: 1808291
QC Level: LEVEL 2
Date Logged: 8/7/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1808291-001A	Outfall A (City Water to Tank)	Water	E1664A (SGT- HEM; Non-polar Material)	1	1LA w/ HCl	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001B	Outfall A (City Water to Tank)	Water	E1664A (HEM; Oil & Grease w/o S.G. Clean-Up)	1	1L w/ HCl	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001C	Outfall A (City Water to Tank)	Water	Kelada-01 (Cyanide, Total)	1	250mL aHDPE w/ NaOH	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001D	Outfall A (City Water to Tank)	Water	E420.4 (Phenolics)	1	500mL aG w/ H2SO4	☐	8/7/2018 12:30	5 days	None	☐	
			E350.1 (Ammonia)			☐		5 days	None	☐	
1808291-001E	Outfall A (City Water to Tank)	Water	E608 (OC Pesticides+PCBs w/ Florisil Clean-up)	1	1LA Narrow Mouth, Unpres	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001F	Outfall A (City Water to Tank)	Water	E624 (VOCs)	2	VOA w/ HCl	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001G	Outfall A (City Water to Tank)	Water	E624 (ACRO, ACRY, & 2-CEVE)	2	VOA, Unpres	☐	8/7/2018 12:30	5 days	None	☐	
1808291-001H	Outfall A (City Water to Tank)	Water	E625 (SVOCs)	1	1LA Narrow Mouth, Unpres	☐	8/7/2018 12:30	5 days	None	☐	
1808291-002A	FAC Combined Wastewater	Water	E1664A (SGT- HEM; Non-polar Material)	1	1LA w/ HCl	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002B	FAC Combined Wastewater	Water	E1664A (HEM; Oil & Grease w/o S.G. Clean-Up)	1	1L w/ HCl	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002C	FAC Combined Wastewater	Water	Kelada-01 (Cyanide, Total)	1	250mL aHDPE w/ NaOH	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002D	FAC Combined Wastewater	Water	E420.4 (Phenolics)	1	500mL aG w/ H2SO4	☐	8/7/2018 13:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



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"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mcccampbell.com / E-mail: main@mcccampbell.com

WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: DDSD; Marsh Landing

Comments:

Work Order: 1808291
QC Level: LEVEL 2
Date Logged: 8/7/2018

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De- chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1808291-002D	FAC Combined Wastewater	Water	E350.1 (Ammonia)	1	500mL aG w/ H2SO4	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002E	FAC Combined Wastewater	Water	E608 (OC Pesticides+PCBs w/ Florisil Clean-up)	1	1LA Narrow Mouth, Unpres	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002F	FAC Combined Wastewater	Water	E624 (VOCs)	2	VOA w/ HCl	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002G	FAC Combined Wastewater	Water	E624 (ACRO, ACRY, & 2-CEVE)	2	VOA, Unpres	☐	8/7/2018 13:00	5 days	None	☐	
1808291-002H	FAC Combined Wastewater	Water	E625 (SVOCs)	1	1LA Narrow Mouth, Unpres	☐	8/7/2018 13:00	5 days	None	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

Chain of Custody

Page 1 of 6

Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

1808291

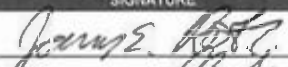
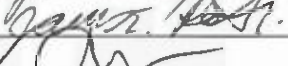
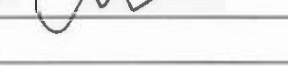
SAMPLES SUBMITTED TO				SEND INVOICE TO				PROJECT				ANALYSIS REQUEST							
Laboratory: McCampbell Analytical, Inc. Attention: Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925 252.9262/ 925 252.9269				Company: NRG Energy, Inc. Attention: Sandra Hemdon Address: 112 Tully St. New Roads, LA 70700 P.O. No.: 4501808516				Plant: Marsh Landing Trib: DDSD Phase: Semi-Annual Manager: David Frandsen				Oil and Grease (Animal/Vegetable) ¹ (EPA Method 1664A)				Oil and Grease (Petroleum/Mineral) ² (EPA Method 1664A)			
SAMPLE INFORMATION								CONTAINER INFORMATION											
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, L)	Preserv.								
ML-18-058	7-Aug-18	1230	DDSD	Semi-Annual	Wastewater	Grab	Outfall A (City Water to Tank)	1	Amber Glass Jar	1	Hydrochloric Acid (pH<2, 4°C)	X							
ML-18-059	7-Aug-18	1230	DDSD	Semi-Annual	Wastewater	Grab	Outfall A (City Water to Tank)	1	Amber Glass Jar	1	Hydrochloric Acid (pH<2, 4°C)		X						
												HOLDING TIME: 28 days		28 days					
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925 324-3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com				LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION				DIRECTIONS FOR LABORATORY STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Animal/Vegetable O/G 2. Petroleum/Mineral O/G *Include sample description with client sample ID.											
PRINTED NAME				SIGNATURE				COMPANY				DATE							
Sampled by: James E Robinson				<i>James E. Robinson</i>				NRG				7-Aug-18							
Relinquished by: James E Robinson				<i>James E. Robinson</i>				NRG				7-Aug-18							
Received by: AGUSTINA VENEGAS				<i>Agustina Venegas</i>				MAI				8/7/18							
Relinquished by:												3:46							
Received by:												1546							
Relinquished by:																			
Received by:																			

Chain of Custody

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Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

1808291

SAMPLES SUBMITTED TO							SEND INVOICE TO			PROJECT			ANALYSIS REQUEST		
Laboratory: Mc Campbell Analytical, Inc. Attention: Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925.252.9262/ 925.252.9269							Company: NRG Energy, Inc. Attention: Sandra Herndon Address: 112 Tully St. New Roads, LA 70780 P.O. No.: 4501808516			Plant: Marsh Landing Title: DDSD Phase: Semi-Annual Manager: David Frandsen			Cyanide ¹ (Kelada-01)	Phenols (EPA Method 420.4)	Ammonia as N (EPA Method 350.1)
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.				
ML-18-060	7-Aug-18	1230	DDSD	Semi-Annual	Wastewater	Grab	Outfall A (City Water to Tank)	1	HDPE Bottle	250	HNO ₃ (pH<2)	X			
ML-18-061	7-Aug-18	1230	DDSD	Semi-Annual	Wastewater	Grab	Outfall A (City Water to Tank)	1	Amber Glass Jar	500	H ₂ SO ₄ (pH<2, 4°C)		X		
ML-18-062	7-Aug-18	1230	DDSD	Semi-Annual	Wastewater	Grab	Outfall A (City Water to Tank)	1	Amber Glass Jar	500	H ₂ SO ₄ (pH<2, 4°C)			X	
HOLDING TIME:												14 days	28 days	28 days	
REPORTING			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY							
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 Phone/Fax: 925.324.3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com www.mccampbellanalytical.com			Cyanide sample pretreated with sodium thiosulfate prior to preservation with sodium hydroxide.					STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Cyanide sample was pretreated with sodium thiosulfate prior to preservation with sodium hydroxide. *Include sample description with client sample ID.							
PRINTED NAME			SIGNATURE			COMPANY		DATE		TIME					
Sampled by: James E Robinson						NRG		7-Aug-18		1230					
Relinquished by: James E Robinson						NRG		7-Aug-18		3:46					
Received by: AUGUSTINA VENEGAS						MAI		8/7/18		1540					
Relinquished by:															
Received by:															
Relinquished by:															
Received by:															

1808291

Chain of Custody

Page 3 of 6

Marsh Landing Generating Station

3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509

Phone: (925) 779-6500 Fax: (925) 779-6509

SAMPLES SUBMITTED TO				SEND INVOICE TO				PROJECT				ANALYSIS REQUEST			
McCampbell Analytical, Inc. Attention: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Address: 925.252.9262/925.252.9269 Phone/Fax:				NRG Energy, Inc. Attention: Sandra Hemdon Address: 11210 51st St, New Roads, LA 70780 P.O. No. 4501808518				Marsh Landing Title: DDS Phase: Semi-Annual Manager: David Frandsen				Pesticides & PCBs (EPA Method 608) Volatile Organics (EPA Method 624) Volatile Organics (EPA Method 624) Semi-Volatile Organics (EPA Method 625)			
SAMPLE INFORMATION								CONTAINER INFORMATION							
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each mL)	Preserv.	Pesticides & PCBs (EPA Method 608)	Volatile Organics (EPA Method 624)	Volatile Organics (EPA Method 624)	Semi-Volatile Organics (EPA Method 625)
ML-18-063	7-Aug-18	1230	DDSD	Semi-Annual	Water	Grab	Outfall A (City Water to Tank)	1	Amber Glass	1000	None (4°C)	X			
ML-18-064	7-Aug-18	1230	DDSD	Semi-Annual	Water	Grab	Outfall A (City Water to Tank)	2	Clear VOA	43	HCL (ZHS, pH < 2, 4°C)		X		
ML-18-065	7-Aug-18	1230	DDSD	Semi-Annual	Water	Grab	Outfall A (City Water to Tank)	2	Clear VOA	43	None (4°C)			X	
ML-18-066	7-Aug-18	1230	DDSD	Semi-Annual	Water	Grab	Outfall A (City Water to Tank)	1	Amber Glass	1000	None (4°C)				X
*For composite samples, the completion time of the 24-hr composite or the time of the final sample aliquot is considered the "sample collection time" for the purpose of determining sample holding time.												HOLDING TIME: 40 days 14 days 3 days 40 days			
REPORTING				LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION				DIRECTIONS FOR LABORATORY							
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925-324-3533/6509 Email: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: james.robinson@nrg.com								Standard TAT (5-DAYS). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. VOCs- Acrolein, acrylonitrile, and 2-cleave *Include sample description with client sample ID.							
PRINTED NAME		SIGNATURE		COMPANY		DATE		TIME							
Sampled by: James E Robinson		<i>James E Robinson</i>		NRG		7-Aug-18		1230							
Requested by: James E Robinson		<i>James E Robinson</i>		NRG		7-Aug-18		346							
Received by: AGUCHINA VENEGAS		<i>AGUCHINA VENEGAS</i>		MAI		7/11/18		1546							
Requested by:															
Received by:															
Requested by:															
Received by:															

Chain of Custody

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Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
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1808291

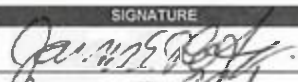
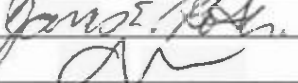
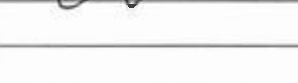
SAMPLES SUBMITTED TO				SEND INVOICE TO				PROJECT				ANALYSIS REQUEST			
Laboratory: McCampbell Analytical, Inc. Attention: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Address: 925.252.9282/ 925.252.9289 Phone/Fax:				Company: NRG Energy, Inc. Attention: Sandra Hemdon Address: 112 Tully St., New Roads, LA 70780 P.O. No.: 4501808518				Plant: Marsh Landing Title: DDSD Phase: Semi-Annual Manager: David Frandsen				Oil and Grease (Petroleum/Mineral) ² (EPA Method 1664A)			
SAMPLE INFORMATION								CONTAINER INFORMATION							
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, L)	Preserv.	Oil and Grease (Animal/Vegetable) ¹ (EPA Method 1664A)	Oil and Grease (Petroleum/Mineral) ² (EPA Method 1664A)		
ML-18-072	7-Aug-18	1300	DDSD	Semi-Annual	Wastewater	Grab	FAC Combined Wastewater	1	Amber Glass Jar	1	Hydrochloric Acid (pH<2, 4°C)	X			
ML-18-073	7-Aug-18	1300	DDSD	Semi-Annual	Wastewater	Grab	FAC Combined Wastewater	1	Amber Glass Jar	1	Hydrochloric Acid (pH<2, 4°C)		X		
HOLDING TIME:												28 days	28 days		
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 Phone/Fax: 925.324-3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: joe.moura@nrg.com E-mail CC:				LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION				DIRECTIONS FOR LABORATORY STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Animal/Vegetable O/G 2. Petroleum/Mineral O/G *Include sample description with client sample ID.							
PRINTED NAME				SIGNATURE				COMPANY				DATE		TIME	
Sampled by: James E Robinson				<i>James E. Robinson</i>				NRG				7-Aug-18		1300	
Relinquished by: James E Robinson				<i>James E. Robinson</i>				NRG				7-Aug-18		346	
Received by: AGUSTINA VENEGAS				<i>OW</i>				MAI				8/7/18		1546	
Relinquished by:															
Received by:															
Relinquished by:															
Received by:															

Chain of Custody

Page 5 of 6

Marsh Landing Generating Station
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SAMPLES SUBMITTED TO							SEND INVOICE TO		PROJECT				ANALYSIS REQUEST		
Laboratory: McCampbell Analytical, Inc. Attention: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Address: 925 252 9282/ 925 252 9289 Phone/Fax:							Company: NRG Energy, Inc. Attention: Sandra Herndon Address: 112 Tully St. New Roads, LA 70760 P.O. No: 4501808518		Plant: Marsh Landing Title: DDSD Phase: Semi-Annual Manager: David Frandsen				Cyanide* (Kelads-01) Phenols (EPA Method 420.4) Ammonia as N (EPA Method 350.1)		
SAMPLE INFORMATION							CONTAINER INFORMATION								
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.				
ML-18-074	7-Aug-18	1300	DDSD	Semi-Annua	Wastewater	Grab	FAC Combined Wastewater	1	HDPE Bottle	250	HNO ₃ (pH<2)	X			
ML-18-075	7-Aug-18	1300	DDSD	Semi-Annua	Wastewater	Grab	FAC Combined Wastewater	1	Amber Glass Jar	500	H ₂ SO ₄ (pH<2, 4°C)		X		
ML-18-076	7-Aug-18	1300	DDSD	Semi-Annua	Wastewater	C-24	FAC Combined Wastewater	1	Amber Glass Jar	500	H ₂ SO ₄ (pH<2, 4°C)			X	
											HOLDING TIME	14 days	28 days	28 days	
REPORTING Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 Phone/Fax: 925 324-3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: joe.moura@nrg.com E-mail CC:			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION Cyanide sample pretreated with sodium thiosulfate prior to preservation with sodium hydroxide.					DIRECTIONS FOR LABORATORY STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Cyanide sample was pretreated with sodium thiosulfate prior to preservation with sodium hydroxide. *Include sample description with client sample ID.							
PRINTED NAME			SIGNATURE		COMPANY		DATE		TIME						
Sampled by: James E Robinson					NRG		7-Aug-18		1300						
Relinquished by: James E Robinson					NRG		7-Aug-18		396						
Received by: AGUSTINA VENEGAS					MAI		8/7/18		1546						
Relinquished by:															
Received by:															
Relinquished by:															
Received by:															

Chain of Custody

Page 6 of 6

Marsh Landing Generating Station

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SAMPLES SUBMITTED TO								SEND INVOICE TO		PROJECT			ANALYSIS REQUEST			
McCampbell Analytical, Inc. Attention: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Address: 925.252.9262/ 925.252.9269 Phone/Fax:								NRG Energy, Inc. Company: Sandra Herndon Address: 112 Tully St New Roads, LA 70780 PO No: 4501808516		Marsh Landing Title: DDSD Phase: Semi-Annual Manager: David Frandsen			Pesticides & PCBs (EPA Method 608) Volatiles Organics (EPA Method 624) Volatiles Organics (EPA Method 624) Semi-Volatiles Organics (EPA Method 625)			
SAMPLE INFORMATION								CONTAINER INFORMATION								
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.	Pesticides & PCBs (EPA Method 608)	Volatiles Organics (EPA Method 624)	Volatiles Organics (EPA Method 624)	Semi-Volatiles Organics (EPA Method 625)	
ML-18-077	7-Aug-18	1300	DDSD	Semi-Annual	Water	Grab	FAC Combined Wastewater	1	Amber Glass	1,000	None (4°C)	X				
ML-18-078	7-Aug-18	1300	DDSD	Semi-Annual	Water	Grab	FAC Combined Wastewater	2	Clear VOA	43	HCL (ZHS, pH<2, 4°C)		X			
ML-18-079	7-Aug-18	1300	DDSD	Semi-Annual	Water	Grab	FAC Combined Wastewater	2	Clear VOA	43	None (4°C)			X		
ML-18-080	7-Aug-18	1300	DDSD	Semi-Annual	Water	Grab	FAC Combined Wastewater	1	Amber Glass	1,000	None (4°C)				X	
*If or composite samples, the completion time of the 24-hr composite or the time of the final sample aliquot is considered the "sample collection time" for the purpose of determining sample holding time.												HOLDING TIME: 40 days 14 days 3 days 40 days				
REPORTING		LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION						DIRECTIONS FOR LABORATORY								
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925.324.3533/6509 E-mail: david.frandsen@nrg.com E-mail CC: james.tobiasen@nrg.com E-mail CC: joe.mouras@nrg.com								Standard TAT (5-DAYS) Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. VOCs- Acrolein, acrylonitrile, and 2-cleane *Include sample description with client sample ID.								
PRINTED NAME		SIGNATURE		COMPANY		TIME										
Sampled by: James E Robinson		James E Robinson		NRG		7-Aug-18 1300										
Relinquished by: James E Robinson		James E Robinson		NRG		7-AUG-18 1346										
Received by: AGUSTINA VENEGAS		[Signature]		MAI		7/31/18 1346										
Relinquished by:																
Received by:																
Relinquished by:																
Received by:																



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **DDSD; Marsh Landing**

Date and Time Received: **8/7/2018 15:46**
Date Logged: **8/7/2018**
Received by: **Agustina Venegas**
Logged by: **Nancy Palacios**

WorkOrder No: **1808291** Matrix: Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☐	No ☒	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☒
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

Sample/Temp Blank temperature	Temp: 2°C	NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☒ No ☐	NA ☐
Sample labels checked for correct preservation?	Yes ☒ No ☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☐ No ☐	NA ☒

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐ No ☐	NA ☒
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐ No ☐	NA ☒

Comments:

RECEIVED BY
DELTA DIABLO

JAN 04 2019

Industrial User Report Checklist And Certification Statement Form

Attn:	Mike Auer		
Environmental Compliance Specialist			
Environmental Specialist	Phone	(925) 756-1929	Fax (925) 756-1961
Industrial User Facility Name	Marsh Landing, LLC		
Duly Authorized Representative Name	Joe Moura		
Duly Authorized Representative Phone	925-779-6685		

This Industrial User Report Checklist and Certification Statement Form shall be submitted with all Self-Monitoring Reports (SMRs), as specified by the Wastewater Discharge Permit issued by Delta Diablo, hereinafter referred to as the District. When submitting Self-Monitoring Reports, check all that are applicable.

