AP-111

AGWMR (7)

2014

DiSorbo Consulting, LLC 1010 Travis Street, Suite 916 | Houston, Texas 77002 713.955.1230 www.disorboconsult.com

Client: WESTERN REFINING SW INC.	Project Number: WEST14003	Boring No. \ Well No.: MKTF-37
Project Name: GALLUP REFINERY – HYDROCARBON SEEP		Sheet: 1 of 1
Saturation Depth: 8'?	Total Depth: 30	GPS Coordinates: N35°29.253' W108°25.649'
Logged By: TRACY PAYNE		
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER	Drilling Rig: CME 75	Driller: C.ORTIZ
Drilling Company: ENVIRO-DRILL, INC.		
Sampling Method \ Size of Sampler: SPLIT SPOON SAMPLER 2" DIA 2' LONG	Start Date: 11.18.14	Finish Date: 11.18.14
Comments	Start Time: 1351	Finish Time: 1645

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
0-2	69	48	0-2	–	40	ASPHALT / GRAVEL BASE – CLAY- V.STIFF, BROWN, DAMP, ~~ODOR~~ ODOR – FAINT
2-4	367	48	2-4	CL	50	SILTY CLAY- LOW, V. STIFF, BROWN, DAMP, ODOR, GRAVEL PRESENT
4-6	355	48	4-6	CL/SP/GP	60	SILTY CLAY / SANDY/GRAVELLY LOW, TO FIRM, DAMP, BROWN WITH SAND/GRAVEL ODOR
6-8	1790	48	6-8	CL/SP/GP	80	SILTY CLAY / SANDY/GRAVELLY STA, ODOR
8-10	2140	48	8-9	CL	90	SILTY CLAY- LOW, SOFT, MOIST TO V. MOIST, BROWN, STRONG ODOR
			9-10	SW/GW	90	SANDY GRAVEL / GRAVELLY SAND- COARSE TO COARSE GRAIN, COMPACT, V. MOIST, ODOR, TAN
10-12	404	48	10-12	CL/SP/GP	90	SILTY CLAY / SAND / GRAVEL – LOW → FIRM DAMP, BROWN WITH COARSE SAND & GRAVEL, ODOR
12-14	454	48	12-14	CL	90	SANDY CLAY – LOW, SOFT, DAMP, ODOR, LIGHT GRAY, GRAVEL AT BASE
14-16	660	48	14-16	CL	50	SANDY CLAY – LOW, V. STIFF, DAMP, ODOR LIGHT GRAY
16-18	340	48	16-18	CL	30	SANDY CLAY – STA
18-20	344	48	18-20	CL	30	SANDY CLAY – STA
20-22	421	48	20-21	CL	60	SANDY CLAY – STA
			21-22	–	60	SHALE – CLAYEY – LT. PURPLE, DAMP, V.STIFF, ODOR
22-24	375	48	22-24	–	30	SHALE – STA

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WELL CONSTRUCTION DATA

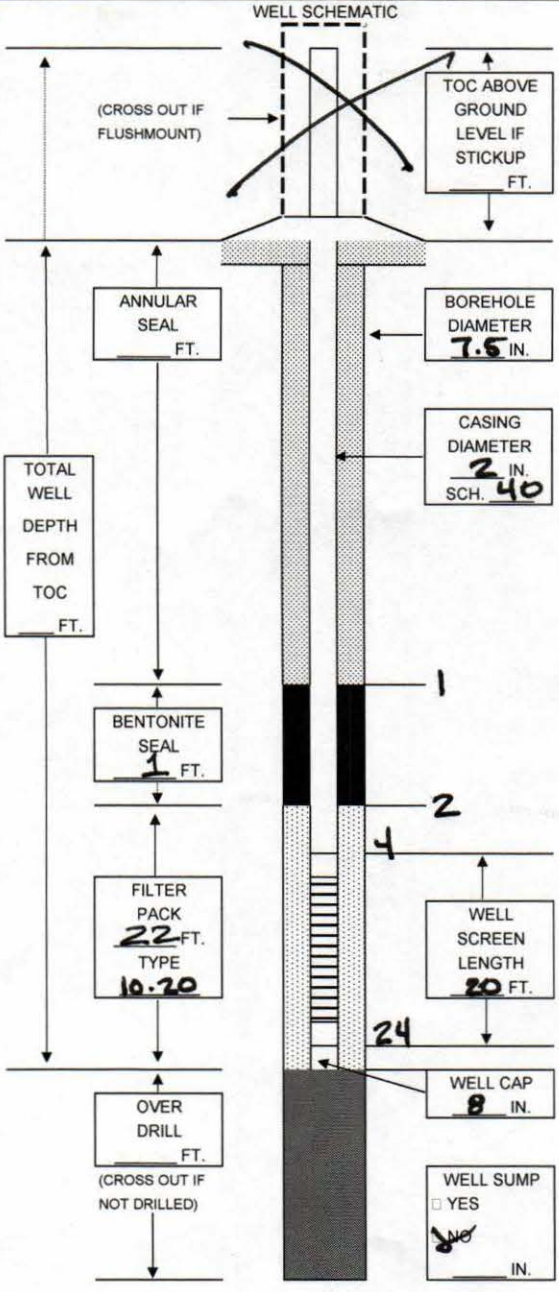
Well Number: MKTF-37
Prepared by: TRACY PAYNE
Start Date: 11.18.14
Finish Date: 11.18.14

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC.
Project No. WEST14003
Project Name: GALLUP REFINERY - HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING ROAD GALLUP, NM 87301
Drilling Contractor: ENVIRO-DRILL, INC.
Driller: C. ORTIZ
GPS Coordinates: N35°29.253' W108° 25.649

WELL TYPE: X MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION:	☐ STEAM CLEAN	☐ SOAP WASH	X HIGH PRESSURE WASH	
CASING TYPE:	X PVC	☐ STAINLESS	☐ TEFLON	☐ OTHER
JOINTS:	X THREADED	☐ WELDED	☐ COUPLED	☐ SCREWED
SURFACE CASING:	X NO	☐ YES	☐ DESCRIBE ___	
WELL SCREEN:	X PVC	☐ STAINLESS	☐ TEFLON	☐ OTHER
DIAMETER:	X 2"	☐ 4"	☐ 6"	☐ OTHER ___ IN
SLOT SIZE:	X 0.010	☐ 0.020	☐ OTHER ___ IN	
SAND:	SIZE 10.20 LBS/SACK___			# 13
BENTONITE:	SIZE 3/8" LBS/SACK___		LBS/BUCKET___	# 1
DRILLING METHOD:	X HOLLOW STEM	☐ SOLID STEM	☐ MUD ROTARY	☐ HAND AUGER
	☐ AIR ROTARY	☐ DIRECT PUSH	☐ OTHER ___	
BIT SIZE:	☐ 6" ☐ 8"	☐ 10" ☐ 12"	☐ 14"	X OTHER 7.5" IN
DRILLING MUD:	X NONE	☐ BENTONITE	☐ WATER	☐ OTHER ___
CENTRALIZER:	X NO	☐ YES	INTERVAL ___	
COMPLETION:	X FLUSH MOUNT	☐ STICKUP	☐ VAULT	
PAD:	☐ 4' X 4'	☐ 5' X 5'	☐ OTHER ___	
CUTTINGS:	X DRUMMED	NUMBER OF DRUMS 2		
	☐ ROLLOFF BOX	ID NUMBER OF BOX ___		
	☐ SPREAD	☐ OTHER ___		

COMMENTS:

WELL DEVELOPMENT DATA

DATE: ___ TIME: ___

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:

DEPTH TO HC:	___	☐ BTOC	☐ BGL		
DEPTH TO GW:	___	☐ BTOC	☐ BGL		
TOTAL DEPTH:	___	☐ BTOC	☐ BGL		
APPEARANCE:	☐ PSH	☐ SILTY	☐ TURBID	☐ OPAQUE	☐ CLEAR
ODOR:	☐ YES	☐ NO	TYPE ___		

DEVELOPMENT METHOD:	☐ NONE	☐ BAILING	☐ PUMPING	☐ AIR LIFT
	☐ SURGE & BLOCK	☐ OTHER ___		
TIME:	☐ 10 MIN	☐ 20 MIN	☐ OTHER ___	
AMOUNT:	☐ 5 GAL	☐ 10 GAL	☐ OTHER ___ GAL	

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:

DEPTH TO HC:	___	☐ BTOC	☐ BGL		
DEPTH TO GW:	___	☐ BTOC	☐ BGL		
TOTAL DEPTH:	___	☐ BTOC	☐ BGL		
APPEARANCE:	☐ PSH	☐ SILTY	☐ TURBID	☐ OPAQUE	☐ CLEAR
ODOR:	☐ YES	☐ NO	TYPE ___		

DISPOSITION OF FLUIDS	☐ DRUMMED	☐ WWTS	☐ TREATED	☐ POTW	☐ OTHER
	☐ OTHER ___				

COMMENTS:

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Client: WESTERN REFINING SW, INC.	Project Number: WEST 14003	Boring No. \ Well No.: MKTF-~~38~~ 38
Project Name: GALLUP REFINERY - HYDROCARBON SEEP		Sheet: 1 of 1
Saturation Depth: 8' / Total Depth: 20' BGL / GPS Coordinates: N35°29.277' W108°25.647'		Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER 7.5' / Drilling Rig: CME 75 / Driller: C. ORTIZ		Drilling Company: ENVIRO-DRILL INC
Sampling Method \ Size of Sampler: SPLIT SPOON 2" DIA, 2' LONG		Start Date: 11.20.14 Finish Date: 11.20.14
Comments		Start Time: 0845 Finish Time: 1100

