

AP - 111

**ANNUAL GW
MONITORING REPORT
(3 of 29)**

2016

WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016

BW-3A		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/8/2016	(1)	None taken - well is DRY							
GAUGE TIME	1245	(2)								
DTB (feet)	52.35	(3)								
Depth to Bottom		(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F.								
DTW (feet)	DRY									
Depth to Water										
DTB - DTW										
Capacity per foot	0.163	WATER APPEARANCE								
2 Well Volumes										
PURGE DATE	NA									
PURGE TIME	NA									
SAMPLE DAY	N/A	Not Applicable								
SAMPLE TIME										

SAMPLE LOG

BW-3B		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/8/2016	(1)	1349	5.99	18.1	79562	51.715	55.56	10.1	-173
GAUGE TIME	1244	(2)	1351	5.09	18.2	480	0.312	0.23	54.7	-32
DTB (feet)	69.40	(3)	1353	5.07	18.2	428	0.278	0.21	55.4	-30
Depth to Bottom		(4)	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F.							
DEDICATED PUMP	Y									
DTW (feet)	33.42									
Depth to Water	35.98									
DTB - DTW	0.163									
Capacity per foot	17.59	WATER APPEARANCE Clear - cloudy with slight yellow tint - no odor detected.								
3 Well Volumes										
PURGE DATE	9/8/2016									
PURGE TIME	1335									
SAMPLE DAY	9/8/2016									
SAMPLE TIME	1355									

SAMPLE LOG

Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Disposable Bailer

Signature:



Cheryl Johnson / Environmental Specialist / Gallup Refinery

**WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2015**

BW-3C		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/8/2016	(1)	1420	7.29	25.7	3180	2.067	1.66	228.8
GAUGE TIME	1246	(2)							20
DTB (feet)		(3)	Did not record remainder of parameters						
Depth to Bottom	154.55								
DEDICATED PUMP	N	(4)	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F.						
DTW (feet)	8.30								
Depth to Water									
DTB - DTW	146.25								
Capacity per foot	0.163								
3 Well Volumes	71.52								
PURGE DATE	9/8/2016								
PURGE TIME	1255		WATER APPEARANCE Clear-cloudy no odor detected.						
SAMPLE DAY	9/8/2016								
SAMPLE TIME	1430								

SAMPLE LOG

Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Signature:



Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016

MW-1		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/7/2016	(1)	1021	8.32	14.6	57855	37.606	38.56	37.1
GAUGE TIME	835	(2)	1023	8.33	14.7	57827	37.588	38.55	29.5
DTB (feet)									
Depth to Bottom	130.83	(3)	1025	8.30	14.8	57884	37.625	38.59	25.0
DEDICATED PUMP	Y	(4)	1027	8.31	14.9	57900	37.635	38.61	22.1
DTW (feet)	7.01	WEATHER CONDITIONS Cloudy, calm, 60-65 deg F.							
Depth to Water	123.82								
DTB - DTW	1.020								
Capacity per foot	378.89								
3 Well Volumes		WATER APPEARANCE Clear - no odor detected.							
PURGE DATE	9/7/2016								
PURGE TIME	840								
SAMPLE DAY	9/7/2016								
SAMPLE TIME	1030								

SAMPLE LOG

Purged water collected in 350 gallon tote and disposed of upstream of the WW treatment Plant.

MW-2		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/7/2016	(1)	1352	5.90	14.8	59064	38.392	39.48	15.4
GAUGE TIME	1047	(2)	1354	5.88	15.0	59103	38.417	39.52	14.2
DTB (feet)									
Depth to Bottom	137.48	(3)	1356	5.89	15.2	59114	38.424	39.53	13.6
DEDICATED PUMP	Y	(4)	1358	5.92	15.4	59102	38.416	39.53	12.8
DTW (feet)	14.10	WEATHER CONDITIONS Clear, slight breeze, 60-65 Deg F.							
Depth to Water	123.38								
DTB - DTW	1.020								
Capacity per foot	377.54								
3 Well Volumes		WATER APPEARANCE Clear - no odor detected.							
PURGE DATE	9/7/2016								
PURGE TIME	1100								
SAMPLE DAY	9/7/2016								
SAMPLE TIME	1400								

SAMPLE LOG

Purged water collected in 350 gallon tote and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

**WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016**

MW-4		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/7/2016	(1)	1730	5.51	13.6	61522	39.989	41.28	52.8
GAUGE TIME	1630	(2)	1732	5.45	13.7	61600	40.079	41.39	33.6
DTB (feet)									
Depth to Bottom	121.72	(3)	1734	5.44	13.8	61740	40.131	41.46	23.9
DEDICATED PUMP	Y	(4)	1736	5.44	14.0	61763	40.146	41.48	18.6
DTW (feet)	7.38	WEATHER CONDITIONS Cloudy, breezy, 70-75 deg F.							
Depth to Water									
DTB - DTW	114.34								
Capacity per foot	1.020								
3 Well Volumes	349.88								
PURGE DATE	9/7/2016	WATER APPEARANCE Clear - no odor detected.							
PURGE TIME	1630								
SAMPLE DAY	9/7/2016								
SAMPLE TIME	1740								

SAMPLE LOG

Purged water collected in 350 gallon tote and disposed of upstream of the WW treatment Plant.

MW-5		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/7/2016	(1)	1533	6.47	13.5	61063	39.691	40.93	433.4
GAUGE TIME	1415	(2)	1535	5.73	13.4	59481	38.663	39.73	90.2
DTB (feet)									
Depth to Bottom	130.83	(3)	1537	5.64	13.5	59338	38.570	39.63	50.7
DEDICATED PUMP	Y	(4)	1539	5.62	13.6	59317	38.556	39.62	33.3
DTW (feet)	13.50	WEATHER CONDITIONS Cloudy, breezy, 70-75 deg F.							
Depth to Water									
DTB - DTW	117.33								
Capacity per foot	0.740								
3 Well Volumes	260.47								
PURGE DATE	9/7/2016	WATER APPEARANCE Clear - no odor detected.							
PURGE TIME	1420								
SAMPLE DAY	9/7/2016								
SAMPLE TIME	1545								

SAMPLE LOG

Purged water collected in 350 gallon tote and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Signature:



Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016

SMW-2		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/9/2016	(1)	1235	5.43	16.0	579730	376.825	1017.92	79.9
GAUGE TIME	1215	(2)	1237	5.14	16.2	579604	376.743	1017.79	49.0
DTB (feet)									
Depth to Bottom	52.80	(3)	1239	5.17	16.6	579105	376.418	1016.46	37.7
DEDICATED PUMP	Y	(4)	1241	5.20	16.8	579615	376.750	1018.59	31.8
DTW (feet)		WEATHER CONDITIONS Partly Cloudy, breezy, 70-75 Deg F.							
Depth to Water	24.84								
DTB - DTW	27.96								
Capacity per foot	0.163								
3 Well Volumes	13.67244								
PURGE DATE	9/9/2016	WATER APPEARANCE Clear - no odor detected.							
PURGE TIME	1220								
SAMPLE DAY	9/9/2016								
SAMPLE TIME	1245								