Self-Monitoring Reports (SMRs) (Required)

☒ Flow Discharge Summary (Review Discharge Permit.)

☐ Calibration of Effluent Flow Meters; if applicable.

☒ Monitoring Results – all required tests completed, results reviewed, results included
Quality Assurance/Quality Control (QA/QC) and Chain-of-Custody (COC) (Review Discharge Permit):

☒ pH (field-grab) (shall be analyzed within 15 minutes of sample collection).

Results, collection time, analysis time and Technician's Initials shall be reported in the comments section of the respective COC. The pH meter shall be accurate and reproducible to 0.1 pH unit with a range of 0 to 14 and equipped with a temperature-compensation adjustment (Standard methods).

☐ Cyanide samples were tested for oxidizers and preserved with Sodium Hydroxide (NaOH).
This shall be reported in the comments section on the respective COC, if applicable.

☒ Selenium lab analysis by EPA Method 200.8 by Reaction Mode: if applicable.

☐ Total Phenolics lab analysis by EPA Method 420.4: if applicable.

☒ All sample analysis for regulatory compliance reporting shall be completed by an ELAP certified Laboratory.

☒ Certification Statement included (see attached)

☐ Other requested data _____



Industrial User Report Checklist And Certification Statement Form

Violations (if applicable)

- ☐ All wastewater discharge violations are reported during this period:
- ☐ The District was contacted within 24- hours of becoming aware of the violation.
Date: _____
- ☐ A follow-up resample was completed. Date: _____
- ☐ Corrective actions implemented to resolve violation (Please explain in writing)
- ☐ Significant Non-Compliance (SNC) Status Review

Please circle the review period *: **January – June** and **July -December**.

The SIU shall conduct a SNC review for the previous completed period * prior to the Self-monitoring Report (SMR) due date. Examples: A October SMR due date, the SNC review period is **January – June** or an April SMR due date, the SNC review period is **July – December**.

The SNC definition can be found in 40 CFR 403.8.

- a) Chronic SNC= >66% of a regulated parameter in violation during six-month Period *.
- b) Technical Review Criteria (TRC) SNC = >33% of a regulated pollutant during a six-month period* equals or exceeds the product of the daily maximum limit or the average limit multiplied by the applicable TRC factor (1.4 for BOD, TSS and Oil/Grease and 1.2 for all other regulated pollutants except pH).

☐ Is the SIU in SNC (as defined in a and/or b) for this period*? Yes ☐, No ☐; If yes, for what period? _____. Please report the SNC status to the District in the SMR and include corrective actions to resolve the SNC classification.

☐ Other violations – i.e., reporting, spills to sewer, or prohibited discharges

All violations will be discussed in the cover letter of the Self-Monitoring Report.

☐ Significant Changes

Anticipated changes that may alter the nature, quality, or volume of the wastewater discharged. Planned changes shall be submitted at least 90 days prior to implementation, and shall include a detailed description of this change.



Industrial User Report Checklist And Certification Statement Form

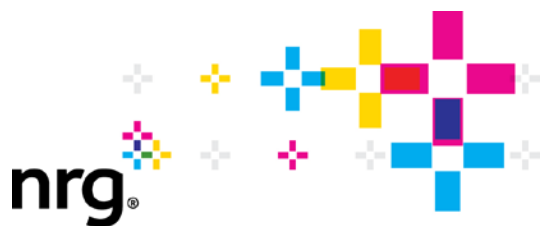
Certification Statement

Industrial User Facility Name	NRG Marsh Landing, LLC
Industrial User Facility Address	3201-C Wilbur Avenue, Antioch, CA 94509
Duly Authorized Representative Phone	925-779-6685
Indicate Period Covered by This Report	October 1-December 31, 2018

Certification Statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations (40 CFR 403.6).

Duly Authorized Representative Signature	
Duly Authorized Representative Print	Joe Moura
Date	1/4/2019



NRG Marsh Landing, LLC
Marsh Landing Generating Station
3201-C Wilbur Avenue (shipping)
PO Box 1687 (mailing)
Antioch, CA 94509

January 4, 2019

Mr. Mike Auer
Delta Diablo
2500 Pittsburg-Antioch Highway
Antioch, CA 94509-1373

Subject: 2018 Fourth Quarterly (October 1-December 31) Self-Monitoring Report
NRG Marsh Landing, LLC, Marsh Landing Generating Station,
Industrial Wastewater Discharge Permit 0311963-S

This letter documents the transmittal of the 2018 Fourth Quarterly Self-Monitoring Report (SMR).

Compliance Statement (choose one):

- ☒ There were no violations of waste discharge requirements during the reporting period.
- ☐ The following violation(s) of waste discharge requirements occurred during the reporting period, as described below:

Discussion:

This report is the SMR filed for the station and covers the period from October 1 through December 31, 2018. This report includes monthly flow data and quarterly analytical data required to be collected in 2018. Data are summarized in the attached tables.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions, please contact Mr. David Frandsen, Environmental Specialist at david.frandsen@nrg.com or call 925.779.6695.

Sincerely,



Joe Moura

Plant Manager
NRG Marsh Landing, LLC
Marsh Landing Generating Station

Attachments

Table 1:	Quarterly Results for Combined Wastewater (FAC Combined)
Table 2:	October 2018 Monthly Flow Data
Table 3:	November 2018 Monthly Flow Data
Table 4:	December 2018 Monthly Flow Data

Attachment 1:	pH COC
Attachment 2:	Analytical Reports

Table 1
Quarterly Results for Combined Wastewater (FAC Combined)

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509

Sample Station Location	FAC Combined
Sample Station Description	Local Limits FAC Combined Wastewater
Reporting Period	October - December 2018
Report Type	Quarterly

Constituent	Sample Date	Permit Limit	Result	Units
Field pH	11/1/2018	6-10	7.5	S.U.
BOD	11/1/2018	-	10	mg/L
COD	11/1/2018	-	27	mg/L
Arsenic	11/1/2018	0.15	0.00062	mg/L
Cadmium	11/1/2018	0.1	ND	mg/L
Chromium	11/1/2018	0.5	ND	mg/L
Copper	11/1/2018	0.5	0.0074	mg/L
Iron	11/1/2018	-	0.120	mg/L
Lead	11/1/2018	0.5	ND	mg/L
Mercury	11/1/2018	0.003	ND	mg/L
Molybdenum	11/1/2018	-	0.0012	mg/L
Nickel	11/1/2018	0.5	0.0020	mg/L
Selenium	11/1/2018	0.25	ND	mg/L
Silver	11/1/2018	0.2	ND	mg/L
Zinc	11/1/2018	1.0	0.024	mg/L
TDS	11/1/2018	-	340	mg/L
TSS	11/1/2018	-	7.10	mg/L

J = The reported concentration is an estimated value.

mg/L = Milligrams per liter

ND = Not detected at or above the laboratory Method Detection Limit or Reporting Limit.

S.U. = Standard units

Table 2
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	October, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	10/1/2018 - 10/31/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	0	0.00	
2	8859	21.66	
3	6236	24.84	2
4	5970	20.11	
5	4697	20.23	
6	0	0.00	
7	6575	20.18	
8	1344	20.08	
9	6242	20.13	
10	403	16.40	
11	0	0.00	
12	0	0.00	
13	0	0.00	
14	0	0.00	
15	0	0.00	
16	434	14.24	
17	4606	21.91	
18	1567	20.07	
19	0	0.00	
20	0	0.00	
21	4841	19.80	
22	6928	19.83	
23	5268	19.59	
24	0	0.00	
25	0	0.00	
26	432	15.82	
27	0	0.00	
28	0	0.00	
29	0	0.00	
30	0	0.00	
31	12831	19.86	

Total Monthly Flow (gal)	77,232	Did flow exceed limits?	NO
Daily Max Flow (gpd)	12,831	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	2,491		

Table 3
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	November, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	11/1/2018 - 11/30/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	28080	19.59	
2	917	19.56	
3	5455	19.67	
4	388	15.86	
5	0	0.00	
6	4314	19.73	
7	4151	19.66	
8	3004	19.56	
9	13190	19.89	
10	7222	19.65	
11	0	0.00	
12	10590	19.69	
13	2028	19.56	
14	4536	19.61	
15	1722	19.56	
16	4123	20.95	
17	0	0.00	
18	0	0.00	
19	5688	19.60	
20	2596	19.57	
21	6163	20.31	
22	6573	19.56	
23	9676	19.60	
24	7957	19.73	
25	0	0.00	
26	7937	19.59	
27	0	0.00	
28	0	0.00	
29	10765	19.60	
30	7254	19.63	

Total Monthly Flow (gal)	154,327	Did flow exceed limits?	NO
Daily Max Flow (gpd)	28,080	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	5,144		

Table 4
Monthly Flow Data

Industrial User Name	NRG Marsh Landing, LLC
Location	Marsh Landing Generating Station
Permit Number	0311963-S
SIC	4911
Address	3201-C Wilbur Avenue
	Antioch CA 94509
Sample Station Location	Outfall #4
Sample Station Description	Flow Monitoring Structure
Reporting Period	December, 2018
Report Type	Quarterly
Constituent	Flow
Sample Type	Continuous, measured by flow meter
Sample Date	12/1/2018 - 12/31/2018
Permit Limits (s.u.)	NTE 30,240 gpd. NTE 21 gpm +10% (23.1 gpm) for 15 consecutive minutes or 30 minutes in a 24-hour period

Day	Total Flow (gpd)	Instantaneous Max (gpm)	Minutes per Day of Flow exceeding 23.1 gpm
1	6435	19.62	
2	0	0.00	
3	0	0.00	
4	17788	19.67	
5	6255	19.62	
6	6799	19.58	
7	0	0.00	
8	0	0.00	
9	0	0.00	
10	0	0.00	
11	0	0.00	
12	4797	21.47	
13	8232	19.59	
14	8585	19.61	
15	254	19.54	
16	0	0.00	
17	9611	20.49	
18	0	0.00	
19	0	0.00	
20	0	0.00	
21	6434	19.60	
22	7911	19.80	
23	0	0.00	
24	0	0.00	
25	0	0.00	
26	5550	21.68	
27	9985	19.59	
28	6203	21.41	
29	0	0.00	
30	418	16.29	
31	4205	19.94	

Total Monthly Flow (gal)	109,460	Did flow exceed limits?	NO
Daily Max Flow (gpd)	17,788	Flow above daily max (30,240 gpd)?	NO
Average Monthly Flow (gpd)	3,531		

Marsh Landing Generating Station

Reported to:
Environmental Engineer

NPDES Monthly Analytical Report

Sample Point	Sample Number	Sample Date (m/d/y)	Sample Collection Time	Date Analyzed (m/d/y)	pH Analysis Time	Sample Medium	Sample Type (Grab, 24-Hour Composite)	pH
Method:								
Unit:								
Reporting Limit:								
Method Detection Limit:								
FAC Combined Waste Water	ML-18-100	11/1/18	1400	11/1/18	1400	Wastewater	Grab	7.5

SM = Standard Method; ppm = parts per million; mg/L = milligrams per liter; N/A = not applicable

Environmental Engineer

David Frandsen

Signature:

David Frandsen

Date:

Nov. 9, 2018

Sampling Technologist: James E Robinson

Signature:

James E. Robinson

Date:

11/1/18

Reviewed By:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1811067

Report Created for: NRG Energy, LLC

3201 Wilbur Avenue
Antioch, CA 94509

Project Contact: David Frandsen

Project P.O.: 4501808523

Project: DDSD; Quarterly

Project Received: 11/01/2018

Analytical Report reviewed & approved for release on 11/07/2018 by:

Susan Thompson
Project Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Quarterly
WorkOrder: 1811067

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDS D	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Glossary of Terms & Qualifier Definitions

Client: NRG Energy, LLC
Project: DDSD; Quarterly
WorkOrder: 1811067

Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
j1 See attached narrative



Case Narrative

Client: NRG Energy, LLC
Project: DDSD; Quarterly

Work Order: 1811067
November 07, 2018

Our standard ICP-MS analytical procedure is to analyze selenium using the Reaction mode.



