

AP - 111

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

2016

**WESTERN REFINING - GALLUP REFINERY
2ND 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	6/7/2016	(1)										
GAUGE TIME	1131	(2)										
DTB (feet)		(3)										
Depth to Bottom	18.81	(4)										
DEDICATED PUMP	N	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F										
DTW (feet)												
Depth to Water	DRY											
DTB - DTW												
Capacity per foot 2 Well Volumes	0.163											
PURGE DATE		WATER APPEARANCE No water detected										
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	6/7/2016	(1)										
GAUGE TIME	1130	(2)										
DTB (feet)		(3)										
Depth to Bottom	17.80	(4)										
DEDICATED PUMP	N	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F										
DTW (feet)												
Depth to Water	DRY											
DTB - DTW												
Capacity per foot 2 Well Volumes	0.163											
PURGE DATE		WATER APPEARANCE No water detected										
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
2ND QTR 2016

GWM-1		TEST PARAMATERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)
GAUGE DATE	6/7/2016	(1)							
GAUGE TIME	1132	(2)							
DTB (feet)									
Depth to Bottom	26.20	(3)							
DTW (feet)									
Depth to Water	21.39	(4)							
DTB - DTW	4.81	WEATHER CONDITIONS Partly cloudy, breezy, 75-80 Deg F							
Capacity per foot	0.163								
3 Well Volumes	1.57								
PURGE DATE		WATER APPEARANCE Dark brown oily, odor							
PURGE TIME									
SAMPLE DAY									
SAMPLE TIME									
Depth to Product	21.36								
Product Layer	0.03								

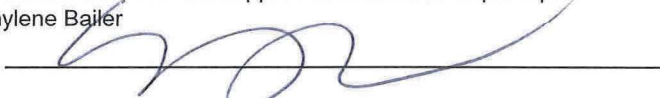
SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in a plastic container and disposed of at the bundle pad.
NO SAMPLES COLLECTED

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
2ND QTR 2016

Oil Sump LDU		WEATHER CONDITIONS
GAUGE DATE	6/7/2016	Partly cloudy, breezy, 65-70 Deg F
GAUGE TIME	1342	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		

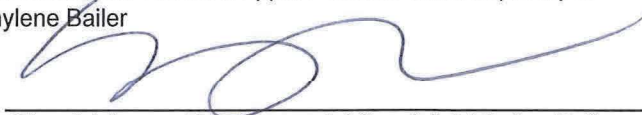
East LDU		WEATHER CONDITIONS
GAUGE DATE	6/7/2016	Partly cloudy, breezy, 65-70 Deg F
GAUGE TIME	1341	WATER APPEARANCE
DTB (feet)	NA	gray, odor
Depth to Bottom	NA	NOTES
DTW (feet)	4.63	
Depth to Water	NA	
DTB - DTW	NA	
PURGE DATE	NA	
PURGE TIME	NA	Collected Grab Sample
SAMPLE DATE	6/7/2016	
SAMPLE TIME	1400	

West LDU		WEATHER CONDITIONS
GAUGE DATE	6/7/2016	Partly cloudy, breezy, 65-70 Deg F
GAUGE TIME	1340	WATER APPEARANCE
DTB (feet)	NA	Yellow tint - odor
Depth to Bottom	NA	NOTES
DTW (feet)	6.53	
Depth to Water	NA	
DTB - DTW	NA	
PURGE DATE	NA	
PURGE TIME	NA	Collected grab sample
SAMPLE DATE	6/7/2016	
SAMPLE TIME	1343	

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-1 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	6/8/2016	Product Thickness (ft)	3.820	Rain showers
		Volume of Product Purged (Gallons)	3.500	
GAUGE TIME	1240			
DTB (feet)		Volume of Water Purged (Gallons)	28	WATER APPEARANCE
Depth to Bottom	43.04			
		PURGE DATE		Clear to yellow with sheen and odor
DTP (feet)				
Depth to Product	27.98	PURGE TIME		
DTW (feet)				
Depth to Water	31.80	SAMPLE DAY	N/A	
DTB - DTW	11.24	SAMPLE TIME	N/A	
WELL PURGING				Notes
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	6/8/2016	Product Thickness (ft)	0.000	Clear, calm
		Volume of Product Purged (Gallons)	N/A	
GAUGE TIME	850			
DTB (feet)		Volume of Water Purged (Gallons)	26	WATER APPEARANCE
Depth to Bottom	39.80			
		PURGE DATE	N/A	Clear - cloudy - brown at end of purge
DTP (feet)				
Depth to Product	0.00	PURGE TIME	N/A	
DTW (feet)				
Depth to Water	22.31	SAMPLE DAY	6/8/2016	
DTB - DTW	17.49	SAMPLE TIME	920	
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	Bailed 26 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/  / Environmental Specialist

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

RW-5 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	6/7/2016	Product Thickness (ft)	0.000	Ptly cloudy, breezy
		Volume of Product Purged (Gallons)	N/A	
GAUGE TIME	1547			
DTB (feet)		Volume of Water Purged (Gallons)	17	WATER APPEARANCE
Depth to Bottom	39.59			
		PURGE DATE		Clear - cloudy - gray - sheen - odor. No measurable layer.
DTP (feet)		PURGE TIME		
Depth to Product	0.00			
DTW (feet)		SAMPLE DAY	6/7/2016	
Depth to Water	28.22	SAMPLE TIME	1605	
DTB - DTW	11.37			
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	No measurable product layer - bailed 17 gallons - samples collected.