SAMPLE LOG

Pump lost suction at 7 gallons. Allowed to recharge and collected samples. Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

SMW-4		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/6/2016	(1)	821	7.89	14.1	67059	43.588	45.53	90.6
GAUGE TIME	1431	(2)	823	7.86	14.1	66906	43.489	45.42	59.8
DTB (feet)									
Depth to Bottom	69.68	(3)	825	7.83	14.2	66861	43.460	45.39	45.9
DEDICATED PUMP	Y	(4)	827	7.80	14.2	66891	43.479	45.41	38.0
DTW (feet)		WEATHER CONDITIONS Partly Cloudy, breezy, 90-95 Deg F.							
Depth to Water	29.32								
DTB - DTW	40.36								
Capacity per foot	0.163								
3 Well Volumes	19.74								
PURGE DATE	9/7/2016	WATER APPEARANCE Clear - no odor detected.							
PURGE TIME	800								
SAMPLE DAY	9/7/2016								
SAMPLE TIME	830								

SAMPLE LOG

9/9/16 - Generator failed during purging of well. Stopped with purge. Restarted with purge on 9/7/16 with new generator. Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.
 Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
 Disposable Bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

OW-13		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/15/2016	(1)	1027	7.87	13.34	65592	42.635	44.37	24.1	-64.3
GAUGE TIME	930	(2)	1029	7.86	13.39	65562	42.615	44.35	23.3	-62.7
DTB (feet)										
Depth to Bottom	99.15	(3)	1031	7.85	13.45	65541	42.602	44.33	22.4	-60.7
DEDICATED PUMP	Y	(4)	1033	7.85	13.49	65533	42.596	44.33	22	-58.4
DTW (feet)	21.68	WEATHER CONDITIONS								
Depth to Water	77.47									
DTB - DTW	0.740									
Capacity per foot	171.98									
3 Well Volumes										
PURGE DATE	11/15/2016	WATER APPEARANCE								
PURGE TIME	935									
SAMPLE DAY	11/15/2016									
SAMPLE TIME	1035									
PUMP DEPTH	80 ft									
DTW (feet)										
at end of Purging	NA									

SAMPLE LOG

Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

OW-14		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/15/2016	(1)	911	8.17	13.53	114008	74.105	84.40	94.9	-172.8
GAUGE TIME	900	(2)	913	7.84	13.42	112145	72.894	82.73	59.8	-170.5
DTB (feet)										
Depth to Bottom	46.52	(3)	915	7.67	13.35	111533	72.497	82.17	40.6	-169.5
DEDICATED PUMP	Y	(4)	917	7.56	13.31	111006	72.154	81.70	29.7	-165.9
DTW (feet)	23.28	WEATHER CONDITIONS								
Depth to Water										
DTB - DTW	23.24									
Capacity per foot	0.740									
3 Well Volumes	51.59	Partly cloudy, breezy, 70-75 Deg F.								
PURGE DATE	11/15/2016	WATER APPEARANCE								
PURGE TIME	905									
SAMPLE DAY	11/15/2016									
SAMPLE TIME	920									
PUMP DEPTH	30 ft	Clear, no odor								
DTW (feet)										
at end of Purging	NA									

SAMPLE LOG

Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

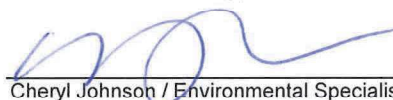
INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Dedicated pumps

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

OW-29		TEST PARAMATERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	11/15/2016	(1)	1130	8.06	13.28	99923	64.950	72.09	93.5
GAUGE TIME	1100	(2)	1132	7.81	13.35	99684	64.794	71.90	55.8
DTB (feet)		(3)	1134	7.69	13.44	99618	64.752	71.86	38.1
Depth to Bottom	51.08	(4)	1136	7.57	13.55	99591	64.734	71.84	28.2
DEDICATED PUMP	Y	WEATHER CONDITIONS Clear, calm							
DTW (feet)									
Depth to Water	18.23								
DTB - DTW	32.85								
Capacity per foot	0.740								
3 Well Volumes	72.93								
PURGE DATE	11/15/2016	WATER APPEARANCE Clear, no odor detected							
PURGE TIME	1104								
SAMPLE DAY	11/15/2016								
SAMPLE TIME	1140								
PUMP DEPTH	NA								
DTW (feet)									
at end of Purging	NA								

SAMPLE LOG

OW-30		TEST PARAMATERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	856	7.90	10.70	103949	67.567	75.11	16.6
GAUGE TIME	820	(2)	858	7.90	10.35	104383	67.849	75.40	14.8
DTB (feet)		(3)	900	8.60	15.48	143942	93.562	112.82	91.5
Depth to Bottom	49.90	(4)	902	8.60	15.48	143942	93.562	112.82	91.5
DEDICATED PUMP	Y	WEATHER CONDITIONS Clear, calm							
DTW (feet)									
Depth to Water	22.75								
DTB - DTW	27.15								
Capacity per foot	0.740								
3 Well Volumes	60.27								
PURGE DATE	11/14/2016	WATER APPEARANCE Clear, no odor detected							
PURGE TIME	825								
SAMPLE DAY	11/14/2016								
SAMPLE TIME	905								
PUMP DEPTH	38 ft								
DTW (feet)									
at end of Purging	NA								

SAMPLE LOG

Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Dedicated pumps

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

OW-1		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/15/2016	(1)	1252	8.08	14.21	70893.000	46.081	48.510	35.7	-34.1
GAUGE TIME	1155	(2)	1254	8.09	14.44	71112.000	46.223	48.700	28	-34.0
DTB (feet)										
Depth to Bottom	94.55	(3)	1256	8.08	14.52	71125.000	46.232	48.710	24.3	-32.7
DEDICATED PUMP	Y	(4)	1258	8.06	14.60	71173.000	46.263	48.750	21.4	-30.7
DTW (feet)	1.72	WEATHER CONDITIONS Clear, calm								
Depth to Water										
DTB - DTW	94.55									
Capacity per foot	0.740									
3 Well Volumes	209.90									
PURGE DATE	11/15/2016	WATER APPEARANCE Clear slightly cloudy - pink								
PURGE TIME	1200									
SAMPLE DAY	11/15/2016									
SAMPLE TIME	1305									
PUMP DEPTH	NA									
DTW (feet)										
at end of Purging	NA									

SAMPLE LOG

OW-10		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/15/2016	(1)	1409	8.28	14.02	177531	115.395	147.43	464	-7.3
GAUGE TIME	1315	(2)	1411	7.75	13.40	174180	113.217	143.57	94.9	-10.0
DTB (feet)										
Depth to Bottom	60.33	(3)	1413	7.60	13.44	173904	113.038	143.28	59.5	-10.5
DEDICATED PUMP	Y	(4)	1415	7.52	13.50	173865	113.012	143.26	41.0	-10.5
DTW (feet)	0.54	Clear, calm								
Depth to Water	59.79									
DTB - DTW	0.740									
Capacity per foot	132.73									
3 Well Volumes										
PURGE DATE	11/15/2016	WATER APPEARANCE								
PURGE TIME	1320									
SAMPLE DAY	11/15/2016									
SAMPLE TIME	1420									
PUMP DEPTH	NA									
DTW (feet)		Clear, no odor detected.								
at end of Purging	NA									

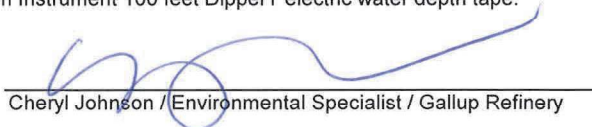
SAMPLE LOG

Purged water collected in 300 gallon tote and disposed of upstream of the WW treatment Plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.
Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
baller.