Analytical Report

Client: NRG Energy, LLC
Date Received: 11/1/18 16:56
Date Prepared: 11/1/18
Project: DDSD; Quarterly

WorkOrder: 1811067
Extraction Method: SM5210B
Analytical Method: SM5210 B-2001
Unit: mg/L

Biochemical Oxygen Demand (BOD)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1811067-001C	Water	11/01/2018 14:00	WetChem	167714

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
BOD	10	4.0	4.0	1	11/06/2018 15:33

Analyst(s): AL



Analytical Report

Client: NRG Energy, LLC
Date Received: 11/1/18 16:56
Date Prepared: 11/5/18
Project: DDSD; Quarterly

WorkOrder: 1811067
Extraction Method: SM5220 D-1997
Analytical Method: SM5220 D-1997
Unit: mg/L

Chemical Oxygen Demand (COD) as mg O₂ /L

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1811067-001B	Water	11/01/2018 14:00	SPECTROPHOTOMETER	167802

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
COD	27	7.2	10	1	11/05/2018 12:29

Analyst(s): RB



Analytical Report

Client: NRG Energy, LLC
Date Received: 11/1/18 16:56
Date Prepared: 11/1/18
Project: DDSD; Quarterly

WorkOrder: 1811067
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1811067-001A	Water	11/01/2018 14:00	ICP-MS3 206SMPL.D	167677

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Arsenic	0.62		0.13	0.50	1	11/03/2018 05:25
Cadmium	ND		0.066	0.50	1	11/03/2018 05:25
Chromium	ND		0.77	1.0	1	11/03/2018 05:25
Copper	7.4		0.55	1.0	1	11/03/2018 05:25
Iron	120		20	50	1	11/03/2018 05:25
Lead	ND		0.19	0.50	1	11/03/2018 05:25
Mercury	ND		0.021	0.050	1	11/03/2018 05:25
Molybdenum	1.2		0.033	0.50	1	11/03/2018 05:25
Nickel	2.0		0.34	0.50	1	11/03/2018 05:25
Selenium	ND		0.20	0.50	1	11/03/2018 05:25
Silver	ND		0.043	0.50	1	11/03/2018 05:25
Zinc	24	J	18	25	1	11/03/2018 05:25

Surrogates	REC (%)	Limits	
Terbium	113	70-130	11/03/2018 05:25

Analyst(s): JC

Analytical Comments: j1



Analytical Report

Client: NRG Energy, LLC
Date Received: 11/1/18 16:56
Date Prepared: 11/1/18
Project: DDSD; Quarterly

WorkOrder: 1811067
Extraction Method: SM2540 C-1997
Analytical Method: SM2540 C-1997
Unit: mg/L

Total Dissolved Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1811067-001D	Water	11/01/2018 14:00	WetChem	167710

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Dissolved Solids	340	10.0	10.0	1	11/02/2018 13:15

Analyst(s): AL



Analytical Report

Client: NRG Energy, LLC
Date Received: 11/1/18 16:56
Date Prepared: 11/2/18
Project: DDSD; Quarterly

WorkOrder: 1811067
Extraction Method: SM2540 D-1997
Analytical Method: SM2540 D-1997
Unit: mg/L

Total Suspended Solids

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
FAC Combined Wastewater	1811067-001E	Water	11/01/2018 14:00	WetChem	167746

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Suspended Solids	7.10	1.00	1.00	1	11/02/2018 14:40

Analyst(s): AL



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 11/1/18
Date Analyzed: 11/6/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Quarterly

WorkOrder: 1811067
BatchID: 167714
Extraction Method: SM5210B
Analytical Method: SM5210 B-2001
Unit: mg/L
Sample ID: MB/LCS/LCSD-167714

QC Summary Report for BOD

Analyte	MB Result	MDL	RL			
BOD	ND	4.0	4.0	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
BOD	180	180	198	92	92	80-120	0	16



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 11/5/18
Date Analyzed: 11/5/18
Instrument: SPECTROPHOTOMETER
Matrix: Water
Project: DDSD; Quarterly

WorkOrder: 1811067
BatchID: 167802
Extraction Method: SM5220 D-1997
Analytical Method: SM5220 D-1997
Unit: mg/L
Sample ID: MB/LCS/LCSD-167802

QC Summary Report for COD

Analyte	MB Result	MDL	RL			
COD	ND	7.2	10	-	-	-

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
COD	92	92	100	92	92	90-110	0	20



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 11/1/18
Date Analyzed: 11/2/18
Instrument: ICP-MS2
Matrix: Water
Project: DDSD; Quarterly

WorkOrder: 1811067
BatchID: 167677
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS/LCSD-167677

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Arsenic	ND	0.13	0.50	-	-	-
Cadmium	ND	0.066	0.50	-	-	-
Chromium	ND	0.77	1.0	-	-	-
Copper	ND	0.55	1.0	-	-	-
Iron	ND	20	50	-	-	-
Lead	ND	0.19	0.50	-	-	-
Mercury	ND	0.021	0.050	-	-	-
Molybdenum	0.059,J	0.033	0.50	-	-	-
Nickel	ND	0.34	0.50	-	-	-
Selenium	ND	0.20	0.50	-	-	-
Silver	ND	0.043	0.50	-	-	-
Zinc	ND	18	25	-	-	-

Surrogate Recovery

Terbium	500	500	100	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Arsenic	52	52	50	104	105	85-115	0.499	20
Cadmium	52	52	50	104	104	85-115	0	20
Chromium	52	53	50	104	105	85-115	1.03	20
Copper	53	54	50	106	107	85-115	1.58	20
Iron	5200	5300	5000	103	105	85-115	1.61	20
Lead	51	51	50	101	102	85-115	0.826	20
Mercury	1.2	1.2	1.25	97	98	85-115	0.901	20
Molybdenum	49	50	50	99	100	85-115	1.29	20
Nickel	53	54	50	106	108	85-115	1.27	20
Selenium	52	52	50	104	103	85-115	0.328	20
Silver	52	52	50	103	104	85-115	0.521	20
Zinc	530	540	500	106	107	85-115	0.954	20

Surrogate Recovery

Terbium	510	520	500	102	104	70-130	1.90	20
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Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 11/1/18
Date Analyzed: 11/2/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Quarterly

WorkOrder: 1811067
BatchID: 167710
Extraction Method: SM2540 C-1997
Analytical Method: SM2540 C-1997
Unit: mg/L
Sample ID: MB-167710

QC Summary Report for Total Dissolved Solids

Analyte	MB Result	MDL	RL			
Total Dissolved Solids	ND	10.0	10.0	-	-	-



Quality Control Report

Client: NRG Energy, LLC
Date Prepared: 11/2/18
Date Analyzed: 11/2/18
Instrument: WetChem
Matrix: Water
Project: DDSD; Quarterly

WorkOrder: 1811067
BatchID: 167746
Extraction Method: SM2540 D-1997
Analytical Method: SM2540 D-1997
Unit: mg/L
Sample ID: MB-167746

QC Summary Report for Total Suspended Solids

Analyte	MB Result	MDL	RL			
Total Suspended Solids	ND	1.00	1.00	-	-	-



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 1811067

ClientCode: GOA

☐ WaterTrax☐ WriteOn☐ EDF☐ Excel☒ EQulS☒ Email☐ HardCopy☐ ThirdParty☒ J-flag☒ Detection Summary☒ Dry-Weight**Report to:**

David Frandsen
NRG Energy, LLC
3201 Wilbur Avenue
Antioch, CA 94509
(925) 427-3479 FAX: (925) 779-6679

Email: David.Frandsen@nrg.com
cc/3rd Party: Kathy.crist@nrg.com; james.robinson@nr
PO: 4501808523
Project: DDSD; Quarterly

Bill to:

Accounts Payable
NRG
112 Telly Street
New Roads, LA 70760
invoices@nrg.com

Requested TATs: 5 days;
7 days;

Date Received: 11/01/2018**Date Logged:** 11/01/2018

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1811067-001	FAC Combined Wastewater	Water	11/1/2018 14:00	☐	C	B	A	D	E							

Test Legend:

1	BOD_W
5	TSS_W
9	

2	COD_W
6	
10	

3	METALSMS_TTLC_W
7	
11	

4	TDS_W
8	
12	

Prepared by: Agustina Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: NRG ENERGY, LLC
Client Contact: David Frandsen
Contact's Email: David.Frandsen@nrg.com

Project: DDSD; Quarterly

Work Order: 1811067
QC Level: LEVEL 2
Date Logged: 11/1/2018

Comments

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☒ Email ☐ HardCopy ☐ ThirdParty ☒ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1811067-001A	FAC Combined Wastewater	Water	E200.8 (Metals) <Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Zinc>	1	250mL HDPE w/ HNO3	☐	11/1/2018 14:00	5 days	Present	☐	
1811067-001B	FAC Combined Wastewater	Water	SM5220D (COD)	2	aVOA w/ H2SO4	☐	11/1/2018 14:00	5 days	Present	☐	
1811067-001C	FAC Combined Wastewater	Water	SM5210B (BOD)	1	1L HDPE, unprsv.	☐	11/1/2018 14:00	7 days	Present	☐	
1811067-001D	FAC Combined Wastewater	Water	SM2540C (TDS)	1	500mL HDPE, unprsv.	☐	11/1/2018 14:00	5 days	Present	☐	
1811067-001E	FAC Combined Wastewater	Water	SM2540D (TSS)	1	1L HDPE, unprsv.	☐	11/1/2018 14:00	5 days	Present	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

Chain of Custody

Page 1 of 2

Marsh Landing Generating Station

3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509

Phone: (925) 779-6500 Fax: (925) 779-6509

1811047

SAMPLES SUBMITTED TO						SEND INVOICE TO		PROJECT				ANALYSIS REQUEST			
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No. 1644 Address: 1534 Willow Pass Road, Pittsburg, CA 94565-1701 Phone/Fax: 925 252 9282/ 925 252 0269						Company: NRG Energy, Inc. Attention: Sandra Herndon Address: 112 Tully St. New Roads, LA 70780 P.O. No.: 4501808523		Plant: Marsh Landing Title: DDSD Phase: Quarterly Manager: David Frandsen				Total Metals¹ (EPA Method 200.8)			
SAMPLE INFORMATION								CONTAINER INFORMATION							
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each, mL)	Preserv.				
ML-18-094	1-Nov-18	1400	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	250	HNO3 (pH<2)	X			
HOLDING TIME: 28 days															
REPORTING			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY							
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687 Antioch, CA 94509 925 324-3533/6509 Phone/Fax: E-mail: david.frandsen@nrg.com E-mail CC: james.robinson@nrg.com E-mail CC: joe.moura@nrg.com E-mail CC: hirov.kishino@nrg.com E-mail CC: luffy.gonzalez@nrg.com								STANDARD TAT (5-day). Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (ONO) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. 1. Arsenic, Cadmium, Chromium, Copper, Iron, Lead, Mercury, Nickel, Molybdenum, Selenium (reaction mode), Silver, Zinc *include sample description with client sample ID.							
PRINTED NAME			SIGNATURE			COMPANY		DATE		TIME					
Sampled by: James Robinson			<i>James Robinson</i>			NRG		1-Nov-18		1400					
Relinquished by: James Robinson			<i>James Robinson</i>			NRG		1-Nov-18		956					
Received by: <i>Lilly Ortiz</i>			<i>Lilly Ortiz</i>			MAI		11/1/18		1656					
Relinquished by:										3.2					
Received by:															
Relinquished by:															
Received by:															

Chain of Custody

Page 2 of 2

Marsh Landing Generating Station
3201 Wilbur Avenue, P.O. Box 1687, Antioch, CA 94509
Phone: (925) 779-6500 Fax: (925) 779-6509

SAMPLES SUBMITTED TO						SEND INVOICE TO		PROJECT				ANALYSIS REQUEST			
Laboratory: McCampbell Analytical, Inc. ELAP Cert. No: 1844 Address: 1534 Willow Pass Road, Pinole, CA 94565-1701 Phone/Fax: 925 252 9262/ 925 252 9268						Company: NRG Energy, Inc. Attention: Sandra Herndon Address: 1127 Wilby St. New Roads, LA 70780 P.O. No.: 4501808523		Plant: Marsh Landing Type: DDSD Phase: Quarterly Manager: David Frandsen				CDD (SM 5220D) BDD (SM 5210B) TDS (SM 2540B) TSS (SM 2540C)			
SAMPLE INFORMATION							CONTAINER INFORMATION								
Sample Number	Sample Date	Sample Collection Time	Regulatory Driver	Regulatory Frequency	Sample Medium	Sample Type	Sample Description	Number	Type	Volume (each mL)	Preserv.	CDD (SM 5220D)	BDD (SM 5210B)	TDS (SM 2540B)	TSS (SM 2540C)
ML-10-090	1-Nov-18	1400	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	2	Amber VOAs	43	H ₂ SO ₄ (pH<2.4°C)	X			
ML-10-091	1-Nov-18	1400	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	1,000	None (ZHS, 4°C)		X		
ML-10-092	1-Nov-18	1400	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	HDPE Bottle	500	None (4°C)			X	
ML-10-093	1-Nov-18	1400	DDSD	Quarterly	Wastewater	C-24	FAC Combined Wastewater	1	Poly	1,000	None				X
												HOLDING TIME: 28 days 48 hours 7 days 7 days			
REPORTING			LABORATORY NOTES RE: SAMPLE RECEIPT/CONDITION					DIRECTIONS FOR LABORATORY							
Original to: David Frandsen Title: Environmental Specialist/Engineer Address: P.O. Box 1687, Antioch, CA 94509 Phone/Fax: 925 324-3533/6509 E-mail: david.frandsen@ma.com E-mail CC: james.robinson@ma.com E-mail CC: lily.outr@ma.com E-mail CC: lily.outr@ma.com E-mail CC: lily.outr@ma.com								STANDARD TAT (5-day): Establish calibration standards so Minimum Level (ML) value is the lowest calibration standard, the lowest quantifiable concentration or Reporting Limit (RL). Report "Detected, but Not Quantified" (DNQ) with estimated J-flagged concentrations below the RL and include method detection limits (MDLs) in report. *Include sample description with client sample ID.							
PRINTED NAME			SIGNATURE					COMPANY		DATE		TIME			
Sampled by			James Robinson					NRG		1-Nov-18		1400			
Relinquished by			James Robinson					NRG		1-Nov-18		456			
Received by			Lily Outar					MAI		11/11/18		1456			
Relinquished by												3.2mct			
Received by															
Relinquished by															
Received by															



Sample Receipt Checklist

Client Name: **NRG Energy, LLC**
Project: **DDSD; Quarterly**

Date and Time Received: **11/1/2018 16:56**

Date Logged: **11/1/2018**

Received by: **Lilly Ortiz**

Logged by: **Agustina Venegas**

WorkOrder No: **1811067** Matrix: Water
Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Sample IDs noted by Client on COC?	Yes ☒	No ☐	
Date and Time of collection noted by Client on COC?	Yes ☒	No ☐	
Sampler's name noted on COC?	Yes ☒	No ☐	
COC agrees with Quote?	Yes ☐	No ☐	NA ☒

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	NA ☒
Shipping container/cooler in good condition?	Yes ☒	No ☐	
Samples in proper containers/bottles?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes ☒	No ☐	NA ☐
Samples Received on Ice?	Yes ☒	No ☐	

(Ice Type: WET ICE)

Sample/Temp Blank temperature	Temp: 4.2°C	NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes ☒	No ☐
Sample labels checked for correct preservation?	Yes ☒	No ☐
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes ☒	No ☐

UCMR Samples:

pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes ☐	No ☐	NA ☒
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes ☐	No ☐	NA ☒

Comments:

Marsh Landing Generating Station

Annual Compliance Report

3.5 SOIL & WATER-6

- Water flow meters have been installed in three locations.
 - o Potable water flow FT400001
 - o Potable water flow to the Raw Water Tank FT360004
 - o Discharge flow of Waste Water/Sanitary Drains to DDSO FT950002
- Calibration activities were completed in January. See attached calibration sheets.

The range of annual water usage is 8.2 acre feet in 2014 to 11.2 acre feet in 2017.

The average annual water usage is 9.1 acre feet. See attached Summary spreadsheet.

Payments to the City of Antioch are as follows:

- \$8,500 for the year 2013 paid in May 2014.
- \$8,200 for the year 2014 paid in May 2015.
- \$8,200 for the year 2015 paid in May 2016.
- \$9,000 for the year 2016 paid in May 2017.
- \$11,200 for the year 2017 paid in May 2018.
- \$9,700 for the year 2018 to be paid in May 2019.