ADDITIONAL NOTES:

Purged water disposed of upstream of the WWTP.

RW-6 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	6/7/2016	Product Thickness (ft)	0.000	Ptly cloudy, breezy
		Volume of Product Purged (Gallons)	N/A	
GAUGE TIME	1545			
DTB (feet)		Volume of Water Purged (Gallons)	18	WATER APPEARANCE
Depth to Bottom	40.90			
		PURGE DATE		Clear - cloudy - sheen - odor
DTP (feet)		PURGE TIME		
Depth to Product	0.00			
DTW (feet)		SAMPLE DAY	6/7/2016	
Depth to Water	28.24	SAMPLE TIME	1630	
DTB - DTW	12.66			
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	Bailed 18 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
2ND QTR 2016

OW-13		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	6/6/2016	(1)	1337	8.10	14.09	64.850	42.150	43.83	57.6	-21.9
GAUGE TIME	1245	(2)	1339	8.07	14.50	64.940	42.210	43.93	32.8	-17.7
DTB (feet)										
Depth to Bottom	99.15	(3)	1341	7.96	14.53	65.260	42.420	44.20	24.6	-1.4
DEDICATED PUMP	Y	(4)	1343	7.93	15.05	65.410	42.520	44.33	20.8	9.1
DTW (feet)	21.45	WEATHER CONDITIONS Overcast, breezy, 80-85 Deg F.								
Depth to Water	77.70									
DTB - DTW	0.740									
Capacity per foot	172.49									
3 Well Volumes		WATER APPEARANCE Clear, no odor								
PURGE DATE	6/6/2016									
PURGE TIME										
SAMPLE DAY	6/6/2016									
SAMPLE TIME	1345									
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	6/6/2016	(1)								
GAUGE TIME	815	(2)	Did not save results on the meter.							
DTB (feet)		(3)								
Depth to Bottom	46.52	(4)								
DEDICATED PUMP	Y	WEATHER CONDITIONS								
DTW (feet)	23.18									
Depth to Water	23.34									
DTB - DTW	0.740									
Capacity per foot	51.81	Partly cloudy, breezy, 70-75 Deg F.								
3 Well Volumes										
PURGE DATE	6/6/2016									
PURGE TIME										
SAMPLE DAY	6/6/2016									
SAMPLE TIME	845	WATER APPEARANCE								
PUMP DEPTH	30 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
2ND QTR 2016**

OW-29		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	6/6/2016	(1)	1024	7.01	13.88	78.040	64.400	71.44	56.7
GAUGE TIME	910	(2)	1026	7.03	14.17	78.580	64.390	71.47	24.8
DTB (feet)		(3)	1028	7.03	14.47	79.260	64.480	71.62	14.8
Depth to Bottom	51.08	(4)	1030	7.03	14.83	79.960	64.500	71.69	11.3
DEDICATED PUMP	Y	WEATHER CONDITIONS Partly cloudy, breezy 70-75 Deg F.							
DTW (feet)									
Depth to Water	18.16								
DTB - DTW	32.92								
Capacity per foot	0.740								
3 Well Volumes	73.08								
PURGE DATE	6/6/2016	WATER APPEARANCE Clear, no odor detected; end of bailing - water had slight brownish tint							
PURGE TIME									
SAMPLE DAY	6/6/2016								
SAMPLE TIME	1030								
PUMP DEPTH	NA								
DTW (feet)									
at end of Purging	NA								

SAMPLE LOG

Pump lost suction at 36 gallons - allowed to recharge - purged a total of 48 gallons. Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

OW-30		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	6/6/2016	(1)	1104	7.08	13.26	79.280	66.430	74.03	66.4
GAUGE TIME	1045	(2)	1103	7.01	13.51	79.830	66.480	74.13	33.9
DTB (feet)		(3)	1105	6.97	13.83	80.540	66.550	74.27	23.8
Depth to Bottom	49.90	(4)							-10.4
DEDICATED PUMP	Y	WEATHER CONDITIONS Partly cloudy, breezy, 70-75 Deg F.							
DTW (feet)									
Depth to Water	22.64								
DTB - DTW	27.26								
Capacity per foot	0.740								
3 Well Volumes	60.52								
PURGE DATE	6/6/2016	WATER APPEARANCE Clear, No odor detected							
PURGE TIME									
SAMPLE DAY	6/6/2016								
SAMPLE TIME	1110								
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
2ND 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	6/7/2016	(1)								
GAUGE TIME	1415	(2)								
DTB (feet)		(3)								
Depth to Bottom	50.00	(4)								
DTW (feet)			WEATHER CONDITIONS							
Depth to Water	20.89									
DTB - DTW	29.11									
Capacity per foot	0.163									
3 Well Volumes	14.23		Partly cloudy, breezy							
PURGE DATE	6/7/2016									
PURGE TIME										
SAMPLE DAY	6/7/2016									
SAMPLE TIME	1500		WATER APPEARANCE							
Depth to Product	NONE									
Product Layer			Clear to cloudy, no odor detected							