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

NAPIS-3		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	1330	8.11	19.36	135376	87.994	104.94	33.2	-44.6
GAUGE TIME	1047	(2)	1332	8.07	19.38	135244	87.909	104.81	31.6	-43.7
DTB (feet)										
Depth to Bottom	30.42	(3)	1334	8.04	19.37	135243	87.908	104.81	30.2	-42.8
DTW (feet)	9.11	(4)	1336	8.02	19.33	135363	87.986	104.92	29.0	-41.8
Depth to Water		WEATHER CONDITIONS								
DTB - DTW	21.31									
Capacity per foot	0.163	Clear, slight breeze								
3 Well Volumes	10.42									
PURGE DATE	11/14/2016	WATER APPEARANCE								
PURGE TIME	1106									
SAMPLE DAY	11/14/2016	Clear slight pink to brown/murky at end of bailing								
SAMPLE TIME	1340									
Depth to Product										
Product Layer										

SAMPLE LOG

With new bailer, bailed 10 gallons - allowed well to recharge as water at end of bailing was murky/muddy. Collected purged water in a container and disposed of at the bundle pad.

KA-3		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	1138	7.74	26.60	88384.000	57.450	62.76	25.2	-63.3
GAUGE TIME	1046	(2)	1140	7.65	26.42	88483.000	57.514	62.84	21.8	-58.3
DTB (feet)										
Depth to Bottom	23.20	(3)	1142	7.62	26.26	88347.000	57.426	62.74	19.4	-51.7
DTW (feet)		(4)	1144	7.60	26.07	88299.000	57.395	62.70	18.1	-43.4
Depth to Water	8.28									
DTB - DTW	14.92	WEATHER CONDITIONS								
Capacity per foot	0.163	Clear, calm, 60-65 deg F								
3 Well Volumes	7.30									
PURGE DATE	11/14/2016	WATER APPEARANCE								
PURGE TIME	1055	Clear - slightly cloudy, turned pink at end of bailing								
SAMPLE DAY	11/14/2016									
SAMPLE TIME	1145									
Depth to Product										
Product Layer										

SAMPLE LOG

With new bailer, bailed approx. 7 gallons. Collected purged water in a container and disposed of at the bundle pad. Collected duplicate samples.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Disposable Polyethylene Bailer.

Signature:

Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

NAPIS-1		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	1224	8.10	18.32	96415.000	62.670	69.53	55.9	-21.4
GAUGE TIME	1207	(2)	1226	7.92	18.30	96414.000	62.669	69.52	38.2	-18.1
DTB (FT)		(3)	1228	7.82	18.27	96438.000	62.685	69.54	29.7	-16.2
Depth to Bottom	13.53									
DTW (FT)	6.82									
Depth to Water	6.71									
DTB - DTW	0.163	(4)	1230							
Capacity per foot	3.28									
3 Well Volumes										
PURGE DATE	11/14/2016	WEATHER CONDITIONS								
PURGE TIME	1215									
SAMPLE DAY	11/14/2016	WATER APPEARANCE								
SAMPLE TIME	1231									
Depth to Product		Clear, slight odor								
Product Layer										
		Clear, no odor detected								

SAMPLE LOG

Used new bailer for purging and collecting samples. Purged water collected in a plastic container and disposed of at the bundle pad.

NAPIS-2		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)		7.82	26.21	113547.00	73.806	84.61	29.1	-121.6
GAUGE TIME	1045	(2)		7.72	26.09	113553.00	73.809	84.62	19.5	-114.0
DTB (FT)										
Depth to Bottom	13.61	(3)		7.68	25.95	113438.00	73.735	84.52	15.3	-117.8
DTW (FT)										
Depth to Water	8.20	(4)		7.65	25.79	113330.00	73.664	84.43	12.8	-130.6
DTB - DTW	5.41	WEATHER CONDITIONS								
Capacity per foot	0.163									
3 Well Volumes	2.65	Clear, slight breeze, 50-55 Deg F.								
PURGE DATE	11/14/2016	WATER APPEARANCE								
PURGE TIME	1050									
SAMPLE DAY	11/14/2016	Clear, cloudy, pink end of bailing								
SAMPLE TIME	1135									
Depth to Product										
Product Layer										

SAMPLE LOG

With new bailer, bailed approx 3 gallons. Collected purged water in a container and disposed of at the bundle pad.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Bailer

Disposable Polyethylene Bailer

Signature: _____

Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

OAPIS-1		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)		7.54	16.58	353791	229.964	411.69	69.0	-134.7
GAUGE TIME	1245	(2)		7.42	16.71	353795	229.969	411.64	25.3	-119.5
DTB (feet)	26.00	(3)		7.35	16.85	353923	230.050	411.98	19.1	-112.6
Depth to Bottom										
DTW (feet)	11.44	(4)		7.30	17.00	354103	230.167	412.43	15.2	-107.0
Depth to Water										
DTB - DTW	14.56	WEATHER CONDITIONS Clear, breezy								
Capacity per foot	0.163									
3 Well Volumes	7.12									
PURGE DATE	11/14/2016	WATER APPEARANCE Clear with slight yellow/orange tint, odor detected								
PURGE TIME	1250									
SAMPLE DAY	11/14/2016									
SAMPLE TIME	1305									
Depth to Product										
Product Layer										

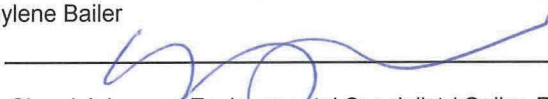
SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in a plastic container and disposed of at the bundle pad.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.
Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
Disposable Polyethylene Bailer

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

GWM-2		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	Not Applicable							
GAUGE TIME	1527	(2)								
DTB (feet)		(3)								
Depth to Bottom	18.81	(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS Clear, breezy								
DTW (feet)										
Depth to Water	DRY									
DTB - DTW										
Capacity per foot	0.163									
2 Well Volumes		WATER APPEARANCE Not Applicable - DRY								
PURGE DATE										
PURGE TIME										
SAMPLE DAY										
SAMPLE TIME										
Depth to Product										
Product Layer										

SAMPLE LOG

GWM-3		TEST PARAMATERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	Not Applicable							
GAUGE TIME	1525	(2)								
DTB (feet)		(3)								
Depth to Bottom	17.80	(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS Clear, breezy								
DTW (feet)										
Depth to Water	DRY									
DTB - DTW										
Capacity per foot	0.163									
2 Well Volumes		WATER APPEARANCE Not Applicable - DRY								
PURGE DATE										
PURGE TIME										
SAMPLE DAY										
SAMPLE TIME										
Depth to Product										
Product Layer										