Instrument Calibration Report

Attn:

Magnetic Flow Meter

 David Frandsen
 3201-C Wilbur Ave
 Antioch, Ca 94509

 Tag/Instrument ID **FT-360004**
 Description **Mag-Meter**
 Manufacturer **Rosemount**

 Calibrated Range **0 TO 500 Gal/M**
 Serial Number **378997**
 Model Number **8732E**

 Plant / Unit **NRG**
 System
 Location **Out behind Amonia tank**

 Calibration Type **SCHEDULED**
 Calibrated **12-Jan-18**
 Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

 Required Accuracy⁽¹⁾: 0.50%

<u>In Val</u>	<u>In Units</u>	<u>Out Val</u>	<u>Out Units</u>	<u>As Found</u>	<u>Error %</u>	<u>As Left</u>	<u>Error %</u>
0.00	Gal/M	4.00	mA	4.01	0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.61	0.06%	5.60	0.00%
10.00	Gal/M	9.33	mA	9.34	0.06%	9.33	0.00%
30.00	Gal/M	20.00	mA	20.01	0.06%	20.00	0.00%
10.00	Gal/M	9.33	mA	9.34	0.06%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.61	0.06%	5.60	0.00%
0.00	Gal/M	4.00	mA	4.01	0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

 Meter Tube Cal #: 0838305208252005
 Units of Measure: Gal/M
 Span: 0 To 500
 Coil Pulse Mode: 37 Hz

Calibration Settings

 1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>NIST Cert. Number</u>
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

 QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

 Calibration Result: **PASS**

 Calibrated by: *James Hiracheta*

Checkout By:

Instrument Calibration Report

Attn:

Magnetic Flow Meter

 David Frandsen
 3201-C Wilbur Ave
 Antioch, Ca 94509

 Tag/Instrument ID **Ft-400001**
 Description **Mag-Meter**
 Manufacturer **Rosemount**

 Calibrated Range **0 TO 500 Gal/M**
 Serial Number **0338199**
 Model Number **8732E**

 Plant / Unit **NRG**
 System
 Location **Out behind Amonia tank**

 Calibration Type **SCHEDULED**
 Calibrated **12-Jan-18**
 Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

 Required Accuracy⁽¹⁾: 0.50%

<u>In Val</u>	<u>In Units</u>	<u>Out Val</u>	<u>Out Units</u>	<u>As Found</u>	<u>Error %</u>	<u>As Left</u>	<u>Error %</u>
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.60	0.00%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
30.00	Gal/M	20.00	mA	19.94	-0.37%	20.00	0.00%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.60	0.00%
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

 Meter Tube Cal #: 0984705909605005
 Units of Measure: Gal/M
 Span: 0 To 500
 Coil Pulse Mode: 37 Hz

Calibration Settings

 1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>NIST Cert. Number</u>
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

 QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

 Calibration Result: **PASS**

 Calibrated by: *James Hiracheta*

Checkout By:

Instrument Calibration Report

Attn:

Magnetic Flow Meter

 David Frandsen
 3201-C Wilbur Ave
 Antioch, Ca 94509

 Tag/Instrument ID **Ft-950002**
 Description **Mag-Meter**
 Manufacturer **Rosemount**

 Calibrated Range **0 TO 80 Gal/M**
 Serial Number **0337659**
 Model Number **8732E**

 Plant / Unit **NRG**
 System
 Location **Next Admin building**

 Calibration Type **SCHEDULED**
 Calibrated **12-Jan-18**
 Scheduled **12-Jan-19**

MagMeter Calibration

Stated Accuracy: % of Analog Output

 Required Accuracy⁽¹⁾: 0.50%

<u>In Val</u>	<u>In Units</u>	<u>Out Val</u>	<u>Out Units</u>	<u>As Found</u>	<u>Error %</u>	<u>As Left</u>	<u>Error %</u>
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.59	-0.06%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
30.00	Gal/M	20.00	mA	19.94	-0.37%	19.99	-0.06%
10.00	Gal/M	9.33	mA	9.28	-0.31%	9.33	0.00%
3.00	Gal/M	5.60	mA	5.55	-0.31%	5.59	-0.06%
0.00	Gal/M	4.00	mA	3.99	-0.06%	4.00	0.00%

Calibration Parameter Changes

Customer Settings

 Meter Tube Cal #: 0926105209236005
 Units of Measure: Gal/M
 Span: 0 To 80
 Coil Pulse Mode: 37 Hz

Calibration Settings

 1000015010000000
Ft/S
0 To 30.0
5 Hz

☒ All Settings returned to customer's Configuration

Test Instruments Used During Calibration

<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number</u>	<u>NIST Cert. Number</u>
Hart Communicator	Emerson	475	11104762	N/A
Process Meter	Fluke	789	86650051	19-DB8J9-40-1
Flow Simulator	Rosemount	8714D	14611770	14611770 (Trace#)

Notes about this calibration

1) No notes, calibration passed without issue.

 QC Checklist: **N/A** Isolation valves
N/A Filled legs
X All wires relanded (If removed)
X Verify data (model, tag, serial, mfg)

 Calibration Result: **PASS**

 Calibrated by: *James Hiracheta*

Checkout By:

Marsh Landing Generating Station
Annual City Water Usage

		Min	Max	Avg
Year	Acre Feet	8.2	11.2	9.1
2013 - partial	8.5			
2014	8.2			
2015	8.2			
2016	9.0			
2017	11.2			
2018	9.7			

Marsh Landing Generating Station

Annual Compliance Report

3.6 VIS-1

Current Condition:

The surface treatments of all structures and buildings are in very good condition, as the plant went commercial May 1, 2013.

Maintenance Activities During the Year:

- Painting of some additional vertical surface of concrete pads to make them more obvious to prevent Slips, Trips, and Falls.
- Painted the Switchyard Building, and the following Cargo Containers: Hazardous Materials Storage, Special Tools, and Miscellaneous Storage.

Anticipated Maintenance for Next Year:

- Some minor painting activities are anticipated for 2019 in the areas of Safety, Slips Trips and Falls, and to prevent rust formation on equipment.
- Finish painting on the Fire Pump System external above ground piping, diesel tank fill and vent pipes, and the diesel engine exhaust pipe. (done in March)

Marsh Landing Generating Station

Annual Compliance Report

3.7 VIS-2

Landscaping Maintenance is performed by a contractor on an as needed basis.

In 2018 we replaced 0 trees. The existing trees were re-supported by the installation of new landscaping tree stacks to support tree growth.

Performed weed abatement activities.

Marsh Landing Generating Station

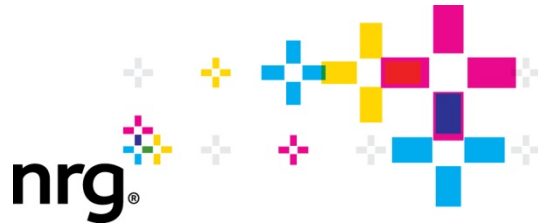
Annual Compliance Report

3.8 WASTE-7

The Operation Waste Management Plan has been revised and is included. See pages 5-6 for a description of changes.

The actual volume of wastes generated during the report period was 65 tons. See attached CCHS Hazardous Waste Generator Reporting Form.

Marsh Landing LLC



Operation Waste Management Plan

**Marsh Landing Generating Station
Antioch, California**

**Revision 5
January 2019**



SITE MANAGER REVIEW

The Operation Waste Management Plan for Marsh Landing Generating Station has been reviewed by the Plant Manager.

Signature

A handwritten signature in blue ink, appearing to read "Joseph Moura", written over a horizontal line.

Name

Joseph Moura

Title

Plant Manager

Date

1/23/19

ENVIRONMENTAL PERSONNEL REVIEW

The Operation Waste Management Plan for Marsh Landing Generating Station has been reviewed by the Facility Environmental Specialist/Engineer.

Signature

A handwritten signature in blue ink, appearing to read "David Frandsen", written over a horizontal line.

Name

David Frandsen

Title

Environmental Specialist/Engineer

Date

Jan. 23, 2019



REGIONAL ENVIRONMENTAL MANAGER/DIRECTOR REVIEW

The Operation Waste Management Plan for Marsh Landing Generating Station has been reviewed by the Regional Environmental Manager/Director.

Signature

A handwritten signature in black ink, appearing to read "Scott Seipel", written over a horizontal line.

Name

Scott Seipel

Title

Environmental Manager

Date

1/23/19

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Figure 2 Hazardous Waste Storage and Accumulation Areas

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Table 3 Waste Containment and Storage Summary

Table 4 Waste Transportation and Disposal Vendors

PLAN REVIEW AND CHANGE LOG

Revision No.	Revision Date	Reviewed / Revised By	Description of Change	Revised Pages
1	March 2016	D. Frandsen	Reviewed and revised the Plan as follows: - Revised cover page and added a Review and Change Log. - Revised text to indicate plant being in the operational phase including text revisions to the present tense in lieu of future tense.	Throughout
2	November 2016	D. Frandsen	Reviewed and revised the Plan as follows: - Updated excerpts from the NRG Energy, Inc. Environmental Policy and Procedures Manual, links in Section 3.2, and on-site wastewater treatment description in Section 4.1. - Updated Tables 1 and 3 with typical wastes generated and made consistent. - Added Regional Environmental Manager/Director review, site vicinity map, and List of Tables.	Throughout
3	January 2017	D. Frandsen	Reviewed and revised the Plan as follows: - Combined Section 2.1 and 2.2, describing the facility and location. - Updated on-site wastewater treatment description in Section 4.1. - Revised Section 6.5 to reference the Compliance Conditions for Facility Closure Plan for closure requirements. - Minor formatting.	Throughout
4	January 2018	D. Frandsen	Reviewed and revised the Plan as follows: - Updated Plant Management. - Remove reference to the Industrial General Permit for storm water discharges. - Added waste ethylene and propylene glycol solutions to wastes generated. - Updated Table 1 with 2017 waste generation.	Throughout

Revision No.	Revision Date	Reviewed / Revised By	Description of Change	Revised Pages
5	January 2019	D. Frandsen	Reviewed and revised the Plan as follows: • Updated Plant Management. • Administrative Corrections	Throughout

1.0 INTRODUCTION

This Operation Waste Management Plan (OWMP) provides guidance for the identification and management of wastes which are likely to be generated during the operational phase of the Marsh Landing Generating Station (MLGS) in Antioch, California (Figure 1). This plan complies with Condition of Certification WASTE-7 issued by the California Energy Commission in Commission Decision 08-AFC-03 for MLGS, which states the following:

The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- 1. A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;*
- 2. Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;*
- 3. Information and summary records of conversations with the Contra Costa County Health Services Department (the local Certified Unified Program Agency) and DTSC regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;*
- 4. A detailed description of how facility wastes will be managed, and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and*
- 5. A detailed description of how facility wastes will be managed and disposed of upon closure of the facility.*

The document is intended to satisfy this requirement; NRG Energy, Inc. Environmental Policy and Procedures Waste Minimization/Pollution Prevention Plan; and to serve as a guide to facility personnel. The OWMP identifies but does not address in detail wastes which are discharged in accordance with a federal, state or local permit or authorization on either an intermittent or ongoing basis. These include air emissions, wastewater discharged under a site-specific permit, water produced from dewatering, or other wastes discharged in accordance with state- or locally-issued Waste Discharge Requirements.

This Plan will be updated annually, or more often if necessary, to address current waste generation and management practices. In addition, the actual volume of wastes generated and the waste management methods used during the year will be documented in each Annual Compliance Report.

2.0 SITE DESCRIPTION

2.1 Site Location and Description

The Marsh Landing Generating Station (MLGS) is an electrical generating facility located at 3201C Wilbur Avenue, Antioch, California (Figure 1). MLGS was substantially completed in April 2013, with commercial operations commencing May 1, 2013.

MLGS is located adjacent to the Contra Costa Generating Station (CCGS), a retired steam electric generating plant. The site is bordered by industrial uses, including Pacific Gas and Electric Company (PG&E) operational areas and a PG&E switchyard. The main industrial process consists of four natural gas-fired, simple-cycle ("peaker") electric generating units with a combined generating capacity of 760 megawatts.

2.2 Waste Generation Overview

Typical of electrical generating facilities, MLGS uses a variety of hazardous materials, including natural gas, diesel fuel, batteries, thinners, paints, oils (lubricating oil, dielectric, mineral, hydraulic), aqueous ammonia, cleaners and detergents, ethylene and propylene glycols, transmission fluid, and water treatment chemicals (sodium hypochlorite, acids, polymers, sodium bisulfite, etc.) among others, in a variety of processes and equipment. Buildings and structures may also contain materials such as lead-based paint. No asbestos or PCBs wastes are expected to occur at the site.

The following sections summarize the individual waste streams associated with plant operations and procedures for waste characterization, handling and disposal.

3.0 WASTE STREAM DESCRIPTION AND CHARACTERIZATION

3.1 Waste Generation

Typical wastes generated during ongoing operations of power generation are summarized in Table 1 below. Other wastes not listed may be generated from time to time. Projected amounts are estimates and will vary from year to year.

Table 1 Waste Stream Summary Marsh Landing Generating Station			
Waste	Frequency	Projected Average Amount	Hazards /Classification
Uncontaminated concrete or asphalt	Infrequently	None expected	None/ non-hazardous inert debris
Contaminated concrete or asphalt	Infrequently	None expected	Oils, metals/ hazardous, non-RCRA hazardous, or non-hazardous
Miscellaneous uncontaminated structural and building materials (e.g., brick, stone, glass, non-asbestos insulation, gypsum wallboard)	Infrequently	None expected	None/ non-hazardous inert debris
Scrap metal (e.g., equipment, machinery, piping, potable or service water tanks and piping)	Infrequently	Only as needed	Minor amounts of oil and grease/excluded scrap metal
Vegetative material	Regularly	As needed from landscaping activities	None/non-hazardous green waste
Uncontaminated soil	Infrequently	None expected	None/ non-hazardous inert debris
Contaminated soil or debris	Infrequently	None expected	Oils, metals, organics, etc./hazardous, non-RCRA hazardous, or non-hazardous
Oily water and oil-water separator sludge	Continuously	2,000 gallons / year	Oil, metals/hazardous or non-RCRA hazardous
Waste paint, adhesives, and paint-related debris	Continuously	25 pounds / quarter	Metals, flammable VOCs/hazardous
Waste fuel (diesel, gasoline)	Infrequently	None expected	Hydrocarbons, flammable VOCs/hazardous
Waste oil (e.g., lubricating fuel, dielectric, mineral, hydraulic, etc.) and oily debris	Continuously, with larger amounts infrequently	450 pounds / month	Oil/ non-RCRA hazardous
Universal wastes (fluorescent light tubes,	Continuously	200 pounds / year	Mercury, metals/hazardous (universal waste)

Table 1 Waste Stream Summary Marsh Landing Generating Station			
Waste	Frequency	Projected Average Amount	Hazards /Classification
compact fluorescent light bulbs, HID lamps, batteries, mercury-containing devices, electronic wastes, aerosol cans)			
Waste maintenance chemicals (oils, greases, paints, solvents, glycols, etc.)	Infrequently	200 pounds / year	Metals, flammable VOCs, hydrocarbons, corrosives/hazardous
Empty containers < 5 gallons	Infrequently	30 pounds / year	Residual chemicals /empty container (see "Managing Empty Containers" by DTSC)
Empty containers > 5 gallons	Infrequently	30 pounds / year	Residual chemicals/ empty container (see "Managing Empty Containers" by DTSC)
Waste/spent corrosives	Infrequently	Minimal	Corrosive/hazardous
Ammonia waste	Infrequently	None expected	Corrosive/hazardous
Laboratory waste	Frequently	40 gallons / year	Metals, acids, corrosives/hazardous
Waste natural gas liquids	Continuously	Minimal	Flammable VOCs/hazardous
Lead-acid batteries	Infrequently	4 batteries / year	Lead, corrosive/excluded or hazardous
Drained used oil filters	Frequently	As needed, <100 filters / year	Metals, oil/excluded or hazardous
Wood waste	Infrequently	None expected, as needed	None/ non-hazardous wood waste
Municipal refuse and garbage	Continuously	Continuous generation and disposal as needed	None/ non-hazardous municipal refuse
Sanitary wastewater	Continuously	<21 gallons / minute	Fecal coliform, nitrates, BOD/sanitary waste
Industrial wastewater	Continuously	<21 gallons / minute	Oil, metals/non-hazardous
Turbine cleaning wash water	Infrequently	Twice yearly, 2,000 gallons per event	Oil, detergents/non-hazardous
Decontamination wastewater (e.g., tank and sump emptying and cleaning)	Infrequently	None expected	Oil/non-RCRA hazardous or non-hazardous
Water from groundwater intrusion/dewatering	Infrequently	None expected	None/non-hazardous
CO and NOx catalyst	Very infrequently	18 to 19 tons every 10 to 15 years	Metals/hazardous
Waste CFCs	Infrequently	None expected	Ozone depleting/hazardous
Used natural gas filters	Infrequently	4,000 pounds / event	Organics/ non-RCRA hazardous

Note: Storm water is not a waste.

3.2 Waste Characterization

Waste characterization is performed on each waste stream to determine the appropriate management method. Wastes generally fall into one of the following categories:

- Inert soil or debris for disposal
- Inert soil or debris for on-site re-use
- Municipal refuse
- Green waste and wood waste
- Non-hazardous industrial waste
- Non-RCRA (i.e., California-only) hazardous waste, including universal wastes
- RCRA hazardous waste, including universal wastes

Waste classification will be performed in accordance with the following guidance:

- California Code of Regulations (CCR) Title 22, Division 4.5, Chapter 11 - Identification and Listing of Hazardous Waste.
- *Defining Hazardous Waste*, guidance from California Environmental Protection Agency, Department of Toxic Substances Control available at <https://www.dtsc.ca.gov/HazardousWaste/>.
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)* published by the USEPA Office of Solid Waste and available at <https://www.epa.gov/hw-sw846>.