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 (%)	ORP (mV)
GAUGE DATE	6/7/2016	(1)								
GAUGE TIME	1505	(2)								
DTB (feet)		(3)								
Depth to Bottom	29.10	(4)								
DTW (feet)			WEATHER CONDITIONS							
Depth to Water	DRY									
DTB - DTW	N/A									
Capacity per foot	0.163									
3 Well Volumes	N/A		WATER APPEARANCE							
PURGE DATE										
PURGE TIME										
SAMPLE DAY										
SAMPLE TIME			No water detected							
Depth to Product										
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
3RD QTR/ANNUAL 2016

OW-1		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/6/2016	(1)	1244	6.85	15.23	71773	46.653	49.260	27	-18.8
GAUGE TIME	815	(2)	1246	6.77	15.35	71762	46.645	49.250	60	-14.6
DTB (feet)	94.55 Y FULL 94.55 0.740 209.90	(3)	1248	6.68	15.54	71667	46.583	49.190	47.7	-8.3
Depth to Bottom		(4)	1250	6.63	15.67	71776	46.654	19.280	42.4	-4.5
DEDICATED PUMP		WEATHER CONDITIONS Clear, calm 55-60 deg F								
DTW (feet)										
Depth to Water										
DTB - DTW										
Capacity per foot		WATER APPEARANCE Clear, no odor - slight brownish tint at end of purge.								
3 Well Volumes										
PURGE DATE										
PURGE TIME										
SAMPLE DAY	9/6/2016									
SAMPLE TIME	1300									

SAMPLE LOG

Water level full (to top of casing). Pump lost suction at 65 gallons - stopped at 9am. Allowed to recharge - restarted with purge at 950 - lost suction again after 20 gallons, shut down pump and allowed to recharge. Came back at 1300 hours to collect sample. Purged water collected in 55 gallon drums and disposed of upstream of the WWT plant.

OW-10		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/6/2016	(1)	1132	7.39	14.64	209077	135.9	184.24	329	5.1
GAUGE TIME	1030	(2)	1134	6.53	13.46	212529	138.14	187.94	83.5	-7.3
DTB (feet)	60.33 Y	(3)	1136	6.33	13.63	212873	138.37	188.45	46.7	-7.1
Depth to Bottom		(4)	1138							
DEDICATED PUMP		WEATHER CONDITIONS Overcast, breezy, 65-70 deg F.								
DTW (feet)										
Depth to Water										
DTB - DTW										
Capacity per foot										
3 Well Volumes	133.09	WATER APPEARANCE Clear, no odor detected.								
PURGE DATE	9/6/2016									
PURGE TIME	1032									
SAMPLE DAY	9/6/2016									
SAMPLE TIME	1140									

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.
bailer.

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016

OW-11		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/9/2016	(1)	1427	12.26	16.01	2675	1.739	1.39	17.3	-375.3
GAUGE TIME	1340	(2)	1429	12.17	16.28	2676	1.739	1.39	16.9	-357.3
DTB (feet)										
Depth to Bottom	65.79	(3)	1431	12.12	16.51	2678	1.741	1.39	16.6	-351.4
DEDICATED PUMP	N	(4)	1433	12.12	16.90	2671	1.736	1.39	16.2	-360.0
DTW (feet)	18.79	WEATHER CONDITIONS								
Depth to Water										
DTB - DTW	47.00									
Capacity per foot	0.740									
3 Well Volumes	104.34	Clear, calm, 65-70 deg								
PURGE DATE	9/9/2016									
PURGE TIME	1345									
SAMPLE DAY	9/9/2016									
SAMPLE TIME	1435									
		WATER APPEARANCE								
		Clear, no odor								

SAMPLE LOG

Purged approximately 110 gallons into tote for disposal upstream of the WWTP. Samples collected.

OW-12		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)	1741	8.36	36.48	3921.000	2.549	2.03	202.9	-18.9
GAUGE TIME	1700	(2)								
DTB (feet)	128.85	(3)								
Depth to Bottom										
DEDICATED PUMP	N	(4)								
DTW (feet)	47.23 81.62 0.740 181.20	WEATHER CONDITIONS partly cloudy, breezy								
Depth to Water										
DTB - DTW										
Capacity per foot										
3 Well Volumes		WATER APPEARANCE Clear, no odor detected.								
PURGE DATE	9/8/2016									
PURGE TIME	1705									
SAMPLE DAY	9/8/2016									
SAMPLE TIME	1745									

SAMPLE LOG

Purged 30 gallons, pump lost suction. Allowed to recharge and collected samples. Purged water collected in 55 gallon drums and disposed of upstream of the WWTP plant.