SAMPLE LOG

INSTRUMENTS USED:

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

Oil Sump LDU		WEATHER CONDITIONS
GAUGE DATE	11/17/2016	Partly cloudy, breezy, 65-70 Deg F
GAUGE TIME	948	WATER APPEARANCE
DTB (feet)	NA	NOTES
Depth to Bottom	NA	
DTW (feet)	DRY	
Depth to Water	NA	
DTB - DTW	NA	
PURGE DATE	NA	No samples collected - dry
PURGE TIME	NA	
SAMPLE DATE		
SAMPLE TIME		

East LDU		WEATHER CONDITIONS
GAUGE DATE	11/17/2016	Ptly cloudy, breezy
GAUGE TIME	945	WATER APPEARANCE
DTB (feet)	NA	oily - yellow - gray - odor
Depth to Bottom	NA	
DTW (feet)	9.10	
Depth to Water	NA	
DTB - DTW	NA	
PURGE DATE	NA	NOTES
PURGE TIME	NA	
SAMPLE DATE	11/17/2016	
SAMPLE TIME	1015	Collected Grab Sample

West LDU		WEATHER CONDITIONS
GAUGE DATE	11/17/2016	Partly cloudy, breezy
GAUGE TIME	947	WATER APPEARANCE
DTB (feet)	NA	oily - yellow - odor
Depth to Bottom	NA	
DTW (feet)	7.30	
Depth to Water	NA	
DTB - DTW	NA	
PURGE DATE	NA	NOTES
PURGE TIME	NA	
SAMPLE DATE	11/17/2016	
SAMPLE TIME	1030	Collected grab sample

INSTRUMENTS USED:

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
 Disposable Polyethylene Bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

STP1-NW		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)	1446	7.47	13.4	373550	242.800	447.73	23.7	-17
GAUGE TIME	1420	(2)	1448	7.47	13.4	373646	242.900	447.93	22.3	-17
DTB (feet)	50.00	(3)	1450	7.48	13.4	373689	242.900	448.04	21.4	-16
Depth to Bottom										
DTW (feet)										
Depth to Water										
DTB - DTW	21.02	(4)	1452	7.47	13.4	373699	242.900	448.10	21.2	-16
Capacity per foot	28.98	WEATHER CONDITIONS								
3 Well Volumes	0.163	Clear, Breezy								
	14.17									
PURGE DATE	11/14/2016	WATER APPEARANCE								
PURGE TIME	1430									
SAMPLE DAY	11/14/2016	Clear, no odor detected								
SAMPLE TIME	1500									
Depth to Product	NONE									
Product Layer										

SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in a plastic container and disposed of at the bundle pad.

STP1-SW		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)
GAUGE DATE	11/14/2016	(1)							
GAUGE TIME	1505	(2)							
DTB (feet)									
Depth to Bottom	29.10	(3)							
DTW (feet)									
Depth to Water	DRY	(4)							
DTB - DTW	N/A								
Capacity per foot	0.163								
3 Well Volumes	N/A		WEATHER CONDITIONS						
			Clear, Breezy						
PURGE DATE			WATER APPEARANCE						
PURGE TIME									
SAMPLE DAY									
SAMPLE TIME									
Depth to Product			Not Applicable - DRY						
Product Layer									

SAMPLE LOG

INSTRUMENTS USED:

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
Disposable Polyethylene Bailer

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

**WESTERN REFINING - GALLUP REFINERY
2016 QUARTERLY INSPECTION**

RW-5 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	11/16/2016	Product Thickness (ft)	0.000	Overcast, breezy
GAUGE TIME	912	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	39.59	Volume of Water Purged (Gallons)	20	WATER APPEARANCE
		PURGE DATE		Clear, slight yellow tint - gray, odor
DTP (feet)	0.00	PURGE TIME		
DTW (feet)	27.40	SAMPLE DAY	11/16/2016	
Depth to Water	12.19	SAMPLE TIME	937	
DTB - DTW				
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	No measurable product layer - bailed 20 gallons - samples collected.

ADDITIONAL NOTES:

Purged water disposed of upstream of the WWTP.

RW-6 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	11/16/2016	Product Thickness (ft)	0.000	Overcast, breezy
GAUGE TIME	915	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	40.90	Volume of Water Purged (Gallons)	20	WATER APPEARANCE
		PURGE DATE		Clear - cloudy - gray - sheen - odor
DTP (feet)	0.00	PURGE TIME		
DTW (feet)	27.72	SAMPLE DAY	11/16/2016	
Depth to Water	13.18	SAMPLE TIME	944	
DTB - DTW				
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	Bailed 20 gallons - samples collected.

ADDITIONAL NOTES:

Purged water disposed of upstream of the WWTP.

INSTRUMENTS USED:

YSI 556 MPS Instrument with flow cell. Used to collect water quality parameters.
 Water Level - Heron Instrument 100 feet DipperT electric water depth tape.
 Submersible bladder pump, Grundfos Redi-flo 2, 2" and an adjustable rate controller.
 5 gallon buckets to catch purge water.
 3 foot disposable bailer.

SIGNATURE: /s/ *Cheryl Johnson* / Environmental Specialist

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

GWM-1		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	11/14/2016	(1)								
GAUGE TIME	1529	(2)	Not required							
DTB (feet)		(3)								
Depth to Bottom	26.20									
DTW (feet)		(4)								
Depth to Water	21.52									
DTB - DTW	4.68	WEATHER CONDITIONS Clear, breezy								
Capacity per foot	0.163									
3 Well Volumes	1.53									
PURGE DATE	N/A	WATER APPEARANCE layer of hydrocarbons - yellow - oily - odor								
PURGE TIME										
SAMPLE DAY	N/A									
SAMPLE TIME										
Depth to Product	21.5									
Product Layer	0.02									

SAMPLE LOG

NO SAMPLES COLLECTED - HYDROCARBON LAYER

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

Water Level - Heron Instrument 100 feet DipperT electric water depth tape.

Disposable Polyethylene Bailer

Signature:



Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
4TH QTR 2016

RW-1 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	11/16/2016	Product Thickness (ft)	3.100	Overcast, breezy
GAUGE TIME	1300	Volume of Product Purged (Gallons)	2.500	
DTB (feet)	43.04	Volume of Water Purged (Gallons)	15	WATER APPEARANCE
Depth to Bottom		PURGE DATE		Yellow with sheen and odor
DTP (feet)		PURGE TIME		
Depth to Product	27.80	SAMPLE DAY	N/A	
DTW (feet)	30.90	SAMPLE TIME	N/A	
Depth to Water				Notes
DTB - DTW	12.14			
WELL PURGING				
START DATE	START TIME	END DATE	END TIME	No samples collected - bailed for product recovery only.

ADDITIONAL NOTES:

Purged water collected in a 55 gallon drum.