The waste characterization process will begin with compiling generator knowledge regarding the waste. This can include information from the operational history of the site and waste production area; waste process knowledge; Safety Data Sheet (SDS) information; results of previous waste characterization and testing; and general knowledge regarding the nature of power generation facility waste streams. For most wastes, sufficient generator knowledge is expected to be available to allow appropriate waste classification.

Where generator knowledge is insufficient to adequately characterize the waste, physical or chemical testing of a waste may be needed. If testing is necessary, an appropriate number of samples will be collected using the appropriate sampling method in accordance with the guidance materials referenced above. Testing will be performed in accordance with the appropriate method specified in Table 2. These methods are consistent with the guidance documents above. All waste analyses will be performed by analytical laboratories certified through the California Department of Health Services Environmental Laboratory Accreditation Program.

In some cases, additional testing may be performed on wastes in order to satisfy profiling requirements for specific potential off-site disposal facilities, depending on their individual operating permit requirements, local ordinances, and internal policies and procedures.

Liquid wastes which will be discharged under a site-specific permit or authorization, or state-wide or region-wide general permit, will be characterized as required under that permit. In most cases, monitoring and sampling is performed at the discharge point and is subject to both specified discharge limitations and periodic reporting requirements.

Table 2 Waste Characterization Method Summary Marsh Landing Generating Station	
Analyte/Characteristic	Analytical Method
Title 22 Metals	EPA Method 6010, 6020, 7471A/7471B
PCBs	EPA Method 8082
Chromium (VI)	EPA Method 7196A/7199
pH	EPA Method 9045C
TPH-diesel, motor oil, lube oil	EPA Method 8015B
TPH-gasoline	EPA Method 8015B
VOCs	EPA Method 8260B
SVOCs	EPA Method 8270C or 8310
Cyanide (total)	EPA Method 335.2 or 9012A
Flash Point	EPA Method 1010
Corrosivity	EPA Method 9040
Toxicity versus federal RL criteria listed at 22 CCR 66261.24(a)(1)	EPA Test Method 1311 (Toxicity Characteristic Leaching Procedure)
Toxicity versus California STLC criteria listed at 22 CCR 66261.24(a)(2)	Waste Extraction Test, Appendix II, Title 22, Division 4.5, Chapter 11
Acute Aquatic Toxicity versus California criteria 22 CCR 66261.24(a)(6)	Static Acute Bioassay Procedures for Hazardous Waste Samples," California Department of Fish and Game, Water Pollution Control Laboratory, revised November 1988

4.0 ON-SITE WASTE MANAGEMENT

4.1 Waste Containment and Storage

Once a waste is generated, a specific on-site management method will be followed in accordance with the waste's known and suspected hazards. Table 3 provides information on waste containment and storage for most of the identified waste streams. See Figure 2 for hazardous waste storage and accumulation areas. The sections following provide specific information on several of the waste streams.

Table 3 Waste Containment and Storage Summary Marsh Landing Generating Station		
Waste	Storage and Containment	Storage Time Limits
Uncontaminated concrete or asphalt	Pile storage, roll off bins, site-wide	None
Contaminated concrete or asphalt	Covered roll-off bins, site-wide	90 Days
Miscellaneous uncontaminated structural and building materials	Pile storage, roll off bins, site-wide	None
Scrap metal	Roll-off bins, site-wide	None
Vegetative material	Roll-off bins, site wide	None
Uncontaminated soil	Pile storage, site wide	None
Contaminated soil or debris	Covered roll-off bins, site-wide; 55-gallon drums, designated hazardous waste storage areas	90 days
Oily water and oil-water separator sludge	Temporary tanks with secondary containment if not collected directly into transport vehicle (e.g., vacuum truck), 55-gallon drums, designated hazardous waste storage areas	90 days
Waste paint, adhesives, and paint-related debris	55-gallon drums, designated hazardous waste storage areas	90 days
Lead-based paint debris	Double (4-mil) or single (6-mil) bagged and placed in 55-gallon drums, designated hazardous waste storage areas	90 days
Waste fuel (diesel, gasoline)	55-gallon drums, designated hazardous waste storage areas	90 days
Waste oil and oily debris	55-gallon drums, designated hazardous waste storage areas	90 days
Universal wastes	Boxes, fiber containers, buckets, and 55-gallon drums, designated hazardous waste storage areas	One year
Waste maintenance chemicals	55-gallon drums, designated hazardous waste storage areas	90 days
Empty containers < 5 gallons	Roll-off bins, site wide	None
Empty containers > 5 gallons	Designated empty drum storage areas, drums will be labeled "Empty"	One year

Table 3 Waste Containment and Storage Summary Marsh Landing Generating Station		
Waste	Storage and Containment	Storage Time Limits
Waste/spent corrosives, ammonia waste, laboratory waste	Poly drums, designated hazardous waste storage areas	90 days
Waste natural gas liquids	Temporary tanks with secondary containment if not collected directly into transport vehicle (e.g., vacuum truck), 55-gallon drums, designated hazardous waste storage areas	90 days
Lead-acid batteries	Plastic containers, pallets, designated hazardous waste storage areas	90 days
Drained used oil filters	55-gallon drums, designated hazardous waste storage areas	One year
Wood waste	Roll-off bins, site-wide	None
Municipal refuse and garbage	Covered roll-off bins, trash cans, and dumpsters, site-wide	None
Sanitary wastewater	Sanitary waste collection sump and temporary storage facilities (e.g., hand-wash and portable facilities)	NA
Industrial wastewater	On-site storage tanks	NA
Turbine cleaning wash water	Double-walled underground storage tanks until removed by vacuum truck, combustion turbine drain tanks	None
Decontamination wastewater	Temporary tanks with secondary containment if not collected directly into transport vehicle (e.g., vacuum truck), 55-gallon drums, designated haz waste storage areas	Depends on hazards/ classification
Water from groundwater intrusion/dewatering	Temporary storage tanks, site-wide	None
CO and NOx catalyst	Roll-off bins, site-wide	90 days
Waste CFCs	Approved recovery containers, designated hazardous waste storage areas if not collected and removed immediately from site	90 days
Used natural gas filters	Boxes, fiber containers, designated hazardous waste storage areas	90 days
Waste ethylene and propylene glycol solutions	Plastic containers, drums	90 days

In addition to the above, all waste activities will be in accordance with the following regulatory requirements:

- CCR Title 22, Division 4.5, Chapter 12 – Standards Applicable to Generators of Hazardous Waste.
- Industrial Wastewater Permit issued by Delta Diablo.
- Air emissions permit and regulations, including Bay Area Air Quality Management District (BAAQMD) regulations for Fugitive Dust, Particulate Matter, Volatile Organic Emissions from Decontamination of Soil and Asbestos Emissions from Demolition/Renovation Activities, as applicable.
- MLGS Spill Prevention, Control, and Countermeasures Plan.
- MLGS Hazardous Materials Business Plan.

Hazardous waste accumulation areas are established and operated in accordance with CCR Title 22, Division 4.5, Chapter 12. Only short-term or limited-quantity storage of hazardous waste containers may occur outside of these designated areas.

On-Site Waste Processing and Treatment

At this time the only on-site waste processing activities and treatment are described below:

On-Site Wastewater Treatment

Wastewater from the evaporative cooler operations, floor drains and equipment area drains with the potential to be contaminated by oil are collected and passed through an oil-water separator and pumped to a 200,000 gallon wastewater storage tank. Water treatment area wastes are also pumped to the wastewater storage tank. Stored wastewater is later discharged, along with sanitary wastes, in accordance with the facility's industrial wastewater discharge permit issued by Delta Diablo.

In addition, the facility has a bioretention facility that detains and treats storm water. Storm water is detained and treated in the surface reservoir, filtered through plants and a biologically active soil mix, and then it infiltrates into the ground. The bioretention facility contains underdrains as a preventive measure against poor drainage. Underdrains are routed to an outlet that is valved and connects to CCGS's discharge tunnel to the River. The valve is kept closed and discharges to the River will only occur if the infiltration is inadequate to keep appropriate freeboard in the reservoir.

5.0 OFF-SITE WASTE DISPOSAL

5.1 Waste Transportation and Disposal Facility Selection and Use

All wastes will be transported from the site to the disposal, recycling or processing facility by appropriately licensed transporters and disposed of at licensed facilities. In addition, MLGS is subject to the NRG Energy, Inc. Environmental Policy and Procedures. Section 1.3. of NRG's Environmental Policy and Procedures Manual states the following:

1.3.2. Waste Disposal Contracts

Written contracts/purchase orders must be used when procuring services from suppliers for disposal and/or treatment of Facility wastes.

1.3.3. Waste Disposal Supplier Review, Selection & Contracting / Purchasing Details

NRG may not use the services of a waste disposal contractor without confirming:

- 1) the vendor company and its facility(ies) are properly licensed;*
- 2) waste documentation is available as required by the vendor, state and/or federal agency(ies), including:*
 - A. a current waste profile (characterization) for the Facility waste stream the vendor will handle and the destination of each such waste; and*
 - B. a properly completed manifest which complies with applicable law; and*
- 3) for Hazardous, Universal, Industrial/Special Wastes or materials to be recycled such as electronic equipment, batteries, lamps and mercury containing devices, an NRG representative, contracted auditor, approved waste vendor or agency has visited and audited the disposal/recycling site specified within the previous five years, and the audit report has been reviewed and approved by the Environmental Compliance Team. For Non-Hazardous waste (such as general trash) and recycling materials such as paper, plastic and aluminum, audit reports are not required.*

Evaluation of commercially available audits of waste disposal facilities and companies (such as through the service provided by CHWMEG) where NRG waste materials are sent shall be acceptable documentation for satisfying the requirements above, provided that the audit report has been reviewed and the waste disposal facility approved by the Environmental Compliance Team.

Copies of the approved contract/purchase order and information regarding the vendor shall be kept in the Facility Environmental Files.

Waste transporters and disposal facilities currently being used or planned for use are provided in Table 4. Each of these facilities has been selected and contracted in accordance with the above NRG Policy. Additional or alternate facilities and transporters may be used in the

future, depending upon conditions. All transporters and facilities shall be licensed and have the appropriate permits. Vendors shall also meet NRG Policies and Procedures and other internal requirements.

Table 4 Waste Transportation and Disposal Vendors Marsh Landing Generating Station Operations	
Waste	Transporter / Destination Facility
Waste (Concrete)	ALB, Inc. Cemex USA
Waste (Demo Debris)	Veolia – Keller Landfill (Allied Waste)
Waste from Special Projects	Clean Harbors or Veolia or MP Environmental
Routine Waste	Allied Waste
Waste Flammable Liquid (Lab Pack)	Veolia - Azusa
Waste Aerosols, Waste Flammables, Lead Debris	Veolia - Azusa
Universal Waste (Batteries, Lamps, Mercury Switches, Electronic Wastes, etc.) Non RCRA Hazardous Waste (Soil, Oily Debris, Ash, Pipes Contaminated with Fuel Oil, Oily Water, Waste Oil, Lab Packs, Wood Waste, Asphalt, Non PCB Ballasts, Urea, Soil Mixed With Asphalt, Waste Ethylene and Propylene Glycol Solutions)	Veolia – Azusa or Richmond
Hazardous Waste (Oily Pipe and Contaminated Soil)	Veolia – Keller or Azusa
Scrap Metal	Aaron Metals
Oil/Water/Sludge	Safety-Kleen – Newark Veolia – Azusa Ramos Environmental Services

6.0 WASTE MANAGEMENT SYSTEM

6.1 Waste Management Procedures and Best Management Practices

Waste management procedures and best management practices which will be implemented throughout the course of operations include the following:

- Assignment of responsibility for waste management to the Environmental Specialist and Environmental Technician.
- Training of personnel regarding waste management procedures.
- Recording specified data for each off-site waste transfer (inert, non-hazardous, and hazardous).
- Performing disposal facility audits, in accordance with NRG Policy.
- Performing on-site transporter checks.
- Performing inspections of waste storage areas and containers.

6.2 Recordkeeping

MLGS will maintain appropriate records for all disposal of waste. Records will include the following:

- Records of waste classification determinations, including documentation of generator knowledge and waste analyses.
- Disposal facility waste profiles.
- Disposal facility audit reports.
- Transporter audit reports.
- Waste storage inspection records/checklists.
- Bills of lading for non-hazardous waste and universal waste shipments.
- Hazardous waste manifests for each waste shipment, including Generator Initial Copy.

Additional or duplicate information for hazardous wastes may also be maintained in a tracking spreadsheet on the shared drive. This spreadsheet captures a variety of information about each waste shipment including Date Shipped Off Site, Waste Shipping Name and Description, Shipper/Receiving Facility, Profile Number, Manifest Tracking Number, Number of Containers, Type of Containers, Total Quantity (Volume/Weight), and Waste Codes.

6.3 Waste Minimization and Reduction

As previously indicated, MLGS is subject to the NRG Energy, Inc. Environmental Policy and Procedures. Section 1.3. of NRG's Environmental Policy and Procedures Manual states the following:

NRG seeks to reduce waste generation and, in accordance with Environmental Law, provide for the safe, cost-effective and responsible management of wastes that cannot otherwise be avoided.

1.3.1. Waste Minimization/Pollution Prevention Plan

Each Operations Facility will maintain and update annually a waste minimization/pollution prevention plan that describes an internal program for preventing, reducing, recycling, reusing, and minimizing waste, and emissions. The plan will determine best management practices for reducing wastes and the costs associated with lawfully handling them. The plan shall be reviewed, updated as necessary, and approved annually by the Facility Manager or his/her designee and the Regional Environmental Manager/Director or his/her designee.

The following areas must be examined as part of the waste minimization/pollution prevention plan: (a) description of the primary waste materials produced; (b) steps already implemented to prevent, reduce, recycle, reuse, or minimize waste materials; (c) potential additional steps to prevent, reduce, recycle, reuse, or minimize waste materials; and (d) recommendations for purchasing alternative raw materials and/or Industrial Chemicals that may reduce waste generation.

Non-hazardous waste minimization and reduction initiatives include the following:

- Recycling of concrete to the extent possible.
- Equipment salvage.
- Recycling of scrap steel, copper, aluminum and other metals.
- Recycling of wood.
- Recycling of used 55-gallon drums as scrap metal.

Minimization and reduction of hazardous wastes generated by the power generation operations is accomplished through adherence to the above-referenced NRG Policy and applicable regulations. Recommendations, as they are presented, will be considered for purchasing alternative raw materials and/or Industrial Chemicals that may reduce waste generation.

6.4 Facility Waste Management During Unplanned or Temporary Closure

Regardless of the circumstances of the temporary closure (unplanned or planned), the facility will maintain 24 hour staffing and the CEC will be notified. Facility waste management practices in a temporary closure would essentially remain the same as those performed during operations, although the waste volumes would be less due to the non-operational status of the facility. In the event of an extended shutdown, the facility may

need to conduct certain tasks, such as the draining of chemicals, water, and other fluids from storage tanks and plant equipment to ensure worker safety, and to protect plant equipment and the environment. These activities would follow normal maintenance practices, and be performed in accordance with equipment manufacturer's recommendations.

All hazardous and nonhazardous wastes generated during the temporary closure would be collected, managed, and disposed of consistent with all laws, ordinances, regulations and standards (LORS). It is expected that the management methods, housekeeping, waste testing methods, transportation and disposal requirements would remain the same as those during the operational phase of the facility. Inspections of wastes would also continue to be performed consistent with Federal, State and local regulations. Even in a longer term facility closure, the regulatory compliance programs and ongoing waste practices would continue.

In an unplanned facility temporary closure, nonhazardous liquid wastes, such as wastewater, would be managed in similar fashion as those conducted during operation of the facility, although at a reduced scale, as some wastes would no longer be generated. Storm water, although not a waste, would continue to be managed in similar fashion as during operations. Nonhazardous solid wastes would also continue to be managed in similar means as those generated during the operational phase of the facility.