INSTRUMENTS USED:

YSI 556 MPS instrument used to collect water quality parameters.

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

bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
3RD QTR/ANNUAL 2016

OW-13		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	8/31/2016	(1)	1038	7.38	13.17	65350.000	42.477	44.17	560.5	-19.5
GAUGE TIME	950	(2)	1040	7.58	13.95	64476.000	41.909	43.55	28	-19.2
DTB (feet)										
Depth to Bottom	99.15	(3)	1042	7.61	14.34	64512.000	41.933	43.59	22.2	-20.1
DEDICATED PUMP	Y	(4)	1044	7.65	14.67	64240.000	41.756	43.40	19.4	-21.6
DTW (feet)		WEATHER CONDITIONS Clear, calm, 55-60 deg F.								
Depth to Water	21.94									
DTB - DTW	77.21									
Capacity per foot	0.740									
3 Well Volumes	171.41									
PURGE DATE	8/31/2016	WATER APPEARANCE Clear, no odor								
PURGE TIME	955									
SAMPLE DAY	8/31/2016									
SAMPLE TIME	1045									

SAMPLE LOG

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

OW-14		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	8/31/2016	(1)	831	5.97	13.65	108842	70.748	79.85	95.7	-111.6
GAUGE TIME	814	(2)	833	6.33	13.75	108303	70.397	79.39	57.8	-126.9
DTB (feet)	46.52 Y	(3)	835	6.47	13.73	108404	70.462	79.48	41.6	-119.9
Depth to Bottom										
DEDICATED PUMP										
DTW (feet)										
Depth to Water	23.50	WEATHER CONDITIONS Clear, calm, 55-60 deg F.								
DTB - DTW	23.02									
Capacity per foot	0.740									
3 Well Volumes	51.10									
PURGE DATE	8/31/2016	WATER APPEARANCE								
PURGE TIME	825									
SAMPLE DAY	8/31/2016									
SAMPLE TIME	842									
		Clear, no odor								

SAMPLE LOG

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

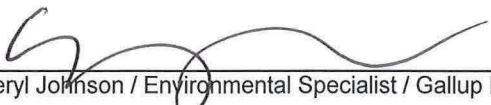
INSTRUMENTS USED:

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
3RD QTR/ANNUAL 2016**

OW-29		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	8/31/2016	(1)	931	6.64	13.28	97435.000	63.333	69.98	83.9	-48.2
GAUGE TIME	855	(2)	933	6.67	13.44	97478.000	63.361	70.04	48.2	-49.7
DTB (feet)										
Depth to Bottom	51.08	(3)	935	6.69	13.57	97507.000	63.380	70.08	32.4	-49.6
DEDICATED PUMP	Y	(4)	937	6.71	13.68	97617.000	63.451	70.18	24.4	-48.5
DTW (feet)		WEATHER CONDITIONS								
Depth to Water	18.94									
DTB - DTW	32.14									
Capacity per foot	0.740									
3 Well Volumes	71.35									
PURGE DATE	8/31/2016	WATER APPEARANCE								
PURGE TIME	905									
SAMPLE DAY	8/31/2016									
SAMPLE TIME	940	Clear, No odor detected								

SAMPLE LOG

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

OW-30		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	8/31/2016	(1)	1141	7.57	15.69	97330	63.264	70.14	127.4	2.7
GAUGE TIME	1115	(2)	1143	6.92	13.46	101484	65.965	73.45	73.0	-8.5
DTB (feet)										
Depth to Bottom	49.90	(3)	1145	6.89	13.77	101519	65.988	73.52	40.1	-9.4
DEDICATED PUMP	Y	(4)	1147	6.86	14.20	101484	65.965	73.54	25.6	-7.5
DTW (feet)		WEATHER CONDITIONS								
Depth to Water	23.30									
DTB - DTW	26.60									
Capacity per foot	0.740									
3 Well Volumes	59.05									
PURGE DATE	8/31/2016	WATER APPEARANCE								
PURGE TIME	1120									
SAMPLE DAY	8/31/2016									
SAMPLE TIME	1150	Clear, No odor detected								

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
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OW-50		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/9/2016	(1)	1025	6.01	13.67	61743.000	40.133	41.45	445.5	16.0
GAUGE TIME	1015	(2)	1027	5.57	13.85	60072.000	39.047	40.20	86.4	-32.1
DTB (feet)										
Depth to Bottom	64.00	(3)	1029	5.55	14.17	59745.000	38.835	39.97	48.2	-42.3
DEDICATED PUMP	N	(4)	1031	5.53	14.25	59911.000	38.942	40.10	31.7	-47.2
DTW (feet)		WEATHER CONDITIONS Clear, calm, 55-60 deg.								
Depth to Water	16.19									
DTB - DTW	47.81									
Capacity per foot	0.163									
3 Well Volumes	23.38									
PURGE DATE	9/9/2016	WATER APPEARANCE Clear first bail, turned pink/brown and back to clear - no odor								
PURGE TIME	1020									
SAMPLE DAY	9/9/2016									
SAMPLE TIME	1040									