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	5-20' Description of Lithology
			0-6"	-	100	ASPHALT / BASE
6"-2'	217	37	6"-2'	CL/SP	90	SILTY CLAY / SAND / GRAVEL - LOW, FIRM
						DAMP, BROWN, COARSE GRAIN SAND,
						¼" → 1" GRAVEL, ODOR
2-4	70	37	2-4	CL/SP	90	SILTY CLAY / SAND / GRAVEL - STA, ODOR
4-6	42	37	4-6	↓	90	SILTY CLAY / SAND / GRAVEL - STA, ODOR
6-8	20	37	6-8	↓	90	SILTY CLAY / SAND / GRAVEL - STA, ODOR
8-10	9	37	8-10	↓	90	SILTY CLAY / SAND / GRAVEL - STA DECREASE
						IN CLAY CONTENT - V. MOIST TO SAT.
						ODOR
10-12	7	37	10-11	GW	90	SANDY GRAVEL - COMPACT, BROWN, SAT.
						FAINT ODOR V. COARSE SAND
						¼" → 1.5" GRAVEL
			11-11.5	CL	90	~~SANDY~~ ~~SILTY~~ CLAY - LOW, FIRM → SOFT, MOIST,
						BROWN
			11.5-12	GW	90	SANDY GRAVEL - STA (10-11) SAT.
12-14	8	37	12-14	GW	10	SANDY GRAVEL - STA, SAT.
14-16	6	37	14-16	GW	10	SANDY GRAVEL - STA, SAT. → MOIST
16-18	4	37	16-18	CL	50	SANDY CLAY - LOW, FIRM, DAMP, GRAYISH
						BROWN, FAINT, ODOR
18-20	5	37	18-20	CL	60	SANDY CLAY - STA

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WELL CONSTRUCTION DATA

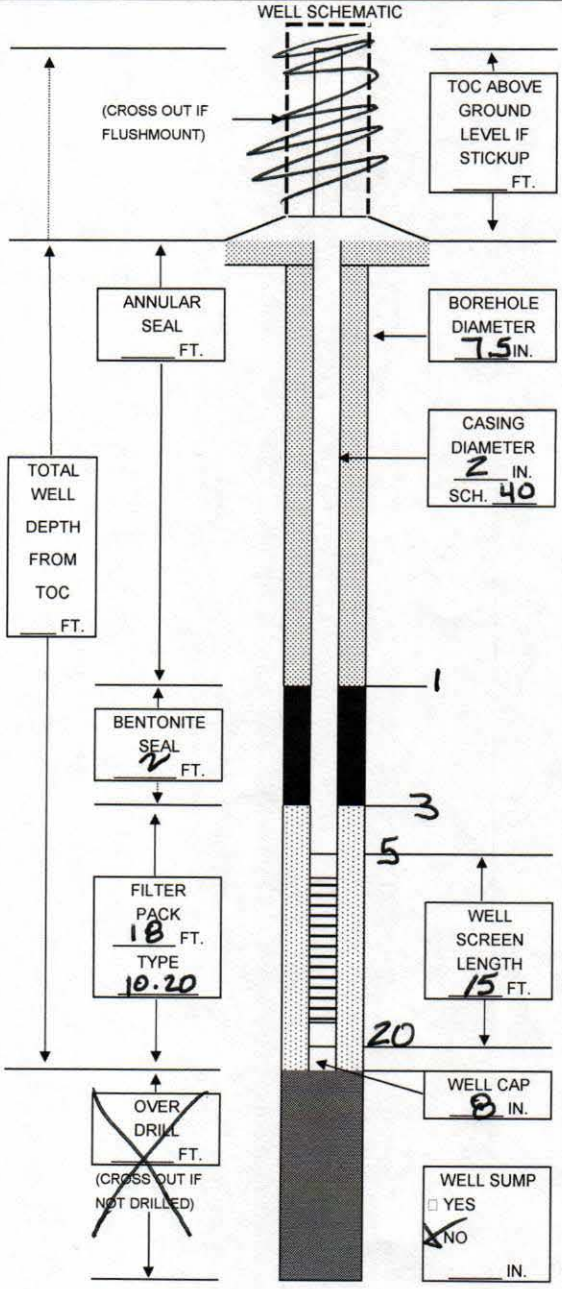
Well Number: MKTF-38
Prepared by: TRACY PAYNE
Start Date: 11.20.14
Finish Date: 11.20.14

WELL LOCATION:

Client Name: WESTERN REFINING SW INC.
Project No. WEST14003
Project Name: GALLUP REFINERY – HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING RD, GALLUP NM 87301
Drilling Contractor: ENVIRO-DRILL, INC.
Driller: C. ORTIZ
GPS Coordinates: N35°29.277' W108°25.647'

WELL TYPE: [X] MONITOR [ ] RECOVERY [ ] OBSERVATION
[ ] TEMPORARY [ ] PERMANENT [ ] REPLACEMENT [ ] SINGLE CASED
[ ] SHALLOW [ ] INTERMEDIATE [ ] DEEP [ ] DOUBLE CASED [ ] OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: [ ] STEAM CLEAN [ ] SOAP WASH [X] HIGH PRESSURE WASH
CASING TYPE: [X] PVC [ ] STAINLESS [ ] TEFLON [ ] OTHER
JOINTS: [X] THREADED [ ] WELDED [ ] COUPLED [ ] SCREWED
SURFACE CASING: [X] NO [ ] YES [ ] DESCRIBE ____
WELL SCREEN: [X] PVC [ ] STAINLESS [ ] TEFLON [ ] OTHER
DIAMETER: [X] 2" [ ] 4" [ ] 6" [ ] OTHER ____ IN
SLOT SIZE: [X] 0.010 [ ] 0.020 [ ] OTHER ____ IN
SAND: SIZE 10.20 LBS/SACK ____ #____
BENTONITE: SIZE 3/8" LBS/SACK ____ LBS/BUCKET ____ #____
DRILLING METHOD: [X] HOLLOW STEM [ ] SOLID STEM [ ] MUD ROTARY [ ] HAND AUGER
[ ] AIR ROTARY [ ] DIRECT PUSH [ ] OTHER ____
BIT SIZE: [ ] 6" [ ] 8" [ ] 10" [ ] 12" [ ] 14" [X] OTHER 7.5 IN
DRILLING MUD: [X] NONE [ ] BENTONITE [ ] WATER [ ] OTHER ____
CENTRALIZER: [X] NO [ ] YES INTERVAL ____
COMPLETION: [X] FLUSH MOUNT [ ] STICKUP [ ] VAULT
PAD: [ ] 4' X 4' [ ] 5' X 5' [X] OTHER ____
CUTTINGS: [X] DRUMMED NUMBER OF DRUMS 2
[ ] ROLLOFF BOX ID NUMBER OF BOX ____
[ ] SPREAD [ ] OTHER ____

COMMENTS:

WELL DEVELOPMENT DATA

DATE: ____ TIME: ____

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ [ ] BTOC [ ] BGL
DEPTH TO GW: ____ [ ] BTOC [ ] BGL
TOTAL DEPTH: ____ [ ] BTOC [ ] BGL
APPEARANCE: [ ] PSH [ ] SILTY [ ] TURBID [ ] OPAQUE [ ] CLEAR
ODOR: [ ] YES [ ] NO TYPE ____

DEVELOPMENT METHOD: [ ] NONE [ ] BAILING [ ] PUMPING [ ] AIR LIFT
[ ] SURGE & BLOCK [ ] OTHER ____
TIME: [ ] 10 MIN [ ] 20 MIN [ ] OTHER ____
AMOUNT: [ ] 5 GAL [ ] 10 GAL [ ] OTHER ____ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ [ ] BTOC [ ] BGL
DEPTH TO GW: ____ [ ] BTOC [ ] BGL
TOTAL DEPTH: ____ [ ] BTOC [ ] BGL
APPEARANCE: [ ] PSH [ ] SILTY [ ] TURBID [ ] OPAQUE [ ] CLEAR
ODOR: [ ] YES [ ] NO TYPE ____

DISPOSITION OF FLUIDS: [ ] DRUMMED [ ] WWTS [ ] TREATED [ ] POTW [ ] OTHER
[ ] OTHER ____

COMMENTS:

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Client: WESTERN REFINING SOUTHWEST, INC.	Project Number: WEST14003		Boring No. \ Well No.: MKTF-39
Project Name: GALLUP REFINERY - HYDROCARBON SEEP			Sheet: 1 of 1
Saturation Depth	Total Depth: 16' BGL	GPS Coordinates: N 35° 29.321' W 108° 25.641'	Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER 7.5"	Drilling Rig: CME 75	Driller: C. ORTIZ	Drilling Company: ENVIRO-DRILL, INC
Sampling Method \ Size of Sampler: SPLIT SPOON 2" DIA 2' ~~LONG~~ LONG			Start Date: 11.14.14 Finish Date: 11.14.14
Comments			Start Time: 1340 Finish Time: 1530

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
0-2	2.1	53	0-2	ML	100	GRAVEL / CLAY SILT - FILL - BROWN, DAMP FAINT ODOR
2-4	29.4	53	2-4	CL	100	GRAVEL / SILTY CLAY - FILL - MOD STIFF, DAMP, BROWN, NO ODOR
4-6	6.5	53	4-6	CL	90	SANDY SILTY CLAY - FILL LOW, SOFT, DAMP, BROWN PEA SIZE GRAVEL, NO ODOR
6-8	4.5	53	6-8	SW	90	SILTY GRAVELLY SAND - FILL - LOOSE, MEDIUM SAND TO 1.5" GRAVEL, BROWN, NO ODOR, DAMP
8-10	400	53	8-10	CL/SC	90	SANDY CLAY / CLAYEY SAND - COARSE, COMPACT, DAMP TO MOIST, BROWN, HYDROCARBON ODOR - GRAVELLY
10-12	569	53	10-12	CL/SC	90	SANDY CLAY / CLAYEY SAND - STA, MOIST/OILY HC ODOR - GRAVELLY
12-13	-	-	12-13	GP	90	SANDY GRAVEL - LOOSE, BROWN, SAT., HC ODOR V. COARSE SAND TO 3/4" GRAVEL
13-14	51	53	13-14	CL	90	SILTY CLAY - LOW, V. STIFF, DRY → DAMP, GRAY, FAINT ODOR @ BASE
14-16	18	53	14-16	CL	90	SILTY CLAY - STA