In the event of an unplanned temporary facility closure due to emergencies such as earthquakes, fires, or releases of hazardous materials, activation of the appropriate Contingency Plan would be implemented. Contingency Plans are required under a number of regulatory programs, and the implementation would depend upon the type of emergency encountered. For example, a release of a hazardous material would trigger the implementation of the Facility Emergency Plan and the Hazardous Materials/Hazardous Waste Contingency Plan under Hazardous Materials Business Plan requirements. These Contingency Plans include methods to control releases of hazardous materials, notification of appropriate authorities and the public, training for plant personnel, and other emergency response actions and preparation. When the release of hazardous materials has been contained and cleaned up, temporary closure will proceed as in the case of a closure where there is no release of hazardous materials.

If the facility closure is of extended duration, an updated Hazardous Materials Business Plan will be submitted to the local CUPA that would reflect the changes to the facility storage of hazardous materials including wastes. Should hazardous materials remain on the site, inspections, recordkeeping, training and all other compliance requirements of the CEC as well as all other LORS will be continued.

A facility closure plan would not be prepared as part of a temporary closure, as it would be expected the plant would eventually return to service.

6.5 Facility Wastes Management and Disposal upon Closure of the Facility

The original planned operational life of the facility is at least 30 years with at least 24 years remaining, although the facility could operate longer or shorter depending upon numerous variables and conditions. When the facility is expected to be finally closed, procedures set forth in a facility closure plan will be implemented. Refer to the Compliance Conditions for Facility Closure Plan for specific details.

Proposed decommissioning measures will attempt to maximize the recycling of all facility components. Unused chemicals will be sold back to the suppliers or other purchasers where practicable. All equipment will be shut down and drained so as to ensure public health and safety and protection of the environment. All hazardous and nonhazardous waste materials will be collected and disposed of consistent with all LORS. Until decommissioning activities have been completed, 24-hour staffing for the facility will be maintained.

Figures

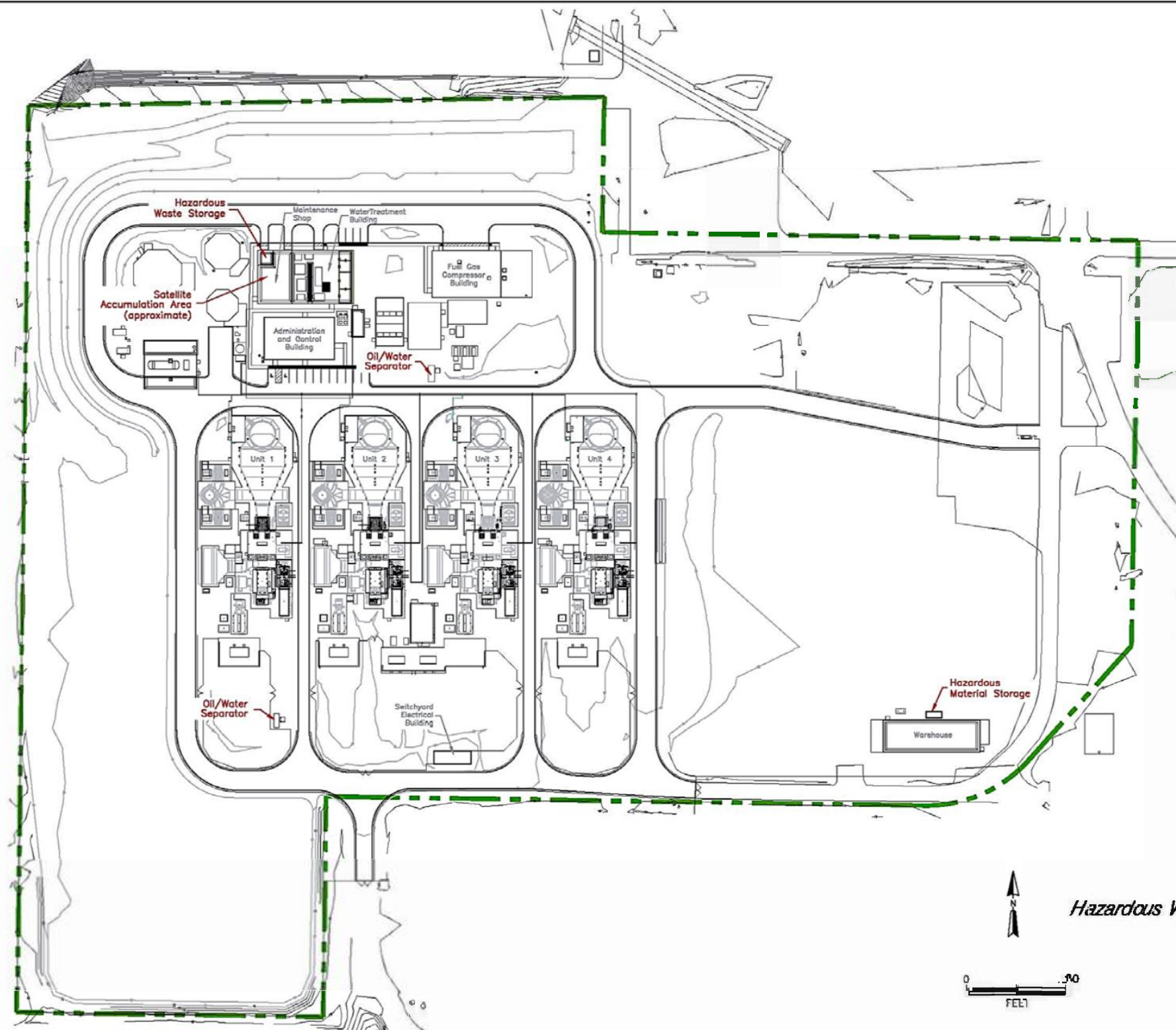


Aerial Photo Source: ©Google Earth Pro
Image Date: 3/11/2017

0 .25 .5
Approx. Scale (mile)



Figure 1
Site Vicinity Map
Marsh Landing Generating Station
NRG Marsh Landing, LLC
3201-C Wilbur Avenue
Antioch, California



LEGEND

- - - - - Parcel Boundary

Notes:

1. Actual parcel location is approximate and based on construction drawings to date. For more detailed and accurate specifications, see Kiewit Marsh Landing Generating Station drawing number 2009-019-CM-013, 2009-019-CM-007, and 2009-019-PP-001.
2. Parcel boundary based on Contra Costa County Assessor's Map, Book 51, Page 3; 10-6-2010 (Block No. 031, Parcel 18). Parcel area = 26.84 acres.

Figure 2
 Hazardous Waste Storage and Accumulation Areas
 Marsh Landing Generating Station
 GenOn Marsh Landing, LLC
 3201-C Wilbur Avenue
 Antioch, California



2019 HAZARDOUS WASTE GENERATOR REPORTING FORM

FACILITY NAME: MARSH LANDING GENERATING STATION **CUPA FACILITY ID:** 774528

CERS ID: 10480876 **EPA ID:** CAR000217273

Please review the following to determine if submittal of the HWG Reporting form is necessary.

- Determine the amount of hazardous waste your business disposed of during the calendar year 2018. See "Calculating Hazardous Waste" on the reverse for tips on calculating hazardous waste disposal quantities.
- According to CCHSHMP records your business's annual hazardous waste disposal is:

5 - <12 TONS/YEAR

- If your hazardous waste disposal calculations fall within the listed range, you do not need to submit the HWG Reporting form. Calculations will be verified during your next inspection. Discrepancies confirmed during an inspection will result in a fee adjustment.
- If your hazardous waste disposal calculations do not fall within the range shown above, you will need to submit the HWG Reporting form. Calculations will be verified during your next inspection and discrepancies will result in a fee adjustment. The instructions and the form are on the reverse. Forms are due to CCHSHMP on or before March 1, 2019.

This request for information is separate than the California Environmental Reporting System (CERS) requirements. Completion of this form, or not having to complete this form, does not fulfill the CERS reporting requirement under Title 27 of the California Code of Regulations.

YOU MUST ALSO COMPLETE AN ONLINE CERS SUBMITTAL

<http://cers.calepa.ca.gov/>

For additional assistance, please call CCHSHMP at (925) 335-3200 to speak with a Hazardous Materials Specialist or email us at ccchazmat@cchealth.org.

Please read the instructions on the reverse carefully before continuing.
The HWG Reporting Form is due on or before March 1, 2019.



FACILITY NAME: MARSH LANDING GENERATING STATION **CUPA FACILITY ID:** 774528

CERS ID: 10480876

EPA ID:

CAR000217273

Completing and Submitting the Hazardous Waste Generator Reporting Form

Calculating Hazardous Waste

Determine the amount of hazardous waste disposed of by your business by reviewing your business's hazardous waste manifests, consolidated manifests, and disposal receipts for calendar year 2018. Disposal includes any hazardous waste picked up by a licensed transporter or taken to a certified collection location. Hazardous waste is defined as any waste that is listed or meets the criteria of toxicity, corrosivity, ignitability, or reactivity as defined by the California Code of Regulations, Title 22, Chapter 11.

These guideline conversion factors may be used when calculating tonnage:

- a) Number of gallons X 0.00417 tons / gallon = Number of tons
- b) Number of cubic yards x 1.35 tons / cubic yard = Number of tons
- c) Number of pounds / 2000 pounds = Number of tons

Completing the Reporting Form

1. If your calculation for the 2018 calendar year is outside your current disposal category you must complete this form.
2. Check the box that indicates the correct tonnage of hazardous waste disposed of during the 2018 calendar year.
3. Fill in signature, print name, date, phone number, and email address.

Submitting Options

CERS: Upload a pdf of the completed HWG Reporting Form to CERS under *Miscellaneous State-Required Documents* in the *Facility Information* submittal element. If there is a previously submitted Reporting Form, click on "Discard" to remove it before uploading the 2019 HWG Reporting Form. Type in "HWG Reporting Form" in the document title section and then click *Save & Finish*.

FAX: You may fax the completed Reporting Form to (925) 646-2073.

EMAIL: You may email the completed Reporting Form to ccchazmat@cchealth.org.

MAIL: Contra Costa Health Services Hazardous Materials Programs
4585 Pacheco Blvd., Suite 100, Martinez, CA 94553

Hazardous Waste Generator Reporting Form

Total Tonnage of Hazardous Waste Disposed Of During 2018

- | | |
|--|--|
| ☐ Zero tons | ☒ 50 tons ≤ amount disposed < 250 tons |
| ☐ Less than 5 tons | ☐ 250 tons ≤ amount disposed < 500 tons |
| ☐ 5 tons ≤ amount disposed < 12 tons | ☐ 500 tons ≤ amount disposed < 1000 tons |
| ☐ 12 tons ≤ amount disposed < 25 tons | ☐ 1000 tons ≤ amount disposed < 2000 tons |
| ☐ 25 tons ≤ amount disposed < 50 tons | ☐ Greater than 2000 tons |

I hereby certify that this form, including any accompanying statements, is true and correct to the best of my knowledge and belief.

Signature: Joe Moura

Date: 02/15/2019

Print Name: Joe Moura

Phone: (925) 779-6685

Email Address: joe.moura@nrg.com

Marsh Landing Generating Station

Annual Compliance Report

3.9 BIO-8

The California Wildlife Foundation Annual Report for 2017 – 2018 is included.

CALIFORNIA WILDLIFE FOUNDATION

428 13th Street, Suite 10A
Oakland, CA 94612



WWW.CALIFORNIAWILDLIFEFOUNDATION.ORG

tel 510.208.4436
fax 510.268.9948

February 27, 2019

Mr. Daniel Leach
Sr. Engineer— MLGS
NRG Energy, Inc.
P. O. Box 1687
Antioch, CA 94509

Dear Daniel:

Enclosed please find the Annual Report – 2017-2018 – for funds donated to Antioch Dunes National Wildlife Refuge by NRG Energy, Inc.

Thank you again for your support of this very special place. As you can see by the photos accompanying the report, the community and staff are extremely appreciative of your generosity. They are putting your contribution to good use every day!

Please feel free to contact me at 510-763-0211, if you need additional information.

Sincerely,

A handwritten signature in cursive script that reads "Janet Cobb".

Janet S. Cobb, Executive Officer
California Wildlife Foundation

Cc: Bradley B. Brownlow, Esq.
Holland & Knight LLP

Ryan Olah and Stephanie Jentsch, FWS

Projects and Accomplishments at Antioch Dunes NWR
Funded by NRG Energy, Inc.
Dec 2017 to Dec 2018 Summary Report

Since August 2011 NRG Energy, Inc. (formerly GenOn Energy Service, LLC) has generously donated a total of \$183,526.26 to the Antioch Dunes National Wildlife Refuge (NWR) to support the conservation of three endangered species and their habitat. The following is a summary of how the donated funds between Dec 31st 2017 and Dec 22nd 2018 were used by the Antioch Dunes NWR in an effort to conserve the endangered Antioch Dunes evening primrose (*Oenothera deltoides howellii*), Contra Costa wallflower (*Erysimum capitatum angustatum*), and Lange's metalmark butterfly (*Apodemia mormo langei*) and their habitat. The Antioch Dunes NWR partners with the California Wildlife Foundation (CWF) to help complete these tasks. The CWF is a nonprofit organization that administers restoration of land and water projects and works with partners to maintain habitat for the benefit of people, plants, and wildlife. This last year, all expenses were used to rent debris boxes from Allied Waste Disposal. All funds were used in support of restoration and conservation purposes on multiple projects ongoing at the Antioch Dunes NWR (Tables 1 & 2). Including support for non-native invasive plant control projects throughout the Refuge. This report will also highlight the progress pertaining to the endangered Antioch Dunes evening primrose. Future project proposals for the coming 2019 year will be outlined (Table 3).

For the 2018 year NRG Energy, Inc. generously donated \$23,218.00 to the Antioch Dunes NWR on May 9th 2018. The \$23,218.00 donation was combined with a remaining \$30,433.84 held by the CWF from previous year's donations. The 2018 donation increased the total budget to \$53,651.84 (Table 2). The remaining balance held by the CWF at the end of the 2018 year was \$50,352.98. During the 2018 year only \$7,989.94 was expended on the rental of debris boxes from Allied Waste Disposal (Republic Services). During the 2018 year we had planned on using \$20,000.00 for the hiring of biological technicians. However, in the 2018 year the Antioch Dunes NWR staff concentrated on expending a large internal grant that was awarded the previous year. This allowed the Antioch Dunes NWR to conserve the funds donated by NRG Energy, Inc. for the 2019 year.

Antioch Dunes Evening Primrose Background and Status Summary:

One of the three federally listed endangered species supported by NRG, Energy funds donated to the Antioch Dunes NWR is the Antioch Dunes evening primrose. The Antioch Dunes evening primrose, or ADEP, is a short-lived perennial plant in the evening-primrose family (Onagraceae). They are known to live two to five years, but are generally a biannual. The ADEP forms large tufts with coarse drooping stems 10–101 cm (4 - 40 inches) long. Leaves are lance-like in outline, 2.5 – 3.1 cm (1 - 5 inches) long, 1–3.1 cm (0.4 - 1.2 inches) wide, with grayish hairs. White flowers open in early evening and close in the morning, and bloom from March to September (Photo 1). The flowers start as a pink bud and then turn white, and resort to a pink color again as they wilt. The ADEP flowers have a slight rosy aroma. Peak bloom for the ADEP is in mid-May.

The Antioch Dunes evening primrose was federally listed as endangered in 1978. The ADEP can be found mostly on and around the Antioch Dunes NWR in Antioch, CA and near the

refuge in Contra Costa County. A small population of ADEP (25 -75 plants) is found at the Brennan Islands State Recreation Area. Another small population of ADEP plants at Tilden Regional Park Botanical Gardens. However, the bulk of the ADEP population is believed to be found on the Antioch Dunes NWR (Fig. 1.).

The ADEP population has been increasing since the beginning of the sand dune restoration project in 2013. The sand dune restoration project is a collaboration with the Army Corp of Engineers and the Port of Stockton who dredge the shipping channel in the adjacent San Joaquin River and deposit the sandy material on the Stamm Unit (Map 1 and Photo 4). When restored, the sand dunes will be replanted with the endangered plants, the host plant for the Lange's metalmark butterfly and other native plants. Since the project began in 2013, the refuge has received 68,000 plus cubic yards of sand material. Last year's ADEP survey in the restored sand dunes alone resulted in the fifth largest number of this species counted since the refuge began surveying for ADEP in 1985. The NRG Energy, Inc. funds donated to the Antioch Dunes NWR are a vital part of these projects. Last year, the funds were used to rent large debris boxes/roll-off dumpsters in support of non-native invasive plant control projects on and around the newly restored sand dunes.