SAMPLE LOG

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

OW-52		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/9/2016	(1)	941	5.57	13.80	52895.000	34.382	34.85	22.1	-103.5
GAUGE TIME	7/18/1902	(2)	943	5.55	13.93	52977.000	34.435	34.92	17.3	-100.9
DTB (feet)										
Depth to Bottom	77.74	(3)	945	5.54	14.06	53009.000	34.456	34.94	14.7	-96.1
DEDICATED PUMP	N	(4)	947	5.54	14.19	52986.000	34.441	34.93	12.8	-90.5
DTW (feet)		WEATHER CONDITIONS Clear, calm, 55-60 deg.								
Depth to Water	15.28									
DTB - DTW	62.46									
Capacity per foot	0.163									
3 Well Volumes	30.54									
PURGE DATE	9/9/2016	WATER APPEARANCE Clear - cloudy - no odor								
PURGE TIME	932									
SAMPLE DAY	9/9/2016									
SAMPLE TIME	952									

SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in 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 Bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
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GWM-1		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)
GAUGE DATE	9/13/2016	(1)							
GAUGE TIME	1248	(2)	None taken - has hydrocarbon level						
DTB (feet)									
Depth to Bottom	26.20	(3)							
Depth to Product	21.29	(4)							
DTW (feet)		WEATHER CONDITIONS Clear 0-5 mph, 20-25 Deg F							
Depth to Water	-								
PRODUCT LAYER	4.91								
Capacity per foot	0.163								
2 Well Volumes									
PURGE DATE		WATER APPEARANCE Dark, yellow, oily, odor							
PURGE TIME									
SAMPLE DAY									
SAMPLE TIME									

SAMPLE LOG

No samples collected

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
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GWM-2		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/13/2016	(1)	None taken - well is DRY							
GAUGE TIME	1241	(2)								
DTB (feet)	18.81	(3)								
Depth to Bottom		(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS Partly Cloudy, breezy								
DTW (feet)	DRY									
Depth to Water										
DTB - DTW	0.163									
Capacity per foot										
2 Well Volumes										
PURGE DATE		WATER APPEARANCE								
PURGE TIME										
SAMPLE DAY										
SAMPLE TIME		Not Applicable								

SAMPLE LOG

GWM-3		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)
GAUGE DATE	9/13/2016	(1)	None taken - well is DRY						
GAUGE TIME	1237	(2)							
DTB (feet)	17.80	(3)							
Depth to Bottom		(4)							
DEDICATED PUMP	N	WEATHER CONDITIONS							
DTW (feet)	DRY								
Depth to Water									
DTB - DTW									
Capacity per foot	0.163	Partly Cloudy, breezy							
2 Well Volumes									
PURGE DATE		WATER APPEARANCE							
PURGE TIME									
SAMPLE DAY									
SAMPLE TIME		Not Applicable							

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
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NAPIS-3		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/1/2016	(1)	1121	7.03	24.20	108016	70.210	79.70	18.7	-29.5
GAUGE TIME	944	(2)	1123	7.38	19.91	116825	75.936	87.56	20.4	-70.5
DTB (feet)	30.42	(3)	1125	4.50	20.04	116786	75.911	87.53	15.3	-76.3
Depth to Bottom										
DEDICATED PUMP	N	(4)	1127	7.55	20.24	116747	75.885	87.51	12.7	-79.5
DTW (feet)	9.10	WEATHER CONDITIONS Cloudy, calm, 70-75 Deg F.								
Depth to Water	21.32									
DTB - DTW	0.163									
Capacity per foot	10.43									
3 Well Volumes		WATER APPEARANCE Clear with pink tint, end of bail turned brownish								
PURGE DATE	9/1/2016									
PURGE TIME	944									
SAMPLE DAY	9/1/2016									
SAMPLE TIME	1130									

SAMPLE LOG

Flush mount vaults were raised from original level and set with a concrete pad to minimize water getting inside the vault. Work was completed on August 10, 2016. Purged approximately 5 gallons when bailer was filling with brown water(sediment). Stopped purge and allowed to recharge before collecting samples. Purged water collected in 55 gal drum and disposed of

KA-3		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/1/2016	(1)	1109	7.02	27.32	99440	64.636	72.11	9.9	-99.9
GAUGE TIME	942	(2)	1111	6.98	28.12	97784	63.559	70.65	15.0	-62.1
DTB (feet)	23.20	(3)	1113	6.97	28.04	97748	63.536	70.62	15.9	-47.9
Depth to Bottom										
DEDICATED PUMP	N	(4)	1115	6.97	27.94	97759	63.544	70.64	16.4	-38.8
DTW (feet)	8.13	WEATHER CONDITIONS Cloudy, calm, 70-75 Deg F.								
Depth to Water	15.07									
DTB - DTW	0.163									
Capacity per foot	7.37									
3 Well Volumes		WATER APPEARANCE Clear with slight pink tint								
PURGE DATE	9/1/2016									
PURGE TIME	1000									
SAMPLE DAY	9/1/2016									
SAMPLE TIME	1120									