RW-2 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	11/16/2016	Product Thickness (ft)	0.000	Overcast, breezy
GAUGE TIME	1130	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	39.80	Volume of Water Purged (Gallons)	25	WATER APPEARANCE
Depth to Bottom		PURGE DATE	11/16/2016	Clear - cloudy - pink/brown - sheen, odor
DTP (feet)		PURGE TIME	1132	
Depth to Product	0.00	SAMPLE DAY	11/16/2016	
DTW (feet)	22.22	SAMPLE TIME	1210	
Depth to Water				Notes
DTB - DTW	17.58			
WELL PURGING				
START DATE	START TIME	END DATE	END TIME	Bailed 25 gallons - samples collected.
N/A				

ADDITIONAL NOTES:

Purged water disposed of upstream of WWTP.

INSTRUMENTS USED:

YSI 556 MPS Instrument with flow cell. Used to collect water quality parameters.
WaterMark oil Water Interface Meter (100 ft), Model 101L/SMOIL, S/N 01-5509
Submersible bladder pump, Grundfos Redi-flo 2, 2" and an adjustable rate controller.
5 gallon buckets to catch purge water.
Dedicated portable pump used for RW-1

SIGNATURE: /s/ Cheryl Johnson / Environmental Specialist



MKTf - FIELD LOGS - 1ST/2ND/3RD/4TH QUARTER 2016

WELL ID	GAUGE DATE	GAUGE TIME	DTP	DTW	DTB	DTB - DTW	CAP/FT	2 WELL VOLTS	SAMPLE DATE	SAMPLE TIME	WEATHER CONDITIONS	WATER APPEARANCE	COMMENTS
MKTF-1	02/24/16	850	ND	5.84	17.44	11.60	0.74	17	02/24/16	1010	Partly cloudy, NE wind, 32°	Clear, odor	
MKTF-2	02/24/16	1026	ND	7.22	20.38	13.16	0.74	19	02/24/16	1135	Partly cloudy, NE wind, 36°	Clear, odor	
MKTF-3	02/29/16	1520	8.30	8.40	18.45	10.05	0.74	15	No samples collected		Oily, brown	Product layer = 0.10 ft	
MKTF-4	02/29/16	756	ND	10.68	22.15	11.47	0.74	17	02/29/16	930	Clear, calm, 34°	Clear to cloudy, odor, sheen	Bailed dry @ 15 gallons - sampled 1 hr later
MKTF-5	02/29/16	844	15.82	16.42	17.76	1.34	0.74	2	No samples collected		Oily, brown	Product layer = 0.60 ft	
MKTF-6	02/29/16	849	18.30	19.27	23.77	4.50	0.74	7	No samples collected		Oily, brown	Product layer = 0.97 ft	
MKTF-7	02/29/16	855	12.65	15.53	17.63	2.10	0.74	3	No samples collected		Oily, brown	Product layer = 2.88 ft	
MKTF-8	02/29/16	1206	13.85	14.60	21.98	7.38	0.74	11	No samples collected		Oily, brown	Product layer = 0.75 ft	
MKTF-9	02/29/16	1235	ND	14.15	22.70	8.55	0.74	13	02/29/16	1330	Cloudy, west wind, 64°	Clear to grey, sheen, odor	
MKTF-10	02/29/16	1115	ND	8.60	16.00	7.40	0.74	11	02/29/16	1700	Cloudy, west wind, 62°	Clear to grey, sheen, odor	Bailed dry @ 5 gallons - sampled 5.5 hrs later
MKTF-11	02/29/16	1000	ND	8.80	18.38	9.58	0.74	14	02/29/16	1050	Clear, west wind, 46°	Clear to dark grey - odor	
MKTF-12	02/25/16	1240	19.80	20.45	25.61	5.16	0.74	8	No samples collected		Oily, brown	Product layer = 0.65 ft	
MKTF-13	02/25/16	1234	14.42	15.29	21.23	5.94	0.74	9	No samples collected		Oily, brown	Product layer = 0.87 ft	
MKTF-14	02/25/16	1228	7.81	8.25	17.46	9.21	0.74	14	No samples collected		Oily, brown	Product layer = 0.44 ft	
MKTF-15	02/29/16	1145	12.23	12.40	19.48	7.08	0.163	2	No samples collected		Oily, brown	Product layer = 0.17 ft	
MKTF-16	02/29/16	1348	ND	9.90	14.10	4.20	0.163	1	02/29/16	1425	Clear, west wind, 64°	Clear	
MKTF-17	02/25/16	1508	ND	11.82	24.60	12.78	0.163	4	02/26/16	930	Clear, calm, 57°	Clear to muddy at bottom	Dry after bailing 3 gallons - sampled next day
MKTF-18	02/26/16	1051	ND	8.34	25.50	17.16	0.163	6	02/26/16	1330	Clear, calm, 50°	Clear to brown, odor	Bailed dry @ 3 gallons - sampled 1.5 hrs later
MKTF-19	02/25/16	1352	ND	12.62	17.29	4.67	0.163	2	02/25/16	1440	Clear, calm, 57°	Clear to brown, odor	
MKTF-20	02/29/16	1435	ND	7.81	9.56	1.75	0.74	3	03/01/16	905	Clear, calm, 40°	Clear to black, odor, sheen	Dry after bailing 2 gallons - sampled next day
MKTF-21	02/29/16	1505	ND	7.24	8.82	1.58	0.74	2	03/01/16	840	Clear, calm, 40°	Clear to black, odor, sheen	Dry after bailing 1 gallon - sampled next day
MKTF-22	02/25/16	1010	ND	26.13	35.24	9.11	0.163	3	02/25/16	1055	Clear, light wind, 39°	Clear to brown, odor	
MKTF-23	02/25/16	858	ND	14.67	20.37	5.70	0.163	2	02/25/16	940	Clear, calm, 34°	Clear, odor, sheen	
MKTF-24	02/22/16	1202	ND	21.34	30.45	9.11	0.163	3	02/02/16	1310	Ptly cloudy, west wind, 54°	Clear to reddish brown	
MKTF-25	02/23/16	1150	ND	10.83	19.40	8.57	0.163	3	02/23/16	1225	Cldy, north wind, snow, 37°	Clear to light pink, odor	
MKTF-26	02/22/16	1350	ND	8.17	17.16	8.99	0.163	3	02/22/16	1435	Ptly cloudy, north wind, 55°	Clear to brown/cloudy	
MKTF-27	02/22/16	1550	ND	7.20	14.71	7.51	0.163	2	02/22/16	1635	Cldy, north wind, snow, 50°	Clear	
MKTF-28	02/23/16	850	ND	5.32	16.14	10.82	0.163	4	02/23/16	935	Cldy, light wind, 34°	Clear	
MKTF-29	02/23/16	1015	ND	1.92	22.80	20.88	0.163	7	02/23/16	1100	Cldy, north wind, snow, 34°	Clear	
MKTF-30	02/23/16	1520	ND	14.40	23.18	8.78	0.163	3	02/23/16	1545	Cloudy, snow, 39°	Clear	
MKTF-31	02/23/16	1250	ND	7.95	22.72	14.77	0.163	5	02/23/16	1345	Cloudy, snow, 36°	Clear	
MKTF-32	02/24/16	1508	ND	14.53	27.75	13.22	0.163	4	02/24/16	1550	Clear, light wind, 51°	Clear	
MKTF-33	02/25/16	1116	ND	23.20	33.20	10.00	0.163	3	02/25/16	1155	Clear, calm, 48°	Clear to brown	
MKTF-34	02/25/16	1547	ND	19.20	27.67	8.47	0.163	3	02/25/16	1630	Clear, calm, 61°	Clear	
MKTF-35	02/26/16	1125	ND	8.40	16.45	8.05	0.163	3	02/26/16	1200	Clear, calm, 48°	Clear to brown, odor	
MKTF-36	02/26/16	1230	7.42	7.48	15.45	7.97	0.163	3	No samples collected		Oily, brown	Product layer = 0.06 ft	
MKTF-37	02/26/16	955	9.00	9.04	24.65	15.61	0.163	5	No samples collected		Oily, brown	Product layer = 0.04 ft	