Debris Box Rentals:

The Antioch Dunes NWR and the endangered species refuge was established to protect are directly threatened by non-native invasive plants and wildfires. Non-native invasive plants directly threaten the endangered plant species and the host plant for the endangered Lange's metalmark butterfly on the refuge by out competing them for water, space and sunlight. Some invasive plants, such as winter vetch (*Vicia villosa*) will climb on and smother the endangered plants and host plants, if not controlled annually. The invasive plant vegetation also acts as fuel for wildfires during the hot dry summertime. In the past the Antioch Dunes NWR has had relatively large wildfires that have directly impacted the populations of all three endangered species. Rental and use of roll-off dumpsters to remove non-native invasive plants and dead and dried plant material is vital and a valuable management tool on the refuge.

Dumpsters are rented from Allied Waste Disposal (Republic Services) to remove non-native invasive plant material and dried vegetation from the Antioch Dunes NWR. The dumpsters rented from Allied Waste cost \$425.24 per month or per dump and vary in size from 20 to 40 cubic yards. Extra charges are incurred when the boxes exceed 1 ton. The dumpsters are filled with mostly non-native invasive plant material by the refuge staff, biological technicians, interns, hired contractors, and volunteers (Photos 1). Non-native invasive plants, such as winter vetch, yellow starthistle (*Centaurea solstitialis*), Russian thistle (*Salsola tragus*), tree-of-Heaven (*Ailanthus altissima*) are pulled and deposited into the dumpsters. After the dumpsters are filled they are hauled away by Allied Waste trucks.

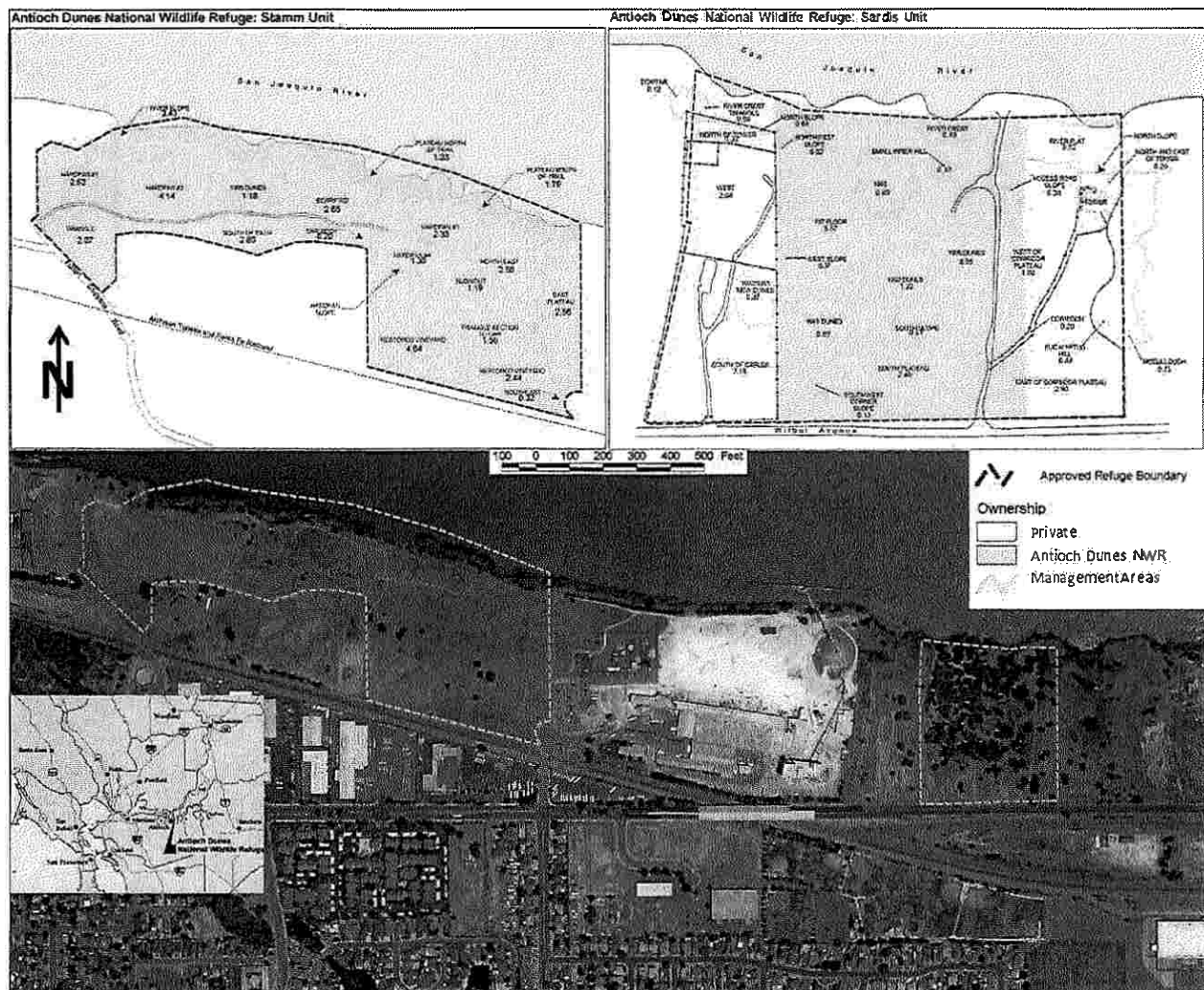
This last year \$7,989.94 was spent on the rental of debris boxes from Allied Waste (Table 1 & 2). All of the funds expended in 2018 were used to rent these debris boxes. The rental and use of the debris boxes from Allied Waste remains a very valuable resource needed for the control and management of non-native invasive plants on the refuge.

Proposed Projects for the 2019 year:

The following is a general proposal for the remaining funds donated by NRG Energy, Inc. including funds saved from previous NRG donations. The remaining funds add up to \$50,352.98 as of December 22nd 2018. Table 3 displays three proposed projects or tasks and the estimated expenses for the 2019 year. Proposed projects include \$18,000 used to hire biological technicians through HR Options. Approximately \$10,000.00 will be used to rent large debris boxes/roll-off dumpsters from Allied Waste for non-native invasive plant and dead vegetation disposal. The California Wildlife Foundation will be paid \$2,321.80 for a 10 percent service fee on the 2018 donation of \$23,218.00. Approximately \$15,000.00 will be used to hire local contractors to help control non-native invasive plants throughout the Antioch Dunes NWR. We plan on conserving approximately \$5,031.18 for the 2019 project year. Some of these remaining funds may be used for field supplies and equipment for biological technicians, volunteers and staff. Actual cost will vary throughout the 2019 year.

On behalf of the Antioch Dunes National Wildlife Refuge staff we would like to thank NRG, Energy Inc. for their continuous generous donations to the Antioch Dunes National Wildlife Refuge for the past eight years. These donations to the Antioch Dunes NWR continue to help conserve the critically endangered Antioch Dunes evening primrose, Contra Costa wallflower, and Lange's metalmark butterfly and their habitats, as well as numerous other native plant and animal wildlife that use the Antioch Dunes NWR. Funds also help to provide environmental education to the local community (Photos 2 & 3). Projects funded by NRG Energy, Inc. donations provide resources for projects that have benefited local Girl Scouts, volunteers, as well as Antioch High School, Sutter Elementary School, Antioch Charter Academy and the local community.

Donations from NRG Energy, Inc. are not only a tremendous benefit to the Lange's metalmark butterfly, Contra Costa wallflower, the Antioch Dunes evening primrose, and the Antioch Dunes NWR; but are also beneficial for environmental education programs, recreational purposes and for the general wellbeing of the community of Antioch. Thank you very much for your continued support.



Map 1. Antioch Dunes NWR Map. New Sand Dunes located on western end of Stamm Unit.



Photo 1. Allied Waste dumpsters rented to remove non-native invasive plants and other vegetation (April 2018).



Photo 2. Students from Antioch Charter Academy plant nectar plants for the endangered Lange's metalmark butterfly (Feb 2018).



Photo 3. Fourth Graders from Sutter Elementary get their hands dirty at Antioch Dunes NWR (March 2018).



Photo 4. Endangered Antioch Dunes evening primrose flourishes on restored sand dunes on the Stamm Unit (May 2018).

Table 1. Dec 2017- Dec 2018 Expended Funds Summary

Project / Partner	\$ Cost	% of Total
Allied Waste Dumpsters	\$7,989.94	100.0
Invasive Plant Control	0	0
Biological Technician	0	0
CWF 10% Fee for 2017	0	0
Total Funds Expended	\$7,989.94	

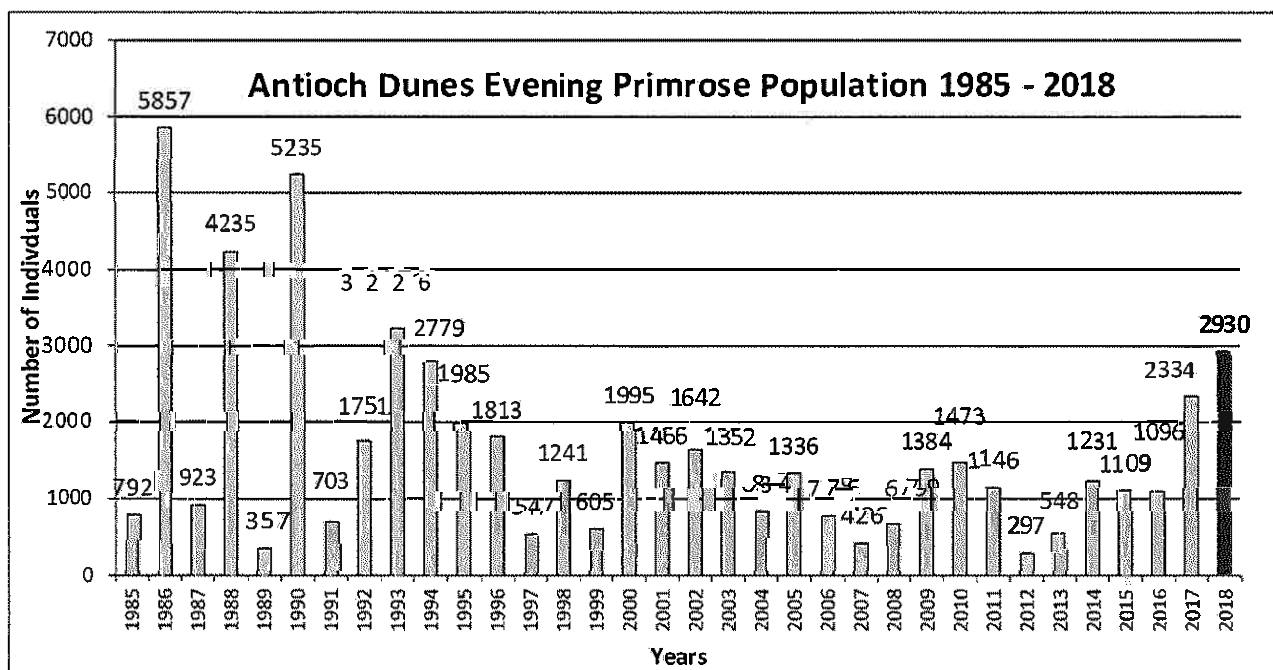
Table 2. Dec 2017 – Dec 2018 Funds Activity

Date	Action	Name	Memo	Transaction	Balance
	Balance	Balance			\$35,124.92
Dec 19 2017	Charge	Allied Waste	Dumpster rental for invasive plants	\$ 1,656.26	\$33,468.66
Jan 9 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$1195.46	\$32,273.20
Feb 20 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$1,195.46	\$31,077.74
Mar 8 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$479.91	\$30,597.83
May 8 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$163.99	\$30,433.84
May 9 2018	Deposit	NRG Energy, Inc.	2018 NRG Energy, Inc. Donation	\$23,218.00	\$53,651.84
Jun 6 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$453.15	\$53,198.69
Jul 10 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$454.79	\$52,743.90
Aug 9 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$597.73	\$52,146.17
Sep-Nov 2018	Charge	Allied Waste	Dumpster rental for invasive plants	\$1,793.19	\$50,352.98
			Total Expended Dec 2017 - Dec 2018	\$7,989.94	
			Total Remaining as of Dec 2018		\$50,352.98

Table 3. NRG Energy, Inc. Funds Proposal for 2019.

Task/Name	Est. Cost	Task Description
Total Balance for 2019	\$50,352.98	Balance remaining from 2018
Allied Waste / Republic Service	\$10,000.00	Rental of debris box dumpsters for vegetation removal
HR Options	\$18,000.00	Bio Tech hired by CWF via HR Options
California Wildlife Foundation	\$2,321.80	10% Service Fee
Contractor	\$15,000.00	Invasive Plant Control
Total Proposed Expenditures	\$45,321.80	Total proposed for 2019
Proposed Remaining Balance	\$5,031.18	Remaining balance to be held by the CWF

Fig 1. Antioch Dunes evening primrose count in new dunes site is 5th highest in last 33 years.



Prepared by:

Louis Terrazas, Wildlife Refuge Specialist
 Antioch Dunes, Marin Islands, San Pablo Bay National Wildlife Refuges
 U.S. Fish and Wildlife Service

Prepared for:

California Wildlife Foundation
 428 13th Street, Suite 10A
 Oakland, CA 94612

Marsh Landing Generating Station

Annual Compliance Report

4.0 Approved Changes to Conditions of Certification – Cumulative List

Condition of Certification	Date Change was Approved
PAL-3	September 26, 2010
AQ-SC7	May 15, 2012
BIO-8	May 15, 2012
BIO-8 Verification modified	October 3, 2016
Application Modifications	Date Change was Approved
Emergency Diesel Generator	December 3, 2014
Fire Pump System(including diesel pump)	December 3, 2014
Modular Building – Simulator/Library	March 13, 2015
Paving Project	May 9, 2017
Black Start – Battery Energy Storage System	March 12, 2019

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5.0 Submittal Deadlines Missed

1. No submittal deadlines were missed during 2018.

Marsh Landing Generating Station

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6.0 Other Governmental Agency Filings and Permits Issued

Permit Required	Date of Approval Given
1. Annual Permit to Operate by BAAQMD, Plant # 19169	1/19/2019 Actual
2. Clean Air Act Title IV Permit by BAAQMD (Acid Rain Permit)	11/3/2015 Actual
3. Clean Air Act Title V Permit by BAAQMD (to be obtained within 12 months after commencing operation)	11/3/2015 Actual
4. Application with BAAQMD for Title V permit modification for emergency fire pump addition and operation filed June 11, 2018.	1/7/2019 Actual
5. Application with BAAQMD for Title V permit modification for black start equipment addition and operation filed March 13, 2018.	Pending
6. Application filed with the BAAQMD to change facility name filed on 11/8/18.	Pending
7. Additional Governmental Approvals Identified in the CEC Decision or otherwise required in the ordinary course of business, including the following:	
a. Other CBO approvals to be obtained as specified in the CEC Decision	Ongoing
b. Notice of Termination, General National Pollutant Discharge Elimination System Permit for Discharges of Storm Water Associated with Construction Activity, and California Statewide General Industrial Storm Water Permits (State Water Resources Control Board Order No. 97-03-DWQ)	7/1/18 Actual
c. Certification to Store Hazardous Materials (Hazardous Materials Business Plan) by Contra Costa County Health Services Department (to be obtained at least 30 days prior to receiving hazardous materials on site)	5/2/2013 Actual
d. Compliance with certification, verification and other requirements specified in California Public Utilities Commission General Order 167 (to be provided when the MLGS Project is interconnected and capable of operating in parallel with the electric system)	2/2/2015 Actual
e. DDSD Industrial Wastewater Discharge Permit	5/25/2015 Actual
f. Emergency Diesel Generator – Initial Permit to Operate. Here in incorporated in the Facility Wide Permit to Operate, #1 above.	11/4/2015 Actual
g. Authority to Construct Diesel Fire Pump – Request to renew submitted to BAAQMD, November 23, 2016.	1/7/2019 Actual