SAMPLE LOG

Flush mount vaults were raised from original level and set with a concrete pad to minimize water getting inside the vault. Work was completed on August 10, 2016. Purged water collected in 55 gal drum and disposed of upstream of the WWT 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 Polyethylene Bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
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NAPIS-1		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/1/2016	(1)	1035	6.82	21.56	100713	65.463	73.30	25.7	8.6
GAUGE TIME	1034	(2)	1037	6.82	21.61	100768	65.499	73.35	24.5	9.0
DTB (feet)	13.53	(3)	1039	6.83	21.65	100823	65.535	73.40	23.8	9.6
Depth to Bottom										
DEDICATED PUMP										
DTW (feet)										
Depth to Water										
DTB - DTW	6.99	WEATHER CONDITIONS								
Capacity per foot	6.54									
3 Well Volumes	0.163									
	3.20									
PURGE DATE	9/1/2016	WATER APPEARANCE								
PURGE TIME	1037									
SAMPLE DAY	9/1/2016									
SAMPLE TIME	1046	Clear, no odor detected								

SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in 55 gallon drums and disposed of upstream of the WW treatment Plant.

NAPIS-2		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (mS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/1/2016	(1)	1055	6.91	26.24	112346.00	73.025	83.53	13.2	-122.3
GAUGE TIME	940	(2)	1057	6.89	26.23	112256.00	72.967	83.45	11.7	-129.9
DTB (feet)										
Depth to Bottom	13.61	(3)	1059	6.90	26.21	112229.00	72.949	83.42	11.1	-132.5
DEDICATED PUMP	N	(4)	1101	6.90	26.18	112210.00	72.937	83.41	10.7	-132.1
DTW (feet)		WEATHER CONDITIONS								
Depth to Water	8.84									
DTB - DTW	4.77									
Capacity per foot	0.163									
3 Well Volumes	2.33									
PURGE DATE	9/1/2016	WATER APPEARANCE								
PURGE TIME	1020									
SAMPLE DAY	9/1/2016									
SAMPLE TIME	1105	Clear first bail, pink-cloudy - no odor								

SAMPLE LOG

Flush mount vaults were raised from original level and set with a concrete pad to minimize water getting inside the vault. Work was completed on August 10, 2016. Purged water collected in 55 gal drum and disposed of upstream of the WWT 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 Polyethylene Bailer

Signature:



Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
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OAPIS-1		TEST PARAMETERS								
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS)	TDS (g/L)	Salinity (ppt)	Dissolved Oxygen (%)	ORP (mV)
GAUGE DATE	9/1/2016	(1)	1209	6.53	16.17	357636.000	232.463	418.73	382.1	-136.5
GAUGE TIME	1200	(2)	1211	6.50	16.39	356965.000	232.027	417.59	65.9	-131.7
DTB (feet)	28.30	(3)	1213	6.51	16.43	357062.000	232.090	417.80	37.1	-127.4
Depth to Bottom										
DEDICATED PUMP	N	(4)	1215	6.51	16.54	356935.000	232.008	417.64	26.0	-122.9
DTW (feet)	11.32	WEATHER CONDITIONS Clear, breezy, 70-75 deg F.								
Depth to Water										
DTB - DTW										
Capacity per foot										
3 Well Volumes	8.30	WATER APPEARANCE Clear with slight yellow-orange tint, slight odor detected								
PURGE DATE	9/1/2016									
PURGE TIME	1205									
SAMPLE DAY	9/1/2016									
SAMPLE TIME	1220									
PUMP DEPTH	NA									
DTW (feet)										
at end of Purging										

SAMPLE LOG

Used new bailer to purge and collect samples. Purged water collected in a plastic container and disposed of upstream of the WWT 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 Polyethylene Bailer

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
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Oil Sump LDU		WEATHER CONDITIONS
GAUGE DATE	9/6/2016	Clear, breezy
GAUGE TIME	1331	WATER APPEARANCE
DTB (feet)	NA	NOT APPLICABLE
Depth to Bottom	NA	
DTW (feet)	DRY	NOTES
Depth to Water	NA	
DTB - DTW	NA	No samples collected - dry
PURGE DATE	NA	
PURGE TIME	NA	
SAMPLE DATE	N/A	
SAMPLE TIME		

East LDU		WEATHER CONDITIONS
GAUGE DATE	9/6/2016	Clear, breezy
GAUGE TIME	1335	WATER APPEARANCE
DTB (feet)	NA	Not Applicable
Depth to Bottom	NA	
DTW (feet)	11.16	NOTES
Depth to Water	NA	
DTB - DTW	NA	Not enough water for samples. Rechecked on 9/9/16 - level still low.
PURGE DATE	NA	
PURGE TIME	NA	
SAMPLE DATE	N/A	
SAMPLE TIME		