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WELL CONSTRUCTION DATA

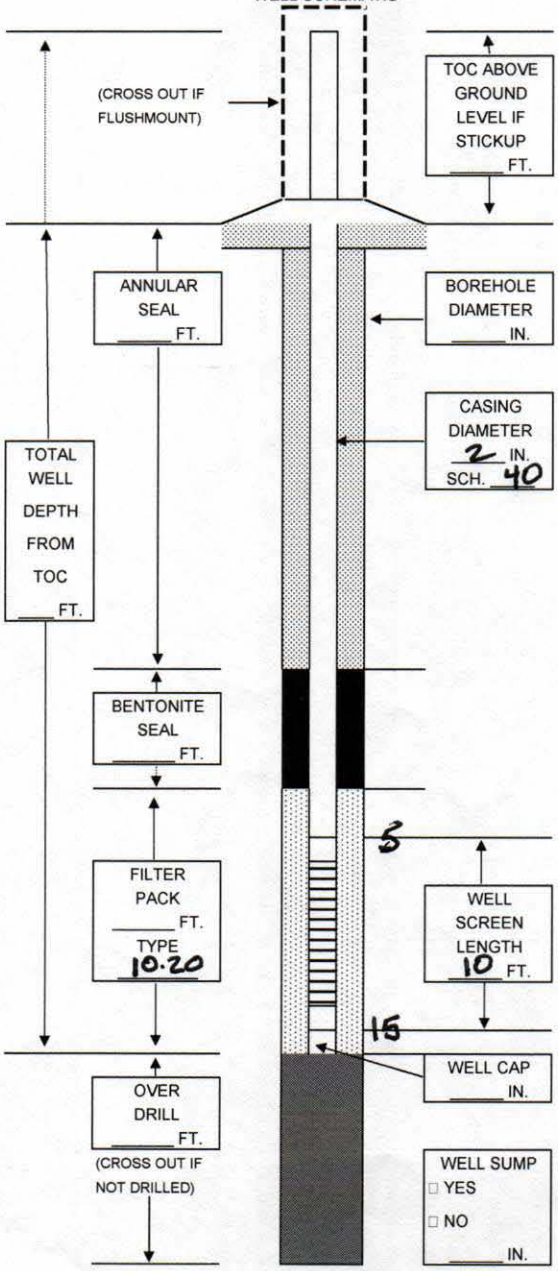
Well Number: MKTF-39
Prepared by: TRACY PAYNE
Start Date: 11.14.14
Finish Date:

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC.
Project No. WEST14003
Project Name: GALLUP REFINERY-HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING RD GALLUP NM 87301
Drilling Contractor: ENVIRO-DRILL INC.
Driller: C. ORTIZ
GPS Coordinates: N 35°29.321' W108° 25.641

WELL TYPE: ☒ MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: ☐ STEAM CLEAN ☐ SOAP WASH ☒ HIGH PRESSURE WASH
CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☒ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED
SURFACE CASING: ☒ NO ☐ YES ☐ DESCRIBE ____
WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☒ 2" ☐ 4" ☐ 6" ☐ OTHER ____ IN
SLOT SIZE: ☒ 0.010 ☐ 0.020 ☐ OTHER ____ IN
SAND: SIZE 10-20 LBS/SACK ____ #____
BENTONITE: SIZE 3/8" LBS/SACK ____ LBS/BUCKET ____ #____
DRILLING METHOD: ☒ HOLLOW STEM ☐ SOLID STEM ☐ MUD ROTARY ☐ HAND AUGER
☐ AIR ROTARY ☐ DIRECT PUSH ☐ OTHER ____
BIT SIZE: ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ 14" ☐ OTHER ____ IN
DRILLING MUD: ☐ NONE ☐ BENTONITE ☐ WATER ☐ OTHER ____
CENTRALIZER: ☐ NO ☐ YES INTERVAL ____
COMPLETION: ☒ FLUSH MOUNT ☐ STICKUP ☐ VAULT
PAD: ☒ 4' X 4' ☐ 5' X 5' ☐ OTHER ____
CUTTINGS: ☒ DRUMMED NUMBER OF DRUMS 1
☐ ROLLOFF BOX ID NUMBER OF BOX ____
☐ SPREAD ☐ OTHER ____

COMMENTS:

WELL DEVELOPMENT DATA

DATE: ____ TIME: ____

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ ☐ BTOC ☐ BGL
DEPTH TO GW: ____ ☐ BTOC ☐ BGL
TOTAL DEPTH: ____ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ____

DEVELOPMENT METHOD: ☐ NONE ☐ BAILING ☐ PUMPING ☐ AIR LIFT
☐ SURGE & BLOCK ☐ OTHER ____
TIME: ☐ 10 MIN ☐ 20 MIN ☐ OTHER ____
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ ☐ BTOC ☐ BGL
DEPTH TO GW: ____ ☐ BTOC ☐ BGL
TOTAL DEPTH: ____ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ____

DISPOSITION OF FLUIDS: ☐ DRUMMED ☐ WWTS ☐ TREATED ☐ POTW ☐ OTHER
☐ OTHER ____

COMMENTS:

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Client: WESTERN REFINING SOUTHWEST, INC.	Project Number: WEST14003		Boring No. \ Well No.: MKTF-40
Project Name: GALLUP REFINERY-HYDROCARBON SEEP			Sheet: 1 of 1
Saturation Depth: 10'	Total Depth: 22'	GPS Coordinates: N35° 29.383' W108° 25.971'	Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER 7.5"	Drilling Rig: CME 75	Driller: C.ORTIZ	Drilling Company: ENVIRO-DRILL, INC.
Sampling Method \ Size of Sampler: SPLIT SPOON 2" DIA, 2' LONG			Start Date: 11.13.14 Finish Date: 11.13.14
Comments:			Start Time: 1440 Finish Time: 1600

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
0-2	0.8	54	0-2	CL	100	CLAY - MOD, STIFF, DAMP, BROWN, NO ODOR, ↑ GRAVEL
2-4	0.1	54	2-4	CL	90	CLAY - STA - GRAVEL
4-6	0.7	54	4-6	CL	80	CLAY - STA
6-8	1.8	54	6-8	CL	90	SANDY CLAY - LOW, FIRM → SOFT, DAMP, BROWN, NO ODOR, MOIST 7-8'
8-10	2.0	54	8-10	CL	70	SANDY CLAY - STA, DAMP → MOIST
10-12	0.6	54	10-12	CL/SC	90	SANDY CLAY / CLAYEY SAND - STA, MOIST TO SATURATED IN CLAYEY SAND SEAMS, NO ODOR
12-14	1.5	54	12-14	CL	20	SANDY SILTY CLAY - LOW, STIFF, DAMP, BROWN NO ODOR - MOIST TO SAT. IN SAND SEAMS
14-16	2.2	54	14-16	CL/SC	80	SANDY CLAY / CLAYEY SAND - LOW, FIRM → SOFT, MOIST TO SAT. IN CLAYEY SAND SEAMS
16-18	2.2	54	16-17.5	CL/SC	80	SANDY CLAY / CLAYEY SAND - STA, MOIST TO SAT.
			17.5-18	CL	90	SILTY CLAY - LOW, V. STIFF, DAMP, REDDISH BROWN AND GRAY, NO ODOR
18-20	2.5	54	18-20	CL	80	SILTY CLAY - ~~FRESH~~ STA
20-22	2.6	54	20-22	CL	50	SILTY CLAY - STA

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WELL CONSTRUCTION DATA

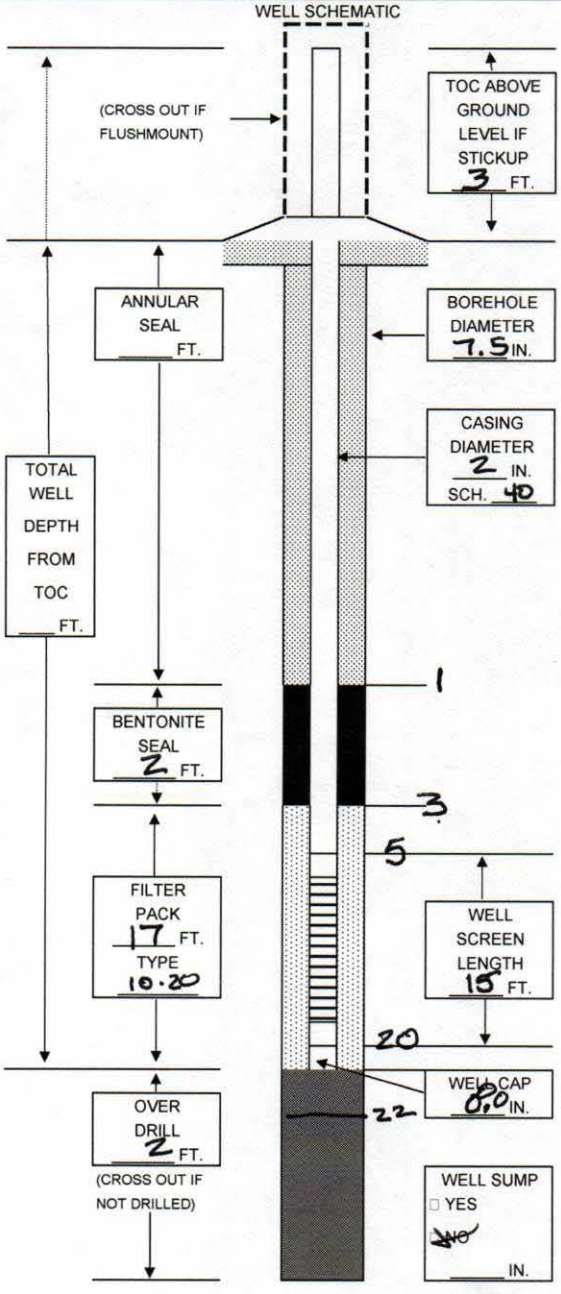
Well Number: MKTF-40
Prepared by: TRACY PAYNE
Start Date: 11.13.14
Finish Date: 11.13.14

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC.
Project No. WEST14003
Project Name: GALLUP REFINERY - HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING RD., GALLUP NM 87301
Drilling Contractor: ENVIRO-DRILL, INC.
Driller: C. ORTIZ
GPS Coordinates: N35°29.383' W108°25.971'