WELL ID	GAUGE DATE	GAUGE TIME	DTP	DTW	DTB	DTB - DTW	CAP/FT	2 WELL VOLs	SAMPLE DATE	SAMPLE TIME	WEATHER CONDITIONS	WATER APPEARANCE	COMMENTS
MKTF-38	02/29/16	1544	ND	8.63	20.40	11.77	0.163	4	02/29/16	1620	Clear, west wind, 63 ^o	Clear turning to light brown	
MKTF-39	03/03/16	1550	ND	8.50	15.18	6.68	0.163	2	03/03/16	1100	Clear, light wind, 70 ^o	Clear to light gray, odor, sheen	
MKTF-40	02/23/16	1413	ND	13.88	23.60	9.72	0.163	3	02/23/16	1450	Cloudy, snow, 36 ^o	Clear to light pink	
MKTF-41	02/24/16	1610	ND	19.90	40.00	20.10	0.163	7	02/24/16	1650	Calm, clear, 52 ^o	Clear to light brown	
MKTF-42	02/24/16	1357	ND	17.69	33.13	15.44	0.163	5	02/24/16	1450	Clear, light wind, 48 ^o	Clear	
MKTF-43	02/24/16	1304	ND	5.00	15.42	10.42	0.163	3	02/24/16	1340	Clear, calm, 40 ^o	Clear	
MKTF-44	02/24/16	1205	ND	28.74	51.00	22.26	0.163	7	02/24/16	1245	Clear, calm, 40 ^o	Clear to light pink	
MKTF-45	02/26/16	1240	13.39	13.57	30.23	16.66	0.74	25	No samples collected			Oily, brown	Product layer = 0.18 ft

ODOR

PRODUCT

0.74 = 4" 0.163 = 2"

INSTRUMENTS USED:

YSI 556 MPS Instrument for water quality parameters
Water Mark oil-water Interface Meter, Model H01L/S01L, (100 ft)
Disposable Bailers, 2" and 3"

SIGNATURE: _____
Tracy Payne / Disorbo

MKTf - FIELD LOGS - 1ST/2ND/3RD/4TH QUARTER 2016

WELL ID	GAUGE DATE	GAUGE TIME	DTP	DTW	DTB	DTB - DTW	CAP/FT	3 WELL VOLS	SAMPLE DATE	SAMPLE TIME	WEATHER CONDITIONS	WATER APPEARANCE	COMMENTS
MKTf-1	06/10/16	900	8.18	7.02	17.44	10.42	0.74	23			No samples collected	Oily, brown	Product Layer = 1.16 ft
MKTf-2	06/10/16	910	ND	8.09	20.38	12.29	0.74	27	06/10/16	1450	clear, calm	clear-cloudy-gray-sheen-odor	Bailed 20 gals - sampled 4 hrs later
MKTf-3	06/09/16	1018	7.55	11.83	18.45	6.62	0.74	15			No samples collected	Oily, clear	Product layer = 4.82 ft
MKTf-4	06/09/16	723	ND	10.30	22.16	11.86	0.74	26	06/09/16	1305	Clear, calm, 55°	Cloudy, grey, odor	Bailed dry @ 16 gallons - sampled 5.5 hr later
MKTf-5	06/09/16	1008	15.34	15.87	17.77	1.90	0.74	4			No samples collected	Oily, brown	Product layer = 0.53 ft
MKTf-6	06/09/16	1003	18.02	18.96	23.76	4.80	0.74	11			No samples collected	Oily, brown	Product layer = 0.94 ft
MKTf-7	06/09/16	959	12.01	14.60	17.63	3.03	0.74	7			No samples collected	Oily, brown	Product layer = 2.59 ft
MKTf-8	06/09/16	954	13.48	14.18	21.99	7.81	0.74	17			No samples collected	Oily, brown	Product layer = 0.70 ft
MKTf-9	06/09/16	903	ND	14.15	22.70	8.55	0.74	19	06/09/16	1715	Clear, calm, 75°	Cloudy, dk grey, odor	Bailed dry @ 16 gallons - sampled 8 hrs later
MKTf-10	06/09/16	837	ND	8.20	16.00	7.80	0.74	17	06/09/16	1640	Clear, calm, 68°	Cloudy, dk grey, odor	Bailed dry @ 6.5 gallons - sampled 8 hrs later
MKTf-11	06/09/16	759	ND	8.66	18.40	9.74	0.74	22	06/09/16	1610	Clear, calm, 61°	Cloudy, black, odor	Bailed 20 gallons - sampled 8 hrs later
MKTf-12	06/10/16	1130	18.23	19.55	25.61	6.06	0.74	13			No samples collected	Oily, brown	Product layer = 1.32 ft
MKTf-13	06/10/16	1134	12.99	14.19	21.23	7.04	0.74	16			No samples collected	Oily, brown	Product layer = 1.2 ft
MKTf-14	06/10/16	1140	9.46	7.13	17.46	10.33	0.74	23			No samples collected	Oily, brown	Product layer = 2.33 ft
MKTf-15	06/09/16	944	12.60	12.82	19.48	6.66	0.163	3			No samples collected	Oily, brown	Product layer = 0.22 ft
MKTf-16	06/08/16	1510	ND	9.58	14.10	4.52	0.163	2	06/09/16	1215	Cloudy, west wind, 80°	Cloudy with odor	Dry after bailing 2.5 gallons - sampled next day
MKTf-17	06/10/16	920	ND	11.30	24.68	13.38	0.163	7	06/10/16	1325	Clear, calm, 88°	Clear to muddy at bottom	Bailed dry @ 2.5 gallons - sampled 4 hrs later
MKTf-18	06/10/16	1000	ND	11.85	25.66	13.81	0.163	7	06/10/16	1450	Clear, calm, 84°	Clear to lt brown, no odor	Bailed dry @ 2.5 gallons - sampled 4.5 hrs later
MKTf-19	06/10/16	850	ND	11.90	17.45	5.55	0.163	3	06/10/16	1210	Clear, calm, 88°	Clear to brown, odor	Bailed 2.75 gallons - sampled 3 hrs later
MKTf-20	06/08/16	1425	ND	7.23	9.55	2.32	0.74	5	06/09/16	1130	Clear, west wind, 82°	Clear to black, odor	Dry after bailing 2.5 gallons - sampled next day
MKTf-21	06/08/16	1450	ND	6.98	8.80	1.82	0.74	4	06/09/16	1045	Clear, west wind, 82°	Clear to black, odor	Dry after bailing 1.25 gallons - sampled next day
MKTf-22	06/10/16	1025	ND	26.06	35.24	9.18	0.163	4	06/10/16	1320	clear, slight breeze	clear-pink-brown	Bailed 4 gals - muddy - allowed to recharge
MKTf-23	06/10/16	1100	ND	14.64	20.37	5.73	0.163	3	06/10/16	1115	clear, slight breeze	Clear, odor, sheen	
MKTf-24	06/08/16	1430	ND	21.73	30.45	8.72	0.163	4	06/08/16	1500	ptly cloudy, breezy	clear-cloudy-pink-brown	
MKTf-25	06/09/16	746	ND	11.22	19.40	8.18	0.163	4	06/09/16	755	Clear, calm	clear-cloudy-pink-brown-odor	
MKTf-26	06/09/16	730	ND	9.60	17.16	7.56	0.163	4	06/09/16	745	Clear, calm	clear-cloudy-brown	
MKTf-27	06/08/16	1400	ND	7.51	14.71	7.20	0.163	4	06/08/16	1418	overcast, breezy	clear-cloudy	
MKTf-28	06/08/16	1325	ND	5.28	16.14	10.86	0.163	5	06/08/16	1345	overcast, breezy	Clear	
MKTf-29	06/09/16	1030	ND	2.69	22.80	20.11	0.163	10	06/09/16	1052	ptly cloudy, breezy	clear-cloudy	
MKTf-30	06/09/16	1000	ND	14.01	23.18	9.17	0.163	4	06/09/16	1113	ptly cloudy, breezy	Clear	Bailed 5 gals - muddy - allowed to recharge
MKTf-31	06/09/16	830	ND	7.75	22.72	14.97	0.163	7	06/09/16	846	clear, calm	clear - pink	
MKTf-32	06/09/16	1403	ND	14.31	27.75	13.44	0.163	7	06/09/16	1420	cldy, breezy, rain	clear-cloudy-pink	
MKTf-33	06/10/16	957	ND	23.29	33.20	9.91	0.163	5	06/10/16	1300	clear, slight breeze	clear-pink-brown	Bailed 5 gal - sampled 2 hrs later
MKTf-34	06/10/16	940	ND	18.60	27.70	9.10	0.163	4	06/10/16	1400	Clear, light wind, 84°	Clear	Bailed dry @ 4 gallons - sampled 4.5 hrs later
MKTf-35	06/10/16	1020	ND	7.37	16.49	9.12	0.163	4	06/10/16	1545	Clear, light wind, 85°	Clear to grey, no odor	Bailed 4.5 gallons - sampled 5 hrs later
MKTf-36	06/10/16	1230	6.78	6.80	15.45	8.65	0.163	4			No samples collected	Oily, brown	Product layer = 0.02 ft
MKTf-37	06/10/16	955	8.21	8.23	24.63	16.40	0.163	8			No samples collected	Oily, brown	Product layer = 0.02 ft
MKTf-38	06/08/16	1203	ND	8.43	20.29	11.86	0.163	6	06/08/16	1300	Ptly cloudy, west wind, 80°	Cloudy with odor	Bailed 6 gallons