Permit Required	Date of Approval Given
8. Department of Transportation Hazardous Materials Certificate of Registration Effective: 07-01-2018, Expires: 06-30-2019	7/01/2018 Actual
9. Department of Toxic Substance Control – DRAFT Well Inspection Report provided by PG&E.	1/17/2018 Actual
10. San Joaquin Regional Water Quality Control Board – Request to rescind the Industrial General Permit for Storm Water. The board agreed.	5/03/2017 Actual
11. CUPA Hazardous Material Storage Certificate for 2018/2019	7/01/2018 Actual

Marsh Landing Generating Station

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7.0 Project Compliance Activity Schedule for 2019

Compliance Activity	Schedule
Calibrate Met Station	Q1 & Q3
RATA and Emission Compliance Testing	Q4
Calibrate Water Flow Meters (3)	Q1
Calibrate Gas Flow Meters	Q1

Marsh Landing Generating Station

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8.0 Additions to the On-Site Compliance File

The following items were added to the compliance file since the April 2013 Monthly Report:

MLGS Sub #	Conditions Submitted	Date of Submission
161	Soil & Water-4	April 24, 2013
162	Soil & Water-4 and Soil & Water-5	May 1, 2013
163	Monthly Compliance Report No. 32 for April 2013	May 14, 2013
164	AQ-10, AQ-30, and AQ-32	June 25, 2013
165	HAZ-1	June 25, 2013
166	WASTE-5	June 26, 2013
167	NOISE-4	July 8, 2013

MLGS Sub #	Conditions Submitted	Date of Submission
168	NOISE-5	July 8, 2013
169	TSLN-3	July 12, 2013
170	Quarterly Compliance Report for Q2-2013	July 30, 2013
171	WASTE-5	August 5, 2013
172	BIO-6	August 14, 2013
173	CUL-4a	August 22, 2013
174	PAL-7	August 22, 2013
175	CIV-4	October 23, 2013
	Quarterly Compliance Report for Q3-2013	October 25, 2013
	Quarterly Compliance Report for Q4-2013	January 29, 2014
176	TRANS-2b	November 15, 2013

	Conditions Submitted	Date of Submission
	Quarterly Compliance Report for Q1-2014 Addendum – Air Quality Reports	April 30, 2014 July 2, 2014
	Quarterly Compliance Report for Q2-2014	July 30, 2014
	Quarterly Compliance Report for Q3-2014	November 14, 2014
	Quarterly Compliance Report for Q4-2014 partial Full Report	January 30, 2015 February 2, 2015
	Quarterly Compliance Report for Q1-2015 partial Full Report	April 30, 2015 June 9, 2015
	Quarterly Compliance Report for Q2-2015	July 30, 2015
	Quarterly Compliance Report for Q3-2015	October 29, 2015
	Quarterly Compliance Report for Q4-2015	January 29, 2016
	Quarterly Compliance Report for Q1-2016	April 30, 2016
	Quarterly Compliance Report for Q2-2016	July 30, 2016
	Quarterly Compliance Report for Q3-2016	October 30, 2016

	Conditions Submitted	Date of Submission
	Quarterly Compliance Report for Q4-2016	January 30, 2017
	Quarterly Compliance Report for Q1-2017	April 28, 2017
	Quarterly Compliance Report for Q2-2017	July 30, 2017
	Quarterly Compliance Report for Q3-2017	October 30, 2017
	Quarterly Compliance Report for Q4-2017	January 30, 2018 (Partial) February 9, 2018 (Final)
	Quarterly Compliance Report for Q1-2018	April 30, 2018
	Quarterly Compliance Report for Q2-2018	July 30, 2018
	Quarterly Compliance Report for Q3-2018	October 30, 2018
	Quarterly Compliance Report for Q4-2018	January 28, 2018

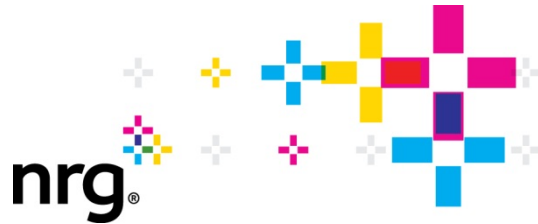
Marsh Landing Generating Station

Annual Compliance Report

9.0 Review of Unplanned Facility Closure Plan

The on-site contingency plan for unplanned facility closure has been reviewed and updated. See attached.

Marsh Landing, LLC



Compliance Conditions for Facility Closure Plan

**Marsh Landing Generating Station
Antioch, California**

**Revision 4
January 2019**

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PLANT MANAGER REVIEW

Marsh Landing Generating Station's Compliance Conditions for Facility Closure Plan has been reviewed by the Plant Manager.

Signature



Name

Joseph Moura

Title

Plant Manager

Date

1/8/2019

PLAN REVIEW AND CHANGE LOG

Revision No.	Revision Date	Completed by	Description	Revised Pages
1	1/2016	D. Frandsen	Reviewed and revised the Plan as follows: - Added cover page and Plan Review and Change Log. - Revised text to indicate present tense instead of future tense.	All
2	1/2017	D. Frandsen	Reviewed and revised the Plan as follows: - Added Facility Manager Review, Table of Contents and Introduction. - Revised document title to be consistent with the content. - Revised project description. - Separated the elements listed in the Unplanned Temporary Closure Section for the SPCC Plan and HMBP. - Added excerpts from General Conditions COMPLIANCE 11 through 13 contained in the Commission Decision 08-AFC-03 for MLGS.	All
3	9/2018	D. Frandsen	Administrative – - Update Site Manager information. - Removed sodium hydroxide from the chemicals listed onsite.	Throughout
4	1/2019	D. Frandsen	Administrative – - Updated Plant Manager information. - Updated Water Treatment tank reserved capacity.	Throughout

Marsh Landing Generating Station

INTRODUCTION

At some point in the future, the Marsh Landing Generating Station will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. This Compliance Conditions for Facility Closure Plan provides guidance for decommissioning activities and facility closure plan requirements as required by General Conditions COMPLIANCE 11 through 13 issued by the California Energy Commission (CEC) in Commission Decision 08-AFC-03 for MLGS.

I PROJECT DESCRIPTION

Overview

Marsh Landing Generating Station (MLGS) is located at 3201C Wilbur Avenue, Antioch, California, adjacent to the Contra Costa Generating Station (CCGS), a retired steam electric generating plant. MLGS was substantially completed in April 2013 with commercial operations commencing May 1, 2013, and is a nominal 760-MW simple cycle combustion turbine power plant designed to operate on natural gas fuel. The plant utilizes four Siemens Energy, Inc. SGT6-5000F4 combustion turbine-generators (CTGs). The site comprises an area that is a brownfield site measuring approximately 27 acres.

The MLGS is designed to provide peaking power, and is expected to operate at less than 10 percent annual capacity factor and a maximum 20 percent annual capacity factor. The MLGS is ideally suited to serve the needs of California's electric system as it increasingly relies on intermittent renewable resources such as solar and wind facilities. The four simple cycle turbines are capable of fast-start operation (within about 11 minutes from cold status), and are designed to be started, ramped up and down, and shut down on an intra-day basis as needed to meet the needs of the system.

The California Energy Commission (CEC) has regulatory jurisdiction over power plants located in California rated 50 MW or above and monitors all construction, operations, and decommissioning phases. The CEC approved this project's Application for Certification on August 25, 2010.

Equipment and Systems Description

Siemens provided the CTGs and auxiliaries, generator step-up transformers (GSUs), fuel gas compressors, fuel gas conditioning equipment and start-up support. Each unit includes one CTG with dry ultra-low nitrogen oxide (NOx) combustors and inlet air evaporative coolers. In the simple cycle arrangement, fuel is fired in the combustion turbines that utilize the Brayton power cycle in which hot combustion gases are expanded through the combustion turbines, which then drives an electric generator.

Kiewit Power Constructors Co. was the Engineering, Procurement and Construction (EPC) contractor for the project. Kiewit provided all facilities and equipment not provided by Siemens, including buildings, auxiliary transformers, and oxidation catalyst and selective catalytic reduction (SCR) systems for air emissions control. Kiewit was responsible for installation and commissioning of all equipment, including the turbines. Buildings and structures include an administration/control building, a water treatment building, a warehouse building, a medium voltage electrical building, electrical enclosures in the switchyard and water treatment areas, continuous emissions monitoring system enclosures, and a fuel gas compressor enclosure.

Water Treatment Systems

Process and potable water needs are supplied with water from the City of Antioch municipal supply. Raw water for process use is stored in a 600,000 gallon raw water storage tank. The top half (300,000 gallons) of the tank is utilized for process use while the bottom half (300,000 gallons plus) is reserved for firefighting capacity. Raw water is treated prior to use in the evaporative coolers. In addition, demineralized water for combustion turbine compressor water washes is provided on an as needed basis via a third-party agreement with a mobile treatment vendor. Demineralized water is stored in a 10,000 gallon storage tank.

Wastewater and Storm Water Systems

Wastewater from the evaporative cooler operations, floor drains and equipment area drains with the potential to be contaminated by oil are collected and passed through an oil-water separator and pumped to a 200,000 gallon wastewater storage tank. Water treatment area wastes are also pumped to the wastewater storage tank. Stored wastewater is later discharged, along with sanitary wastes, in accordance with the facility's industrial wastewater discharge permit issued by Delta Diablo.

In addition, the facility has a bioretention facility that detains and treats storm water. Storm water is detained and treated in the surface reservoir, filtered through plants and a biologically active soil mix, and then it infiltrates into the ground. The bioretention facility contains underdrains as a preventive measure against poor drainage. Underdrains are routed to an outlet that is double valved and connects to CCGS's discharge tunnel to the River. The valves are kept closed and discharges to the River will only occur if the infiltration is inadequate to keep appropriate freeboard in the reservoir.

Gas Supply

Kiewit supplied two natural gas fired dew point heaters, filtration and regulation systems, including fuel gas coalescing filter/separators, in accordance with Siemens fuel gas specification.

Natural gas is supplied by Pacific Gas & Electric Company (PG&E) pursuant to the Power Purchase & Sale Agreement (PPA). The project owner and PG&E entered into a Gas Interconnection and Transportation Agreement pursuant to which PG&E constructed a short interconnection from its Line 400, a backbone gas transmission line, to the CCGS site. Kiewit designed and constructed the gas line from the outlet flange of the gas meter set on the CCGS site to the project.

Electric Interconnection

The project owner connected with the electricity network owned by PG&E and operated by the California Independent System Operator (CAISO). Electricity delivery is made to the PG&E transmission system at PG&E's Contra Costa 230 kV switchyard. The switchyard is adjacent to the MLGS site. The project owner, PG&E and CAISO executed a Large Generator Interconnection Agreement (LGIA) under the CAISO Large Generator Interconnection Process (LGIP) in February 2011.

Auxiliary/Station Service Power

Power for the project's auxiliary loads is provided by two station auxiliary transformers, each supplied from the project switchyard. This electrical arrangement enables the project's load to be served directly from the transmission system when the turbines are not in service.

II FACILITY CLOSURE

The MLGS has a planned operational life of at least 30 years with more than 24 years remaining. During this time, there are at least three circumstances that a facility closure can take place: planned closure, unplanned temporary closure and unplanned permanent closure. Planned closure is defined to occur when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence. Unplanned temporary closure is defined to occur when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency. Unplanned permanent closure is defined to occur if the owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan.

1) Planned Closure

Although the planned life of MLGS is 30 years, the actual life of the facility may vary for economic or other reasons. The removal of the facility from service (decommissioning) when it reaches the end of its useful life ranges from “mothballing,” to the removal of all equipment and appurtenant facilities and subsequent restoration of the site. Future conditions that could affect decommissioning are largely unknown at this time. Such conditions would be presented to the CEC, Contra Costa County, and the City of Antioch when more information is available and decommissioning is imminent.

In order to ensure that decommissioning will be completed in a manner that is environmentally sound, safe, and protects the public health and safety, the owner will submit a proposed facility closure plan to the CEC for review and approval at least 12 months prior to the commencement of closure activities. CEC staff proposed general conditions for decommissioning activities to be included in the facility closure plan and consist of the following:

- Identify any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site.
- Identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project.
- Identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
- Address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

Prior to submittal of the proposed facility closure plan, the owner will organize a meeting with the CEC for the purpose of discussing the specific contents of the plan.

2) Unplanned Temporary Closure

In the event of a temporary closure, security for the facility will be maintained in accordance with the Site Security Plan for the operational phase that was submitted to the CEC on August 22, 2012, under Condition HAZ-8. The CEC as well as other responsible agencies will be notified by telephone, fax or email within 24 hours. If the CEC Compliance Project Manager determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than 12 months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CEC Compliance Project

Manager within 90 days of the CEC Compliance Project Manager's determination (or other period of time agreed to by the CEC Compliance Project Manager).

The Site Security Plan includes the following elements:

- Site security plan description
- Site security operating procedures that includes fencing, lighting, security cameras, gates, parking and site access protocol for visitors and plant contractors
- A protocol for contacting law enforcement and the CEC Compliance Project Manager in the event of suspicious activity or emergency endangering the facility, its employees, its contractors, or the public
- IT security of the facility
- Evacuation procedures
- A protocol for hazardous materials vendors to prepare and implement security plans as per 49 CFR 172.802 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR Part 1572, subparts A and B
- Measures to conduct site personnel background checks, including employee and routine onsite contractors, consistent with state and federal law regarding security and privacy

Depending on the nature and extent of the temporary closure, subsequent activities will depend on whether or not the temporary closure involves a release of hazardous materials. For a temporary closure in which there is the potential for a release of hazardous materials into the environment, procedures would be followed as per Condition HAZ-2:

- Risk Management Plan
- Spill Prevention Control and Countermeasure Plan
- Hazardous Material Business Plan

The Risk Management Plan includes the following elements:

- Site accidental release prevention program and chemical specific prevention steps
- Off-site consequence analysis for the worst-case scenario (WCS) accidental release of aqueous ammonia
- Emergency response actions that have been coordinated with local emergency planning and response agencies

The Spill Prevention Control and Countermeasure Plan includes the following:

- Inventory and location of oil-containing containers and equipment

- Spill prevention measures in place
- Emergency response

The Hazardous Material Business Plan includes the following:

- Business forms required by the certified unified program agency (CUPA)
- Inventory of all hazardous materials, including chemical composition, amount, and location
- Emergency response contingency plan

Once any hazardous material release is contained and cleaned up, temporary closure would proceed as described below for closure in which there is no release of hazardous materials.

A temporary closure not due to spill/release of hazardous materials can result from a number of unforeseen circumstances. This may include conditions such as significant disruptions to major utilities (natural gas, water or electric transmission delivery systems), equipment failure or other factors that may force the units to be shut-down temporarily. Natural disasters that can result in significant damage to the facility (earthquake, flood, or severe winter storms) may also result in temporary shutdown. For these types of temporary closure, additional security will be added as needed. Appropriate procedures will depend on the expected duration of the temporary closure and the impact involved. These procedures will be implemented in compliance with all laws, ordinances, regulations and standards (LORS), appropriate protection of public health, safety, and the environment. All hazardous and nonhazardous wastes will be collected and disposed as described in the Operation Waste Management Plan.

Any temporary shutdown that does not involve facility damage would be kept “as is” and ready for restart when the unexpected cessation of operations event is rectified or ceases to restrict operations.

The facility will maintain an operational insurance coverage during the entire operations of the facility including during any unplanned temporary closure. The owner will perform normal maintenance activities during the entire operations of the facility.

3) Unplanned Permanent Closure

In the event of an unexpected permanent closure of the facility, the appropriate procedures during a temporary closure will be followed. The CEC as well as other responsible agencies will be notified by telephone, fax or email within 24 hours. The project owner shall keep the CEC Compliance Project Manager informed of the status of all closure activities.

A facility closure plan, consistent with the requirements for a planned closure, will be developed and submitted to the CEC Compliance Project Manager within 90 days of the permanent closure or another period of time agreed to by the CEC Compliance Project Manager. This plan will be implemented in compliance with LORS, appropriate protection of public health, safety, and the environment.

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10.0 Complaints, Notices of Violations, Official Warnings, Citations, and Corrective Actions Taken

No Notices of Violations were issued to the facility during 2018.

CUPA issued a Notice to Comply on Dec. 7, 2018. [FAILURE TO AMEND THE SPCC PLAN WITHIN 6 MONTHS:] The SPCC draft-in-progress was subsequently completed on Dec. 20, 2018 and accepted by the CUPA.