WELL TYPE: X MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: ☐ STEAM CLEAN ☐ SOAP WASH X HIGH PRESSURE WASH
CASING TYPE: X PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: X THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED
SURFACE CASING: X NO ☐ YES ☐ DESCRIBE ___
WELL SCREEN: X PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: X 2" ☐ 4" ☐ 6" ☐ OTHER ___ IN
SLOT SIZE: X 0.010 ☐ 0.020 ☐ OTHER ___ IN
SAND: SIZE 10-20 LBS/SACK ___ #___
BENTONITE: SIZE 3/8" LBS/SACK ___ LBS/BUCKET ___ #___
DRILLING METHOD: X HOLLOW STEM ☐ SOLID STEM ☐ MUD ROTARY ☐ HAND AUGER
☐ AIR ROTARY ☐ DIRECT PUSH ☐ OTHER ___
BIT SIZE: ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ 14" X OTHER 7.5 IN
DRILLING MUD: X NONE ☐ BENTONITE ☐ WATER ☐ OTHER ___
CENTRALIZER: X NO ☐ YES INTERVAL ___
COMPLETION: ☐ FLUSH MOUNT X STICKUP ☐ VAULT
PAD: X 4' X 4' ☐ 5' X 5' ☐ OTHER ___
CUTTINGS: X DRUMMED NUMBER OF DRUMS 1
☐ ROLLOFF BOX ID NUMBER OF BOX ___
☐ SPREAD ☐ OTHER ___

COMMENTS: ___

WELL DEVELOPMENT DATA

DATE: ___ TIME: ___

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ___ ☐ BTOC ☐ BGL
DEPTH TO GW: ___ ☐ BTOC ☐ BGL
TOTAL DEPTH: ___ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ___

DEVELOPMENT METHOD: ☐ NONE ☐ BAILING ☐ PUMPING ☐ AIR LIFT
☐ SURGE & BLOCK ☐ OTHER ___
TIME: ☐ 10 MIN ☐ 20 MIN ☐ OTHER ___
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ___ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ___ ☐ BTOC ☐ BGL
DEPTH TO GW: ___ ☐ BTOC ☐ BGL
TOTAL DEPTH: ___ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ___

DISPOSITION OF FLUIDS: ☐ DRUMMED ☐ WWTS ☐ TREATED ☐ POTW ☐ OTHER
☐ OTHER ___

COMMENTS: ___

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Client: WESTERN REFINING SOUTHWEST, INC.	Project Number: WEST14003	Boring No. \ Well No.: MKTF-41
Project Name: GALLUP REFINERY- HYDROCARBON SEEP		Sheet: 1 of 1
Saturation Depth: 34' BGL / Total Depth: 37'	GPS Coordinates: N 35° 29.287' W 108° 25.983'	Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER 7.5"	Drilling Rig: CME 75 / Driller: C. ORTIZ	Drilling Company: ENVIRO-DRILL, INC
Sampling Method \ Size of Sampler: SPLIT SPOON 2"DIA, 2' LONG		Start Date: 11.13.14 / Finish Date: 11.14.14
Comments		Start Time: 1015 / Finish Time: 1130

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
0-2	2.6	54	0-2	CL	80	SANDY SILTY CLAY- LOW, STIFF, DRY, BROWN, NO ODOR FINE GRAINED SAND, OCCASIONAL GRAVEL
2-4	2.3	54	2-4	CL	70	SANDY SILTY CLAY- STA, NO ODOR
4-6	1.2	54	4-6	CL	40	SANDY SILTY CLAY- STA, NO ODOR
6-8	2.4	54	6-8	CL/ML	50	SILTY CLAY / CLAYEY SILT- LOW FIRM, DRY, BROWN NO ODOR
8-10	3.9	54	8-10	CL	60	SANDY CLAY- LOW, V. STIFF, DRY, BROWN, NO ODOR
10-12	4.8	54	10-12	CL	30	SANDY CLAY - STA, DAMP
12-14	3.5	54	12-14	CL	40	SANDY CLAY - STA
14-16	1.2	54	14-16	CL	10	SANDY CLAY - STA
16-18	3.9	54	16-18	CL	50	SILTY CLAY - LOW, V. ~~SOFT~~ STIFF, ~~DRY~~ DRY/DAMP LT REDDISH BROWN WITH GRAY AT BASE, NO ODOR
~~18-20~~	4.0	54	18-20	CL	80	SILTY CLAY - STA, REDDISH BROWN AND LT GRAY
20-22	3.9	54	20-22	CL	50	SILTY CLAY - STA, LT REDDISH BROWN
22-24	3.6	54	22-24	CL	40	SILTY CLAY - STA, LT REDDISH BROWN & TRACE GRAY
24-26	3.3	54	24-26	CL	50	SILTY CLAY - STA, LT REDDISH BROWN
26-28	2.1	54	26-28	CL	10	SILTY CLAY - STA
28-30	2.8	54	28-30	CL	20	SILTY CLAY - STA
						RESUMED SAMPLING ON 11.14.14
30-32	2.6	46	30-32	CL	40	SILTY CLAY - STA, MOIST AT TOP OF SAMPLE
32-34	3.1	46	32-34	CL	50	SILTY CLAY - STA, CALCAREOUS
34-36	2.9	46	34-36	CL	50	SILTY CLAY - STA, GRAVELLY, MOIST TO SAT., NO ODOR, SHALE AT BASE
	-	-	36-37	-	10	SHALE - DARK GRAY, DENSE TO V. DENSE
						TD @ 37'

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WELL CONSTRUCTION DATA

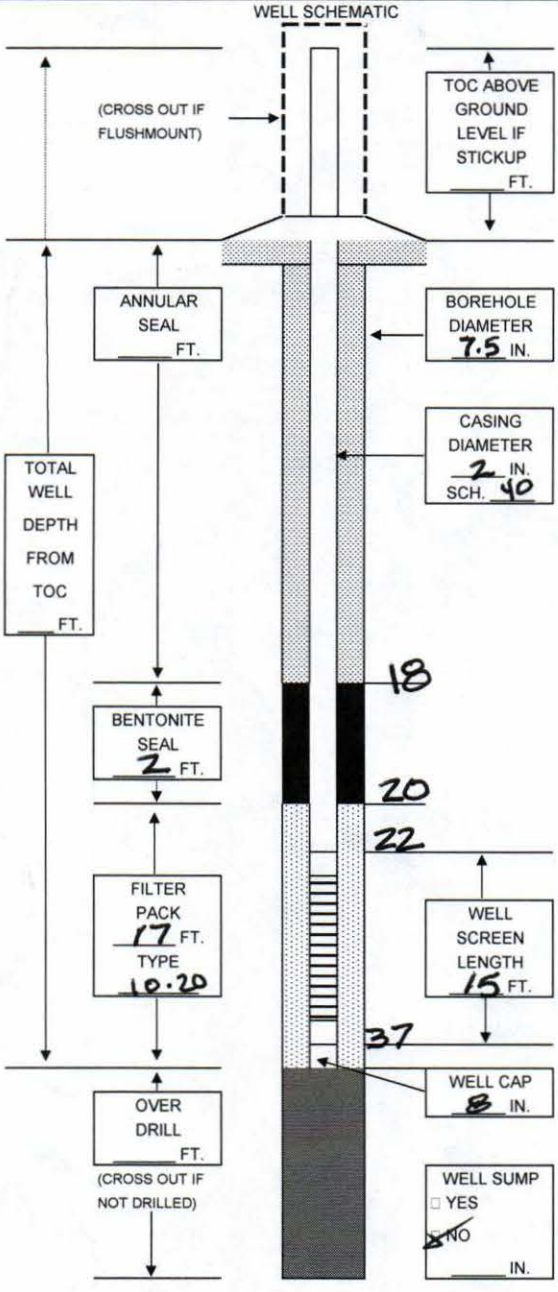
Well Number: MKTF-41
Prepared by: TRACY PAYNE
Start Date: 11.14.14
Finish Date: 11.14.14

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC
Project No.: WEST14003
Project Name: GALLUP REFINERY - HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING ROAD - GALLUP, NM 87301
Drilling Contractor: ENVIRO-DRILL, INC.
Driller: C. ORTIZ
GPS Coordinates: N35°29.287' W108° [illegible] 25.983'

WELL TYPE: X MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: ☐ STEAM CLEAN ☐ SOAP WASH ☒ HIGH PRESSURE WASH
CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☒ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED
SURFACE CASING: ☒ NO ☐ YES ☐ DESCRIBE ___
WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☒ 2" ☐ 4" ☐ 6" ☐ OTHER ___ IN
SLOT SIZE: ☒ 0.010 ☐ 0.020 ☐ OTHER ___ IN
SAND: SIZE 10-20 LBS/SACK ___ # 8
BENTONITE: SIZE 3/8" LBS/SACK ___ LBS/BUCKET ___ # 1
DRILLING METHOD: ☒ HOLLOW STEM ☐ SOLID STEM ☐ MUD ROTARY ☐ HAND AUGER
☐ AIR ROTARY ☐ DIRECT PUSH ☐ OTHER ___
BIT SIZE: ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ 14" ☒ OTHER 7.5 IN
DRILLING MUD: ☒ NONE ☐ BENTONITE ☐ WATER ☐ OTHER ___
CENTRALIZER: ☒ NO ☐ YES INTERVAL ___
COMPLETION: ☐ FLUSH MOUNT ☒ STICKUP ☐ VAULT
PAD: ☒ 4' X 4' ☐ 5' X 5' ☐ OTHER ___
CUTTINGS: ☒ DRUMMED NUMBER OF DRUMS 3
☐ ROLLOFF BOX ID NUMBER OF BOX ___
☐ SPREAD ☐ OTHER ___

COMMENTS:

WELL DEVELOPMENT DATA

DATE: ___ TIME: ___

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ___ ☐ BTOC ☐ BGL
DEPTH TO GW: ___ ☐ BTOC ☐ BGL
TOTAL DEPTH: ___ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ___

DEVELOPMENT METHOD: ☐ NONE ☐ BAILING ☐ PUMPING ☐ AIR LIFT
☐ SURGE & BLOCK ☐ OTHER ___
TIME: ☐ 10 MIN ☐ 20 MIN ☐ OTHER ___
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ___ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ___ ☐ BTOC ☐ BGL
DEPTH TO GW: ___ ☐ BTOC ☐ BGL
TOTAL DEPTH: ___ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ___

DISPOSITION OF FLUIDS: ☐ DRUMMED ☐ WWTS ☐ TREATED ☐ POTW ☐ OTHER
☐ OTHER ___

COMMENTS:

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Client: WESTERN REFINING SOUTHWEST, INC.			Project Number: WEST14003		Boring No. \ Well No.: MKTF-42
Project Name: GALLUP REFINERY - HYDROCARBON SEEP					Sheet: 1 of 1
Saturation Depth: UNK	Total Depth: 30' BGL	GPS Coordinates: N35°29.216' W108°25.957			Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW-STEM AUGER 7.5"			Drilling Rig: CME 75	Driller: C. ORTIZ	Drilling Company: ENVIRO-DRILL, INC.
Sampling Method \ Size of Sampler: SPLIT SPOON - 2"DIA, 2' LONG					Start Date: 11.12.14 Finish Date: 11.12.14
Comments					Start Time: 1505 Finish Time: 1700

Field Screening			Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
Depth (feet bgl)	PID (ppm)	Air Temp. (°F)				
0-2	1.7	50	0-2	CL	100	SILTY CLAY - LOW, FIRM, DRY, LT BROWN, NO ODOR
2-4	2.8	50	2-4	CL	90	SILTY CLAY - LOW, V. STIFF, DRY, LT BROWN, CALCAREOUS, NO ODOR, CRUMBLY
4-6	3.8	50	4-6	CL	60	SILTY CLAY - STA
6-8	2.4	50	6-8	CL	60	SILTY CLAY - STA
8-10	4.1	50	8-10	CL	30	SILTY CLAY - STA
10-12	2.8	50	10-12	CL	50	SANDY CLAY - LOW, STIFF, DRY, LT REDDISH BROWN WITH MEDIUM GRAINED SAND & INTERBEDDED SANDSTONE - LESS THAN 1/2" THICK
12-13	3.9	50	12-13	CL	80	SANDY CLAY - STA
13-14	3.8	50	13-14	CL	80	SILTY CLAY - LOW, V. STIFF, DAMP/DRY, LT REDDISH BROWN, NO ODOR, CALCAREOUS
14-16	2.5	50	14-16	CL	60	SILTY CLAY - STA, INCREASE IN MOISTURE
16-18	2.3	50	16-18	CL	50	SILTY CLAY - STA, TRACE SAND, SANDSTONE SEAM AT 17.5' V. DENSE
18-20	2.4	50	18-20	CL	80	SILTY CLAY - STA, ODOR, EXTREMELY CALCAREOUS (50%)
20-22	1.5	50	20-22	CL	80	SILTY CLAY - STA, CALCAROUS
22-24	2.5	50	22-24	CL	10	SILTY CLAY - LOW, STIFF, DAMP, REDDISH BROWN, NO ODOR
24-26	1.4	48	24-26	CL	60	SILTY CLAY - STA
26-28	1.5	48	26-28	CL	60	SILTY CLAY - STA, TRACE GRAY
28-30	1.2	48	28-30	CL	50	SILTY CLAY - STA, GRAY & REDDISH BROWN

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WELL CONSTRUCTION DATA

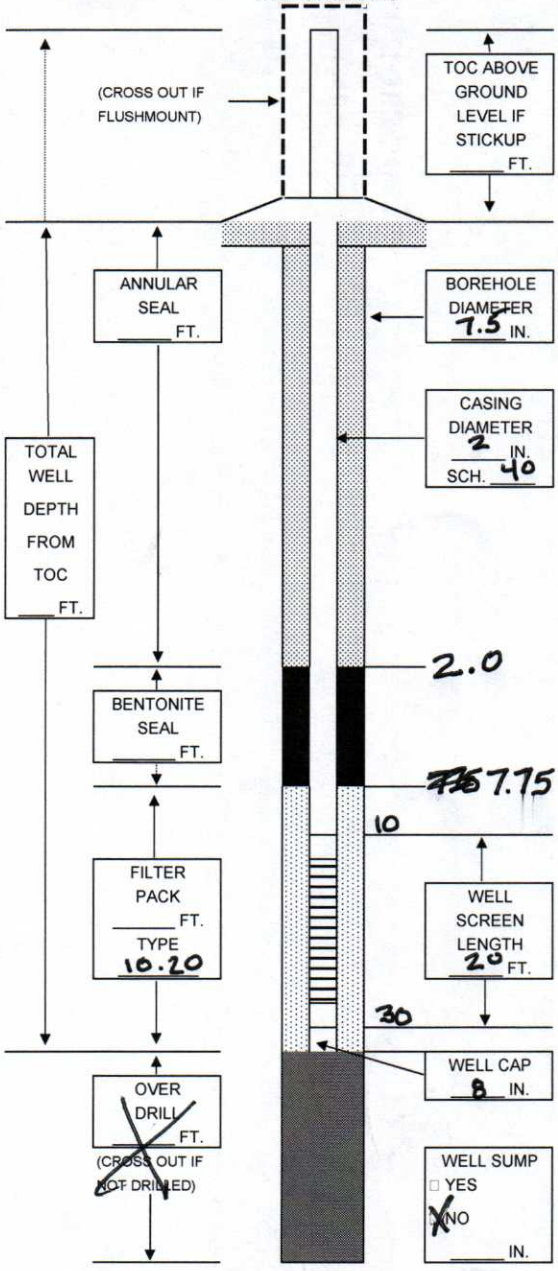
Well Number: MKTF-42
Prepared by: TRACY PAYNE
Start Date: 11.13.14
Finish Date: 11.13.14

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC
Project No.: WEST14003
Project Name: GALLUP REFINERY – HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING ROAD, GALLUP NM 87301
Drilling Contractor: ENVIRO-DRILL, INC.
Driller: C. ORTIZ
GPS Coordinates: N 35°29.216' W108° 25.957

WELL TYPE: X MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: ☐ STEAM CLEAN ☐ SOAP WASH X HIGH PRESSURE WASH
CASING TYPE: X PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: X THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED
SURFACE CASING: X NO ☐ YES ☐ DESCRIBE ____
WELL SCREEN: X PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: X 2" ☐ 4" ☐ 6" ☐ OTHER ____ IN
SLOT SIZE: X 0.010 ☐ 0.020 ☐ OTHER ____ IN
SAND: SIZE 10.20 LBS/SACK ____ # 16
BENTONITE: SIZE 3/8" LBS/SACK ____ LBS/BUCKET ____ # 3
DRILLING METHOD: X HOLLOW STEM ☐ SOLID STEM ☐ MUD ROTARY ☐ HAND AUGER
☐ AIR ROTARY ☐ DIRECT PUSH ☐ OTHER ____
BIT SIZE: ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ 14" X OTHER 7.5 IN
DRILLING MUD: X NONE ☐ BENTONITE ☐ WATER ☐ OTHER ____
CENTRALIZER: X NO ☐ YES INTERVAL ____
COMPLETION: ☐ FLUSH MOUNT X STICKUP ☐ VAULT
PAD: X 4' X 4' ☐ 5' X 5' ☐ OTHER ____
CUTTINGS: X DRUMMED NUMBER OF DRUMS 2
☐ ROLLOFF BOX ID NUMBER OF BOX ____
☐ SPREAD ☐ OTHER ____

COMMENTS: ____

WELL DEVELOPMENT DATA

DATE: ____ TIME: ____

PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ ☐ BTOC ☐ BGL
DEPTH TO GW: ____ ☐ BTOC ☐ BGL
TOTAL DEPTH: ____ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ____

DEVELOPMENT METHOD: ☐ NONE ☐ BAILING ☐ PUMPING ☐ AIR LIFT
☐ SURGE & BLOCK ☐ OTHER ____
TIME: ☐ 10 MIN ☐ 20 MIN ☐ OTHER ____
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ____ ☐ BTOC ☐ BGL
DEPTH TO GW: ____ ☐ BTOC ☐ BGL
TOTAL DEPTH: ____ ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE ____

DISPOSITION OF FLUIDS: ☐ DRUMMED ☐ WWTS ☐ TREATED ☐ POTW ☐ OTHER
☐ OTHER ____

COMMENTS: ____

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Client: WESTERN REFINING SOUTHWEST	Project Number: WEST14003	Boring No. \ Well No.: MKTF-43
Project Name: GALLUP REFINERY- HYDROCARBON SEEP		Sheet: 1 of 1
Saturation Depth: NE	Total Depth: 28'	GPS Coordinates: N 35°29.277' W 108°26.055'
		Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER	Drilling Rig: CME 75	Driller: C. ORTIZ
		Drilling Company: ENVIRO-DRILL, INC.
Sampling Method \ Size of Sampler: SPLIT SPOON 2" DIA; 2' LONG		Start Date: 11.11.14 Finish Date: 11.11.14
Comments		Start Time: 0810 Finish Time: 1040

Field Screening			Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
Depth (feet bgl)	PID (ppm)	Air Temp. (°F)				
0-2	3.6	49	0-2	CH	100	CLAY- HIGH, STIFF, DAMP, BROWN, NO ODOR
2-4	4.6	49	2-4	CH	50	CLAY- STA, MOIST IN SEAMS
4-6	4.2	49	4-6	CH	90	CLAY- STA, MOIST IN SEAMS
6-8	4.6	49	6-8	CH	90	CLAY- STA, REDDISH BROWN
8-10	4.0	49	8-10	CL	90	SILTY CLAY- LOW, SOFT, DAMP, REDDISH BROWN, CRUMBLY, NO ODOR, TRACE GRAY CLAY @ 9.5'
10-12	3.3	49	10-12	CL	80	SILTY CLAY- STA, STIFF.
12-14	3.8	49	12-14	CL	60	SILTY CLAY- STA, VERY STIFF
14-16	3.8	49	14-16	CL	80	SILTY CLAY- STA, VERY STIFF, CALCAREOUS
16-18	2.9	49	16-18	CL	80	SILTY CLAY- STA
18-20	3.1	49	18-20	CL	50	SILTY CLAY- STA
20-22	3.1	49	20-22	CL	60	SILTY CLAY- STA
22-24	3.2	49	22-24	CL	10	SILTY CLAY- STA
24-26	3.3	49	24-26	CL	30	SILTY CLAY- STA, SANDSTONE SEAM 24.50'
26-28	3.2	49	26-28	CL	30	SILTY CLAY- STA