West LDU		WEATHER CONDITIONS
GAUGE DATE	9/6/2016	Clear, breezy
GAUGE TIME	1330	WATER APPEARANCE
DTB (feet)	NA	Not Applicable
Depth to Bottom	NA	
DTW (feet)	12.12	NOTES
Depth to Water	NA	
DTB - DTW	NA	Not enough water to collect samples - less than 1 inch of water. Rechecked on 9/9/16 - level still low.
PURGE DATE	NA	
PURGE TIME	NA	
SAMPLE DATE	N/A	
SAMPLE TIME		

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
3RD QTR/ANNUAL 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	9/9/2016	(1)	1118	7.52	13.5	371796	241.700	444.30	74.9	-26
GAUGE TIME	1100	(2)	1120	7.50	13.5	372422	242.100	445.55	53.3	-23
DTB (feet)										
Depth to Bottom	50.00	(3)	1122	7.48	13.4	372779	242.300	446.22	42.1	-21
DEDICATED PUMP	N	(4)	1124	7.48	13.4	372905	242.400	446.48	34.5	-20
DTW (feet)	21.20	WEATHER CONDITIONS Clear, calm 65-70 degrees								
Depth to Water	28.80									
DTB - DTW	0.163									
Capacity per foot	14.08									
3 Well Volumes		WATER APPEARANCE Clear with slight yellow tint - cloudy - no odor detected								
PURGE DATE	9/9/2016									
PURGE TIME	1103									
SAMPLE DAY	9/9/2016									
SAMPLE TIME	1125									

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	9/9/2016	(1)	None taken - dry well						
GAUGE TIME	1135	(2)							
DTB (feet)		(3)							
Depth to Bottom	29.10	(4)							
DEDICATED PUMP	N		WEATHER CONDITIONS						
DTW (feet)									
Depth to Water	DRY								
DTB - DTW									
Capacity per foot	0.163		Clear, calm 65-70 degrees						
2 Well Volumes									
PURGE DATE		WATER APPEARANCE							
PURGE TIME									
SAMPLE DAY	N/A								
SAMPLE TIME		Not Applicable							

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-1 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	9/13/2016	Product Thickness (ft)	4.140	Partly cloudy, breezy
GAUGE TIME	1305	Volume of Product Purged (Gallons)	2.500	
DTB (feet)	43.04	Volume of Water Purged (Gallons)	10	WATER APPEARANCE
Depth to Bottom		PURGE DATE		Clear to yellow with sheen and odor
DTP (feet)	27.90	PURGE TIME		
DTW (feet)	32.04	SAMPLE DAY	N/A	
Depth to Water	11.00	SAMPLE TIME	N/A	
DTB - DTW				
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	Collected a sample of the product for method 8011D analysis (DRO/GRO/MRO).

ADDITIONAL NOTES:

Used a 2" bailer to collect the hydrocarbon layer in the well - bailed approximately 2.5 gallons of product. Bailed a total of 10 gallons of water.

RW-2 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	9/13/2016	Product Thickness (ft)	0.000	Partly cloudy, breezy
GAUGE TIME	830	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	39.80	Volume of Water Purged (Gallons)	20	WATER APPEARANCE
Depth to Bottom		PURGE DATE	N/A	Clear - cloudy - brown at end of purge - slight odor
DTP (feet)	0.00	PURGE TIME	N/A	
DTW (feet)	22.47	SAMPLE DAY	9/13/2016	
Depth to Water	17.33	SAMPLE TIME	900	
DTB - DTW				
WELL PURGING				Notes
START DATE	START TIME	END DATE	END TIME	Bailed 20 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

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

RW-5 (Recovery Well)				WEATHER CONDITIONS
GAUGE DATE	9/13/2016	Product Thickness (ft)	0.000	Ptly cloudy, breezy
GAUGE TIME	910	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	39.59	Volume of Water Purged (Gallons)	20	WATER APPEARANCE
		PURGE DATE		Clear - cloudy - gray - sheen - odor. No measurable layer.
DTP (feet)	0.00	PURGE TIME		
DTW (feet)	27.70	SAMPLE DAY	9/13/2016	
Depth to Water	11.89	SAMPLE TIME	940	
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	9/13/2016	Product Thickness (ft)	0.000	Ptly cloudy, breezy
GAUGE TIME	950	Volume of Product Purged (Gallons)	N/A	
DTB (feet)	40.90	Volume of Water Purged (Gallons)	20	WATER APPEARANCE
		PURGE DATE		Clear - cloudy - sheen - odor
DTP (feet)	0.00	PURGE TIME		
DTW (feet)	27.99	SAMPLE DAY	9/13/2016	
Depth to Water	12.91	SAMPLE TIME	1025	
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
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BW-1A		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	1025	(2)								
DTB (feet)		(3)								
Depth to Bottom	46.06	(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS Partly cloudy, calm, 60-65 deg F.								
DTW (feet)										
Depth to Water	DRY									
DTB - DTW										
Capacity per foot	0.163	WATER APPEARANCE DRY								
2 Well Volumes										
PURGE DATE	NA									
PURGE TIME	NA									
SAMPLE DAY	N/A									
SAMPLE TIME										