WELL ID	GAUGE DATE	GAUGE TIME	DTP	DTW	DTB	DTB - DTW	CAP/FT	3 WELL VOLs	SAMPLE DATE	SAMPLE TIME	WEATHER CONDITIONS	WATER APPEARANCE	COMMENTS
MKTF-39	06/08/16	1610	ND	8.33	15.18	6.85	0.163	3	06/08/16	1640	Cloudy, light rain, 80°	Cloudy, grey, odor	Bailed 3.5 gallons
MKTF-40	06/09/16	930	ND	13.31	23.60	10.29	0.163	5	06/09/16	950	clear, slight breeze	Clear - pink	
MKTF-41	06/09/16	1437	ND	19.65	40.00	20.35	0.163	10	06/09/16	1506	Calm, clear, 52°	clear-brown	
MKTF-42	06/09/16	1520	ND	17.30	33.13	15.83	0.163	8	06/09/16	1546	clear, breezy, rain	clear -orange tint - sheen	
MKTF-43	06/09/16	1605	ND	3.67	15.42	11.75	0.163	6	06/09/16	1420	cldy, breezy, rain	Clear	
MKTF-44	06/09/16	1240	ND	27.83	51.00	23.17	0.163	11	06/09/16	1342	cldy, breezy, rain	clear - pink	
MKTF-45	06/10/16	1045	12.48	12.80	30.32	17.52	0.74	39	No samples collected			Oily, brown	Product layer = 0.32 ft

ODOR

PRODUCT

NEW

0.74 = 4" 0.163 = 2"

INSTRUMENTS USED:

YSI 556 MPS Instrument for water quality parameters

Water Mark oil-water Interface Meter, Model H01L/S01L, (100 ft)

Disposable Bailers, 2" and 3"

SIGNATURE: _____

Cheryl Johnson / Environmental Specialist / Western-Gallup

Tracy Pane / Disorbo

2.76
5

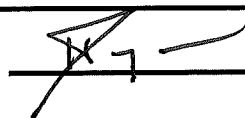
WESTERN REFINING - GALLUP REFINERY
THIRD QUARTER 2016

WELL ID		TEST PARAMETERS								
MKTF-37		Volumes	TIME	pH	Temperature Degrees C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mv)
GAUGE DATE	9.12.16	Initial	1624	7.12	19.7	1557	—	—	17.1	-1460
GAUGE TIME	1615	1	1627	7.06	20.3	1692	—	—	14.7	-158.5
DHC (FEET)	ND	2	1629	7.13	19.7	1688	—	—	18.7	-162.8
DTW (FEET)	7.65	3	1631	7.26	18.2	1579	—	—	18.6	-161.3
DTB (FEET)	24.62	4	1633	7.21	19.0	1575	—	—	10.1	-159.2
DTB - DTW	16.97	5	BAILED 7 GALLONS - DISCONTINUED DUE							
CAPACITY PER FOOT	0.74 - 4"	6	TO THE DETECTION OF PSH IN BAILER AND FLOATING							
	0.163 - 2"									
PURGING DATA										
3 WELL VOLUMES		WEATHER CONDITIONS:								
		CLOUDY, WEST WIND, 75°								
PURGE DATE		WATER APPEARANCE / ODOR:								
		CLEAR, ODOR, SHEEN								
END OF PURGE TIME		COMMENTS:								
PURGE AMOUNT										
DTW (FEET)										
SAMPLING DATA										
SAMPLE DATE		WEATHER CONDITIONS:								
DTW (FEET)		WATER APPEARANCE / ODOR:								
SAMPLE TIME		COMMENTS:								
SAMPLE LOG										
SAMPLE ID	TIME	CONTAINER TYPE	NUMBER OF CONTAINERS				PRESERVATIVE			
INSTRUMENTS USED		GEOTECH INTERFACE PROBE								
		YSI PRODS								

COMPLETED BY:

TRACY PAYNE

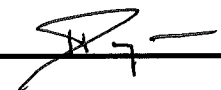
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WESTERN REFINING - GALLUP REFINERY
THIRD QUARTER 2016