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WELL CONSTRUCTION DATA

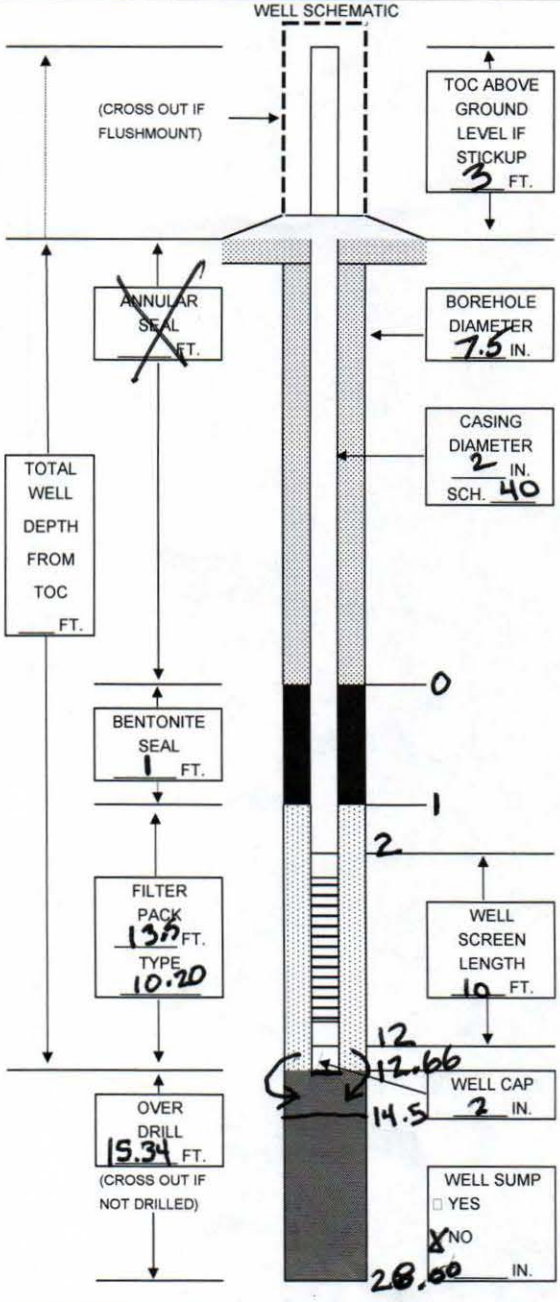
Well Number: MKTF-43
Prepared by: TRACY PAYNE
Start Date: 11.11.14
Finish Date: 11.11.14

WELL LOCATION:

Client Name: WESTERN REFINING SW, INC.
Project No. WEST14003
Project Name: GALLUP REFINERY - HYDROCARBON SEEP
Address of Site: 92 GIANT CROSSING ROAD - GALLUP, NM 87301
Drilling Contractor: ENVIRO-DRILL INC.
Driller: C. ORTIZ
GPS Coordinates:

WELL TYPE: ☒ MONITOR ☐ RECOVERY ☐ OBSERVATION
☐ TEMPORARY ☐ PERMANENT ☐ REPLACEMENT ☐ SINGLE CASED
☐ SHALLOW ☐ INTERMEDIATE ☐ DEEP ☐ DOUBLE CASED ☐ OTHER

WELL SCHEMATIC



INSTALLATION DATA

DECONTAMINATION: ☐ STEAM CLEAN ☐ SOAP WASH ☒ HIGH PRESSURE WASH
CASING TYPE: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
JOINTS: ☒ THREADED ☐ WELDED ☐ COUPLED ☐ SCREWED
SURFACE CASING: ☒ NO ☐ YES ☐ DESCRIBE
WELL SCREEN: ☒ PVC ☐ STAINLESS ☐ TEFLON ☐ OTHER
DIAMETER: ☒ 2" ☐ 4" ☐ 6" ☐ OTHER ____ IN
SLOT SIZE: ☒ 0.010 ☐ 0.020 ☐ OTHER ____ IN
SAND: SIZE 10.20 LBS/SACK ____ # 8 10.5
BENTONITE: SIZE 3/8" LBS/SACK ____ LBS/BUCKET ____ # 4
DRILLING METHOD: ☐ HOLLOW STEM ☐ SOLID STEM ☐ MUD ROTARY ☐ HAND AUGER
☐ AIR ROTARY ☐ DIRECT PUSH ☐ OTHER
BIT SIZE: ☐ 6" ☐ 8" ☐ 10" ☐ 12" ☐ 14" ☒ OTHER 7.5 IN
DRILLING MUD: ☒ NONE ☐ BENTONITE ☐ WATER ☐ OTHER
CENTRALIZER: ☒ NO ☐ YES INTERVAL
COMPLETION: ☐ FLUSH MOUNT ☒ STICKUP ☐ VAULT
PAD: ☒ 4' X 4' ☐ 5' X 5' ☐ OTHER
CUTTINGS: ☒ DRUMMED NUMBER OF DRUMS 2
☐ ROLLOFF BOX ID NUMBER OF BOX
☐ SPREAD ☐ OTHER

COMMENTS:

WELL DEVELOPMENT DATA

DATE: TIME:
PRE-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ☐ BTOC ☐ BGL
DEPTH TO GW: ☐ BTOC ☐ BGL
TOTAL DEPTH: ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE

DEVELOPMENT METHOD: ☐ NONE ☐ BAILING ☐ PUMPING ☐ AIR LIFT ☐ SURGE & BLOCK ☐ OTHER
TIME: ☐ 10 MIN ☐ 20 MIN ☐ OTHER
AMOUNT: ☐ 5 GAL ☐ 10 GAL ☐ OTHER ____ GAL

POST-DEVELOPMENT MEASUREMENTS/OBSERVATIONS:
DEPTH TO HC: ☐ BTOC ☐ BGL
DEPTH TO GW: ☐ BTOC ☐ BGL
TOTAL DEPTH: ☐ BTOC ☐ BGL
APPEARANCE: ☐ PSH ☐ SILTY ☐ TURBID ☐ OPAQUE ☐ CLEAR
ODOR: ☐ YES ☐ NO TYPE

DISPOSITION OF FLUIDS: ☐ DRUMMED ☐ WWTS ☐ TREATED ☐ POTW ☐ OTHER ☐ OTHER

COMMENTS:

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Client: WESTERN REFINING SW, INC.	Project Number: WEST14003	Boring No. \ Well No.: MKTF-44
Project Name: GALLUP REFINERY - HYDROCARBON SEEP		Sheet: 1 of 2
Saturation Depth: NE / Total Depth: 50 / GPS Coordinates: N35°29.313' W108°26.303'W		Logged By: TRACY PAYNE
Drilling Methods \ Auger Size \ Bit Size: HOLLOW STEM AUGER 7.5" / Drilling Rig: CME 75 / Driller: C. ORTIZ		Drilling Company: ENVIRO-DRILL, INC.
Sampling Method \ Size of Sampler: SPLIT SPOON 2" DIAMETER 2' LONG		Start Date: 11.11.14 / Finish Date:
Comments		Start Time: 1215 / Finish Time:

Field Screening: Depth (feet bgl)	PID (ppm)	Air Temp. (°F)	Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
0-2	6.3	60	0-2	CH	100	CLAY- HIGH, V. STIFF, DAMP, BROWN, NO ODOR
2-4	8.3	60	2-4	CH	90	CLAY- STA
4-6	8.2	60	4-6	CH	70	CLAY- STA
6-8	8.6	60	6-8	CH	90	CLAY- STA
8-10	8.2	60	8-10	CH	80	CLAY- STA
10-12	7.9	60	10-12	CH	90	CLAY- STA, TRACE SILT
12-14	7.8	60	12-14	CH	90	CLAY- HIGH, V. STIFF, DAMP, BROWN, NO ODOR
14-16	6.5	60	14-16	CH	10	CLAY- STA
16-18	7.1	60	16-18	CH	80	CLAY- STA
18-20	7.6	60	18-20	CL	70	SANDY SILTY CLAY- LOW, STIFF, DAMP, LIGHT BROWN, NO ODOR, GRAVEL @ AT BASE; SOFT / CRUMBLY 19-19.5' WITH LESSER AMOUNT OF CLAY
20-22	5.5	60	20-22	CL	80	SILTY CLAY- STA WITH SAND SEAMS / SANDSTONE FROM 20.5-22', DRY CRUMBLY
22-24	6.4	60	22-24	CL	80	SANDY SILTY CLAY- LOW, STIFF, DRY -> DAMP LIGHT BROWN, NO ODOR
24-26	4.8	60	24-26	CL	70	GRAVELLY CLAY - STA, @ GRAVEL
26-28	3.8	60	26-28	CL	50	GRAVELLY CLAY- STA, V. STIFF
28-30	4.8	60	28-30	CL	50	SILTY CLAY - LOW, V. STIFF, DAMP / DRY, REDDISH-BROWN, NO ODOR, CALCAREOUS
30-32	4.6	60	30-32	CL	90	SILTY CLAY- LOW, FIRM / CRUMBLY, DAMP -> DRY REDDISH BROWN, NO ODOR, CALAREOUS
32-34	4.3	60	32-34	CL	80	SILTY CLAY- STA, STIFF -> V. STIFF
34-36	3.6	60	34-36	CL	80	SILTY CLAY- STA
36-38	1.9	56	36-38	CL	80	SILTY CLAY- STA
38-40	4.4	56	38-40	CL	20	SILTY CLAY- STA
40-42	3.8	56	40-42	CL	80	SILTY CLAY- STA

DiSorbo Consulting, LLC 1010 Travis Street, Suite 916 | Houston, Texas 77002 713.955.1230 www.disorboconsult.com

Client		Project Number	Boring No. \ Well No. MKTF-44
Project Name			Sheet 2 of 2
Saturation Depth	Total Depth	GPS Coordinates	Logged By
Drilling Methods \ Auger Size \ Bit Size	Drilling Rig	Driller	Drilling Company
Sampling Method \ Size of Sampler			Start Date 11.11.14 Finish Date
Comments			Start Time 1215 Finish Time

Field Screening			Lithologic Interval (feet bgl)	Symbol	% Recovery	Description of Lithology
Depth (feet bgl)	PID (ppm)	Air Temp. (°F)				
42-44	3.8	56	42-44	CL	20	SILTY CLAY- LOW, ~~V. SIFF~~ V. STIFF, CRUMBLY, DAMP→DRY, REDDISH BROWN, NO ODOR
44-46	3.9	56	44-46	CL	60	SILTY CLAY- STA
46-48	3.8	56	46-48	CL	40	SILTY CLAY- STA
48-50	3.7	56	48-50	CL	20	SILTY CLAY- STA