SAMPLE LOG

BW-1B		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	1030	(2)								
DTB (feet)		(3)								
Depth to Bottom	76.29	(4)								
DEDICATED PUMP	N	WEATHER CONDITIONS								
DTW (feet)										
Depth to Water	DRY									
DTB - DTW										
Capacity per foot	0.163	Partly cloudy, calm, 60-65 deg F.								
2 Well Volumes										
PURGE DATE	NA	WATER APPEARANCE								
PURGE TIME	NA									
SAMPLE DAY	N/A	DRY								
SAMPLE TIME										

SAMPLE LOG

INSTRUMENTS USED:

Plastic dipper

Signature:


Cheryl Johnson / Environmental Specialist / Gallup Refinery

WESTERN REFINING - GALLUP REFINERY
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BW-1C		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/8/2016	(1)	1630	5.68	15.5	70075	45.549	47.94	40.5
GAUGE TIME	1027	(2)	1632	5.53	15.6	70349	45.727	48.16	23.6
DTB (feet)									
Depth to Bottom	141.89	(3)	1634	5.51	15.8	70575	45.874	48.34	16.5
DEDICATED PUMP	Y	(4)	1636	5.51	16.0	70777	46.005	48.51	12.9
DTW (feet)	12.55	WEATHER CONDITIONS Partly cloudy, calm, 60-65 deg F.							
Depth to Water	129.34								
DTB - DTW	0.163								
Capacity per foot	63.25								
3 Well Volumes									
PURGE DATE	9/8/2016	WATER APPEARANCE Clear - no odor detected.							
PURGE TIME	1605								
SAMPLE DAY	9/8/2016								
SAMPLE TIME	1645								

SAMPLE LOG

Pump lost suction at 20 gallons - allowed to recharge and collected samples. Purged water collected in plastic container and disposed of upstreat of the WWT plant.

BW-2A		TEST PARAMETERS							
			Time (hrs)	pH	Temperature Deg C	Conductivity (uS), (mS)	TDS (g/L)	Salinity (ppt)	ORP (mV)
GAUGE DATE	9/8/2016	(1)	931	4.77	13.4	70564	45.867	48.21	18.0
GAUGE TIME	904	(2)	933	4.78	13.6	70558	45.863	48.21	14.9
DTB (feet)									
Depth to Bottom	67.57	(3)	935	4.78	13.6	70576	45.874	48.23	12.9
DEDICATED PUMP	Y	(4)	937	4.79	13.8	70564	45.866	48.23	11.8
DTW (feet)	32.29	WEATHER CONDITIONS Partly Cloudy, slight breeze, 60-65 Deg F.							
Depth to Water	35.28								
DTB - DTW	0.163								
Capacity per foot	17.25								
3 Well Volumes									
PURGE DATE	9/8/2016	WATER APPEARANCE clear, slight yellow tint							
PURGE TIME	914								
SAMPLE DAY	9/8/2016								
SAMPLE TIME	940								

SAMPLE LOG

Purged water collected in 55 gallon drum and disposed of upstream of the WWT 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 Polyethylene Bailer

Signature:


 Cheryl Johnson / Environmental Specialist / Gallup Refinery

**WESTERN REFINING - GALLUP REFINERY
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BW-2B		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)	1000	4.90	14.2	117040	76.076	87.22	10.2	-65
GAUGE TIME	908	(2)	1002	4.91	14.2	117138	76.140	87.32	9.5	-61
DTB (feet)	92.26	(3)	1004	4.91	14.3	117206	76.184	87.39	9.2	-59
Depth to Bottom										
DEDICATED PUMP	Y	(4)	1006	4.91	14.3	117209	76.186	87.39	8.9	-58
DTW (feet)	27.84	WEATHER CONDITIONS Partly Cloudy, calm, 70-75 Deg F.								
Depth to Water										
DTB - DTW										
Capacity per foot										
3 Well Volumes										
PURGE DATE	9/8/2016	WATER APPEARANCE Clear - no odor detected.								
PURGE TIME	935									
SAMPLE DAY	9/8/2016									
SAMPLE TIME	1006									

SAMPLE LOG

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

BW-2C		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)	1215	5.73	15.0	69933	45.456	47.81	44.3	-9
GAUGE TIME	900	(2)	1217	5.75	15.3	69991	45.494	47.87	37.1	-11
DTB (feet)	152.84	(3)	1219	5.77	15.5	70011	45.507	47.89	34.7	-12
Depth to Bottom										
DEDICATED PUMP	N	(4)	1221	5.81	15.8	70061	45.539	47.94	33.9	-12
DTW (feet)	20.63	WEATHER CONDITIONS Partly Cloudy, breezy, 70-75 Deg F.								
Depth to Water										
DTB - DTW										
Capacity per foot										
3 Well Volumes										
PURGE DATE	9/8/2016	WATER APPEARANCE Clear - no odor detected.								
PURGE TIME	1135									
SAMPLE DAY	9/8/2016									
SAMPLE TIME	1225									

SAMPLE LOG

Started purge - pump lost suction after 11 gallons. Stopped - allowed well to recharge before collecting samples. 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