WELL ID		TEST PARAMETERS								
		Volumes	TIME	pH	Temperature Degrees C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mv)
MKTF-36										
GAUGE DATE	9.13.16	Initial								
GAUGE TIME	1112	1								
DHC (FEET)	6.54	2	NO SAMPLES WERE COLLECTED 0.01' OF HYDROCARBON DETECTED IN WELL LIGHT BROWN							
DTW (FEET)	6.55	3								
DTB (FEET)	15.46	4								
DTB - DTW	NA	5								
CAPACITY PER FOOT	0.74 - 4"	6								
	0.163 - 2"									
PURGING DATA										
3 WELL VOLUMES		WEATHER CONDITIONS:								
PURGE DATE		WATER APPEARANCE / ODOR:								
END OF PURGE TIME		COMMENTS:								
PURGE AMOUNT										
DTW (FEET)										
SAMPLING DATA										
SAMPLE DATE		WEATHER CONDITIONS:								
DTW (FEET)		WATER APPEARANCE / ODOR:								
SAMPLE TIME		COMMENTS:								
SAMPLE LOG										
SAMPLE ID	TIME	CONTAINER TYPE	NUMBER OF CONTAINERS				PRESERVATIVE			
INSTRUMENTS USED		GEOTECH INTERFACE PROBE								

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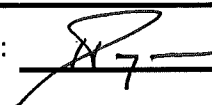
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WESTERN REFINING - GALLUP REFINERY
THIRD QUARTER 2016

WELL ID		TEST PARAMETERS								
		Volumes	TIME	pH	Temperature Degrees C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mv)
MKTF-45										
GAUGE DATE	9.13.16	Initial								
GAUGE TIME	1115	1								
DHC (FEET)	11.95	2								
DTW (FEET)	12.40	3								
DTB (FEET)	30.32	4								
DTB - DTW	NA	5								
CAPACITY PER FOOT	0.74 - 4"	6								
	0.163 - 2"									
PURGING DATA										
3 WELL VOLUMES		WEATHER CONDITIONS:								
PURGE DATE		WATER APPEARANCE / ODOR:								
END OF PURGE TIME		COMMENTS:								
PURGE AMOUNT										
DTW (FEET)										
SAMPLING DATA										
SAMPLE DATE		WEATHER CONDITIONS:								
DTW (FEET)		WATER APPEARANCE / ODOR:								
SAMPLE TIME		COMMENTS:								
SAMPLE LOG										
SAMPLE ID	TIME	CONTAINER TYPE	NUMBER OF CONTAINERS				PRESERVATIVE			
INSTRUMENTS USED		GEOTECH INTERFACE PROBE								

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SIGNATURE: _____



L. 99

WESTERN REFINING - GALLUP REFINERY
THIRD QUARTER 2016

WELL ID		TEST PARAMETERS								
MKTF-17		Volumes	TIME	pH	Temperature Degrees C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mv)
GAUGE DATE	9.12.16	Initial	1325	6.94	18.0	1590	—	—	22.4	-96.6
GAUGE TIME	1315	1	1328	7.05	15.9	1589	—	—	17.4	-118.1
DHC (FEET)	ND	2	1331	7.03	14.7	1591	—	—	15.7	-117.1
DTW (FEET)	12.40	3	1333	BAILED DRY @ 2 GALLONS						
DTB (FEET)	24.62	4								
DTB - DTW	12.22	5								
CAPACITY PER FOOT	0.74 - 4"	6								
	0.163 - 2"									
PURGING DATA										
3 WELL VOLUMES	5.97	WEATHER CONDITIONS: PARTLY CLOUDY, STRONG WEST WIND, 75°								
PURGE DATE	9.12.16	WATER APPEARANCE / ODOR: GREY, ODOR								
END OF PURGE TIME	1333	COMMENTS:								
PURGE AMOUNT	2 GALS									
DTW (FEET)	24.25									
SAMPLING DATA										
SAMPLE DATE	9.13.16	WEATHER CONDITIONS: CLEAR CALM 54°								
DTW (FEET)	12.55	WATER APPEARANCE / ODOR: CLEAR, ODOR, SA								
SAMPLE TIME	0815	COMMENTS:								
SAMPLE LOG										
SAMPLE ID	TIME	CONTAINER TYPE	NUMBER OF CONTAINERS				PRESERVATIVE			
MKTF-17	0815	40 ML VOA	6				HCL			
		1 L AMBER	2				NEAT			
		250 ML AMBER	1				NEAT			
		500 ML PLASTIC	1				HNO ₃			
		125 ML PLASTIC	1				HNO ₃			
		125 ML PLASTIC	1				H ₂ SO ₄			
		500 ML PLASTIC	1				NEAT			
INSTRUMENTS USED		GEOTECH INTERFACE PROBE YSI PRO DSS								

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L.03

WESTERN REFINING - GALLUP REFINERY
THIRD QUARTER 2016

WELL ID		TEST PARAMETERS								
MKTF-19		Volumes	TIME	pH	Temperature Degrees C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mv)
GAUGE DATE	9.12.16	Initial	1357	6.91	17.8	1974	—	—	13.2	-131.7
GAUGE TIME	1350	1	1358	6.98	16.8	2013	—	—	14.8	-133.4
DHC (FEET)	ND	2	1400	7.00	16.2	2013	—	—	12.5	-128.0
DTW (FEET)	11.25	3	1402	7.02	15.9	2012	—	—	16.5	-131.4
DTB (FEET)	17.60	4	1403	7.07	15.6	2010	—	—	16.5	-127.4
DTB - DTW	6.35	5	1405	7.04	15.4	2009	—	—	12.4	-126.5
CAPACITY PER FOOT	0.74 - 4"	6	1407	7.10	15.2	2010	—	—	13.5	-125.7
	0.163 - 2"									
PURGING DATA										
3 WELL VOLUMES	3.11	WEATHER CONDITIONS: CLOUDY, STRONG WEST WIND, 75°								
PURGE DATE	9.12.16	WATER APPEARANCE / ODOR: BROWN, ODOR, SHEEN								
END OF PURGE TIME	1407	COMMENTS:								
PURGE AMOUNT	3.25 GALS									
DTW (FEET)	14.21									
SAMPLING DATA										
SAMPLE DATE	9.13.16	WEATHER CONDITIONS: CLEAR, CALM 54°								
DTW (FEET)	11.30	WATER APPEARANCE / ODOR: CLEAR → PINK-BROWN, ODOR								
SAMPLE TIME	0845	COMMENTS:								
SAMPLE LOG										
SAMPLE ID	TIME	CONTAINER TYPE	NUMBER OF CONTAINERS				PRESERVATIVE			
MKTF-19	0845	40 ML VOA	6				HCL			
		1 L AMBER	1				NEAT			
		250 ML AMBER	1				NEAT			
		500 ML PLASTIC	1				HNO ₃			
		125 ML PLASTIC	1				HNO ₃			
		125 ML PLASTIC	1				H ₂ SO ₄			
		500 ML PLASTIC	1				NEAT			
INSTRUMENTS USED		GEOTECH INTERFACE PROBE YSI PRO DSS								

COMPLETED BY: TRACY PAYNESIGNATURE: 