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

November 25, 2014

Cheryl Johnson

Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0231
FAX (505) 722-0210

RE: Hydrocarbon Seep OrderNo.: 1411731

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/18/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-43
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 8:20:00 AM
Lab ID: 1411731-001 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/19/2014 6:49:23 PM	16462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/19/2014 6:49:23 PM	16462
Surr: DNOP	103	59-141		%REC	1	11/19/2014 6:49:23 PM	16462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/19/2014 6:37:43 PM	R22638
Surr: BFB	92.3	80-120		%REC	1	11/19/2014 6:37:43 PM	R22638
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Acenaphthylene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Aniline	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Anthracene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Azobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benz(a)anthracene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzo(a)pyrene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzo(b)fluoranthene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzo(k)fluoranthene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzoic acid	ND	20		µg/L	1	11/20/2014 3:43:36 PM	16481
Benzyl alcohol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Butyl benzyl phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Carbazole	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Chloro-3-methylphenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Chloroaniline	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Chloronaphthalene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Chlorophenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Chrysene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Di-n-butyl phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Di-n-octyl phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Dibenzofuran	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
1,2-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
1,3-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-43
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 8:20:00 AM
Lab ID: 1411731-001 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,4-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
3,3´-Dichlorobenzidine	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Diethyl phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Dimethyl phthalate	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2,4-Dichlorophenol	ND	20		µg/L	1	11/20/2014 3:43:36 PM	16481
2,4-Dimethylphenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	11/20/2014 3:43:36 PM	16481
2,4-Dinitrophenol	ND	20		µg/L	1	11/20/2014 3:43:36 PM	16481
2,4-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2,6-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Fluoranthene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Fluorene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Hexachlorobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Hexachlorobutadiene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Hexachloroethane	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Isophorone	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
1-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Methylphenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
3+4-Methylphenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
N-Nitrosodimethylamine	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Naphthalene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Nitroaniline	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
3-Nitroaniline	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Nitroaniline	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Nitrobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2-Nitrophenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
4-Nitrophenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Pentachlorophenol	ND	20		µg/L	1	11/20/2014 3:43:36 PM	16481
Phenanthrene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Phenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Pyrene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Pyridine	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-43
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 8:20:00 AM
Lab ID: 1411731-001 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/20/2014 3:43:36 PM	16481
Surr: 2-Fluorophenol	30.5	17.6-104		%REC	1	11/20/2014 3:43:36 PM	16481
Surr: Phenol-d5	29.8	17.7-89.9		%REC	1	11/20/2014 3:43:36 PM	16481
Surr: 2,4,6-Tribromophenol	30.6	16.3-122		%REC	1	11/20/2014 3:43:36 PM	16481
Surr: Nitrobenzene-d5	81.1	45.3-117		%REC	1	11/20/2014 3:43:36 PM	16481
Surr: 2-Fluorobiphenyl	74.3	43-113		%REC	1	11/20/2014 3:43:36 PM	16481
Surr: 4-Terphenyl-d14	80.8	47.6-122		%REC	1	11/20/2014 3:43:36 PM	16481
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Toluene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Ethylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Naphthalene	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1-Methylnaphthalene	ND	4.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
2-Methylnaphthalene	ND	4.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Acetone	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
Bromobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Bromodichloromethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Bromoform	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Bromomethane	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
2-Butanone	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
Carbon disulfide	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
Carbon Tetrachloride	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Chlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Chloroethane	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Chloroform	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Chloromethane	ND	3.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
2-Chlorotoluene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
4-Chlorotoluene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
cis-1,2-DCE	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Dibromochloromethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Dibromomethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-43
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 8:20:00 AM
Lab ID: 1411731-001 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1-Dichloroethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1-Dichloroethene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2-Dichloropropane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,3-Dichloropropane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
2,2-Dichloropropane	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Hexachlorobutadiene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
2-Hexanone	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
Isopropylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
4-Isopropyltoluene	3.6	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
4-Methyl-2-pentanone	ND	10		µg/L	1	11/22/2014 7:34:21 AM	R22714
Methylene Chloride	ND	3.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
n-Butylbenzene	ND	3.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
n-Propylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
sec-Butylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Styrene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
tert-Butylbenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
trans-1,2-DCE	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Trichlorofluoromethane	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Vinyl chloride	ND	1.0		µg/L	1	11/22/2014 7:34:21 AM	R22714
Xylenes, Total	ND	1.5		µg/L	1	11/22/2014 7:34:21 AM	R22714
Surr: 1,2-Dichloroethane-d4	97.7	70-130		%REC	1	11/22/2014 7:34:21 AM	R22714
Surr: 4-Bromofluorobenzene	110	70-130		%REC	1	11/22/2014 7:34:21 AM	R22714
Surr: Dibromofluoromethane	104	70-130		%REC	1	11/22/2014 7:34:21 AM	R22714
Surr: Toluene-d8	100	70-130		%REC	1	11/22/2014 7:34:21 AM	R22714

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-42
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:00:00 AM
Lab ID: 1411731-002 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **BCN**	
Diesel Range Organics (DRO)	44	1.0		mg/L	1	11/19/2014 7:10:32 PM	16462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/19/2014 7:10:32 PM	16462
Surr: DNOP	97.2	59-141		%REC	1	11/19/2014 7:10:32 PM	16462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	11/21/2014 12:06:22 PM	R22716
Surr: BFB	87.0	80-120		%REC	10	11/21/2014 12:06:22 PM	R22716
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Acenaphthylene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Aniline	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Anthracene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Azobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benz(a)anthracene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzo(a)pyrene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzo(b)fluoranthene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzo(k)fluoranthene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzoic acid	ND	20		µg/L	1	11/20/2014 5:07:01 PM	16481
Benzyl alcohol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Bis(2-ethylhexyl)phthalate	13	10	B	µg/L	1	11/20/2014 5:07:01 PM	16481
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Butyl benzyl phthalate	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Carbazole	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4-Chloro-3-methylphenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4-Chloroaniline	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Chloronaphthalene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Chlorophenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Chrysene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Di-n-butyl phthalate	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Di-n-octyl phthalate	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Dibenzofuran	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
1,2-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
1,3-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-42
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:00:00 AM
Lab ID: 1411731-002 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,4-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
3,3´-Dichlorobenzidine	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Diethyl phthalate	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Dimethyl phthalate	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2,4-Dichlorophenol	ND	20		µg/L	1	11/20/2014 5:07:01 PM	16481
2,4-Dimethylphenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	11/20/2014 5:07:01 PM	16481
2,4-Dinitrophenol	ND	20		µg/L	1	11/20/2014 5:07:01 PM	16481
2,4-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2,6-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Fluoranthene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Fluorene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Hexachlorobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Hexachlorobutadiene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Hexachloroethane	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Isophorone	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
1-Methylnaphthalene	72	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Methylphenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
3+4-Methylphenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
N-Nitrosodimethylamine	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Naphthalene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Nitroaniline	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
3-Nitroaniline	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4-Nitroaniline	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Nitrobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2-Nitrophenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
4-Nitrophenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Pentachlorophenol	ND	20		µg/L	1	11/20/2014 5:07:01 PM	16481
Phenanthrene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Phenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Pyrene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Pyridine	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-42
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:00:00 AM
Lab ID: 1411731-002
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/20/2014 5:07:01 PM	16481
Surr: 2-Fluorophenol	68.9	17.6-104		%REC	1	11/20/2014 5:07:01 PM	16481
Surr: Phenol-d5	53.9	17.7-89.9		%REC	1	11/20/2014 5:07:01 PM	16481
Surr: 2,4,6-Tribromophenol	1.72	16.3-122	S	%REC	1	11/20/2014 5:07:01 PM	16481
Surr: Nitrobenzene-d5	80.1	45.3-117		%REC	1	11/20/2014 5:07:01 PM	16481
Surr: 2-Fluorobiphenyl	61.3	43-113		%REC	1	11/20/2014 5:07:01 PM	16481
Surr: 4-Terphenyl-d14	78.6	47.6-122		%REC	1	11/20/2014 5:07:01 PM	16481
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	12	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Toluene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Ethylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2,4-Trimethylbenzene	27	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,3,5-Trimethylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Naphthalene	35	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
1-Methylnaphthalene	73	40		µg/L	10	11/22/2014 8:00:58 AM	R22714
2-Methylnaphthalene	58	40		µg/L	10	11/22/2014 8:00:58 AM	R22714
Acetone	ND	100		µg/L	10	11/22/2014 8:00:58 AM	R22714
Bromobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Bromodichloromethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Bromoform	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Bromomethane	ND	30		µg/L	10	11/22/2014 8:00:58 AM	R22714
2-Butanone	ND	100		µg/L	10	11/22/2014 8:00:58 AM	R22714
Carbon disulfide	ND	100		µg/L	10	11/22/2014 8:00:58 AM	R22714
Carbon Tetrachloride	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Chlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Chloroethane	ND	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
Chloroform	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Chloromethane	ND	30		µg/L	10	11/22/2014 8:00:58 AM	R22714
2-Chlorotoluene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
4-Chlorotoluene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
cis-1,2-DCE	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
Dibromochloromethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Dibromomethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-42
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:00:00 AM
Lab ID: 1411731-002 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,4-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Dichlorodifluoromethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1-Dichloroethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1-Dichloroethene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2-Dichloropropane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,3-Dichloropropane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
2,2-Dichloropropane	ND	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1-Dichloropropene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Hexachlorobutadiene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
2-Hexanone	ND	100		µg/L	10	11/22/2014 8:00:58 AM	R22714
Isopropylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
4-Isopropyltoluene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
4-Methyl-2-pentanone	ND	100		µg/L	10	11/22/2014 8:00:58 AM	R22714
Methylene Chloride	ND	30		µg/L	10	11/22/2014 8:00:58 AM	R22714
n-Butylbenzene	ND	30		µg/L	10	11/22/2014 8:00:58 AM	R22714
n-Propylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
sec-Butylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Styrene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
tert-Butylbenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
Tetrachloroethene (PCE)	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
trans-1,2-DCE	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1,1-Trichloroethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,1,2-Trichloroethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Trichloroethene (TCE)	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Trichlorofluoromethane	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
1,2,3-Trichloropropane	ND	20		µg/L	10	11/22/2014 8:00:58 AM	R22714
Vinyl chloride	ND	10		µg/L	10	11/22/2014 8:00:58 AM	R22714
Xylenes, Total	56	15		µg/L	10	11/22/2014 8:00:58 AM	R22714
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%REC	10	11/22/2014 8:00:58 AM	R22714
Surr: 4-Bromofluorobenzene	92.7	70-130		%REC	10	11/22/2014 8:00:58 AM	R22714
Surr: Dibromofluoromethane	96.0	70-130		%REC	10	11/22/2014 8:00:58 AM	R22714
Surr: Toluene-d8	101	70-130		%REC	10	11/22/2014 8:00:58 AM	R22714

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-41
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:45:00 AM
Lab ID: 1411731-003 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/19/2014 7:31:35 PM	16462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/19/2014 7:31:35 PM	16462
Surr: DNOP	132	59-141		%REC	1	11/19/2014 7:31:35 PM	16462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/19/2014 7:32:53 PM	R22638
Surr: BFB	88.3	80-120		%REC	1	11/19/2014 7:32:53 PM	R22638
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Acenaphthylene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Aniline	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Anthracene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Azobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benz(a)anthracene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzo(a)pyrene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzo(b)fluoranthene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzo(k)fluoranthene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzoic acid	ND	20		µg/L	1	11/20/2014 4:11:28 PM	16481
Benzyl alcohol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Bis(2-ethylhexyl)phthalate	14	10	B	µg/L	1	11/20/2014 4:11:28 PM	16481
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Butyl benzyl phthalate	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Carbazole	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4-Chloro-3-methylphenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4-Chloroaniline	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Chloronaphthalene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Chlorophenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Chrysene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Di-n-butyl phthalate	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Di-n-octyl phthalate	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Dibenzofuran	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
1,2-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
1,3-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-41
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:45:00 AM
Lab ID: 1411731-003 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,4-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
3,3´-Dichlorobenzidine	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Diethyl phthalate	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Dimethyl phthalate	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2,4-Dichlorophenol	ND	20		µg/L	1	11/20/2014 4:11:28 PM	16481
2,4-Dimethylphenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	11/20/2014 4:11:28 PM	16481
2,4-Dinitrophenol	ND	20		µg/L	1	11/20/2014 4:11:28 PM	16481
2,4-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2,6-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Fluoranthene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Fluorene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Hexachlorobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Hexachlorobutadiene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Hexachloroethane	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Isophorone	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
1-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Methylphenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
3+4-Methylphenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
N-Nitrosodimethylamine	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Naphthalene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
3-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Nitrobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2-Nitrophenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
4-Nitrophenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Pentachlorophenol	ND	20		µg/L	1	11/20/2014 4:11:28 PM	16481
Phenanthrene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Phenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Pyrene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Pyridine	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-41
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:45:00 AM
Lab ID: 1411731-003 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/20/2014 4:11:28 PM	16481
Surr: 2-Fluorophenol	73.1	17.6-104		%REC	1	11/20/2014 4:11:28 PM	16481
Surr: Phenol-d5	57.2	17.7-89.9		%REC	1	11/20/2014 4:11:28 PM	16481
Surr: 2,4,6-Tribromophenol	81.0	16.3-122		%REC	1	11/20/2014 4:11:28 PM	16481
Surr: Nitrobenzene-d5	81.4	45.3-117		%REC	1	11/20/2014 4:11:28 PM	16481
Surr: 2-Fluorobiphenyl	77.9	43-113		%REC	1	11/20/2014 4:11:28 PM	16481
Surr: 4-Terphenyl-d14	94.4	47.6-122		%REC	1	11/20/2014 4:11:28 PM	16481
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Toluene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Ethylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2-Dichloroethane (EDC)	2.0	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Naphthalene	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1-Methylnaphthalene	ND	4.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
2-Methylnaphthalene	ND	4.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Acetone	ND	10		µg/L	1	11/22/2014 8:27:44 AM	R22714
Bromobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Bromodichloromethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Bromoform	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Bromomethane	ND	3.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
2-Butanone	ND	10		µg/L	1	11/22/2014 8:27:44 AM	R22714
Carbon disulfide	ND	10		µg/L	1	11/22/2014 8:27:44 AM	R22714
Carbon Tetrachloride	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Chlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Chloroethane	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Chloroform	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Chloromethane	ND	3.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
2-Chlorotoluene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
4-Chlorotoluene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
cis-1,2-DCE	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Dibromochloromethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Dibromomethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-41
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 9:45:00 AM
Lab ID: 1411731-003
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1-Dichloroethane	3.6	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1-Dichloroethene	3.8	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2-Dichloropropane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,3-Dichloropropane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
2,2-Dichloropropane	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Hexachlorobutadiene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
2-Hexanone	ND	10		µg/L	1	11/22/2014 8:27:44 AM	R22714
Isopropylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
4-Isopropyltoluene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
4-Methyl-2-pentanone	ND	10		µg/L	1	11/22/2014 8:27:44 AM	R22714
Methylene Chloride	ND	3.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
n-Butylbenzene	ND	3.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
n-Propylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
sec-Butylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Styrene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
tert-Butylbenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
trans-1,2-DCE	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Trichlorofluoromethane	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Vinyl chloride	ND	1.0		µg/L	1	11/22/2014 8:27:44 AM	R22714
Xylenes, Total	ND	1.5		µg/L	1	11/22/2014 8:27:44 AM	R22714
Surr: 1,2-Dichloroethane-d4	94.6	70-130		%REC	1	11/22/2014 8:27:44 AM	R22714
Surr: 4-Bromofluorobenzene	99.4	70-130		%REC	1	11/22/2014 8:27:44 AM	R22714
Surr: Dibromofluoromethane	90.9	70-130		%REC	1	11/22/2014 8:27:44 AM	R22714
Surr: Toluene-d8	103	70-130		%REC	1	11/22/2014 8:27:44 AM	R22714

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-39
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 11:15:00 AM
Lab ID: 1411731-004 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **BCN**	
Diesel Range Organics (DRO)	15	1.0		mg/L	1	11/19/2014 7:52:48 PM	16462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/19/2014 7:52:48 PM	16462
Surr: DNOP	107	59-141		%REC	1	11/19/2014 7:52:48 PM	16462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.39	0.25		mg/L	5	11/21/2014 3:17:45 PM	R22716
Surr: BFB	109	80-120		%REC	5	11/21/2014 3:17:45 PM	R22716
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Acenaphthylene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Aniline	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Anthracene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Azobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benz(a)anthracene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzo(a)pyrene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzo(b)fluoranthene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzo(k)fluoranthene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzoic acid	ND	20		µg/L	1	11/20/2014 4:39:15 PM	16481
Benzyl alcohol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Bis(2-ethylhexyl)phthalate	12	10	B	µg/L	1	11/20/2014 4:39:15 PM	16481
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Butyl benzyl phthalate	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Carbazole	21	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4-Chloro-3-methylphenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4-Chloroaniline	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Chloronaphthalene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Chlorophenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Chrysene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Di-n-butyl phthalate	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Di-n-octyl phthalate	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Dibenzofuran	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
1,2-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
1,3-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-39
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 11:15:00 AM
Lab ID: 1411731-004 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,4-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
3,3´-Dichlorobenzidine	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Diethyl phthalate	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Dimethyl phthalate	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2,4-Dichlorophenol	ND	20		µg/L	1	11/20/2014 4:39:15 PM	16481
2,4-Dimethylphenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	11/20/2014 4:39:15 PM	16481
2,4-Dinitrophenol	ND	20		µg/L	1	11/20/2014 4:39:15 PM	16481
2,4-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2,6-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Fluoranthene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Fluorene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Hexachlorobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Hexachlorobutadiene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Hexachloroethane	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Isophorone	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
1-Methylnaphthalene	79	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Methylphenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
3+4-Methylphenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
N-Nitrosodimethylamine	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Naphthalene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
3-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4-Nitroaniline	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Nitrobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2-Nitrophenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
4-Nitrophenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Pentachlorophenol	ND	20		µg/L	1	11/20/2014 4:39:15 PM	16481
Phenanthrene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Phenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Pyrene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Pyridine	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
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Project: Hydrocarbon Seep
Collection Date: 11/18/2014 11:15:00 AM
Lab ID: 1411731-004 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/20/2014 4:39:15 PM	16481
Surr: 2-Fluorophenol	69.4	17.6-104		%REC	1	11/20/2014 4:39:15 PM	16481
Surr: Phenol-d5	57.4	17.7-89.9		%REC	1	11/20/2014 4:39:15 PM	16481
Surr: 2,4,6-Tribromophenol	83.7	16.3-122		%REC	1	11/20/2014 4:39:15 PM	16481
Surr: Nitrobenzene-d5	83.3	45.3-117		%REC	1	11/20/2014 4:39:15 PM	16481
Surr: 2-Fluorobiphenyl	75.4	43-113		%REC	1	11/20/2014 4:39:15 PM	16481
Surr: 4-Terphenyl-d14	71.9	47.6-122		%REC	1	11/20/2014 4:39:15 PM	16481
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	20	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Toluene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Ethylbenzene	60	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Methyl tert-butyl ether (MTBE)	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2,4-Trimethylbenzene	43	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,3,5-Trimethylbenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2-Dichloroethane (EDC)	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2-Dibromoethane (EDB)	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Naphthalene	120	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
1-Methylnaphthalene	170	20		µg/L	5	11/22/2014 8:54:27 AM	R22714
2-Methylnaphthalene	130	20		µg/L	5	11/22/2014 8:54:27 AM	R22714
Acetone	ND	50		µg/L	5	11/22/2014 8:54:27 AM	R22714
Bromobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Bromodichloromethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Bromoform	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Bromomethane	ND	15		µg/L	5	11/22/2014 8:54:27 AM	R22714
2-Butanone	ND	50		µg/L	5	11/22/2014 8:54:27 AM	R22714
Carbon disulfide	ND	50		µg/L	5	11/22/2014 8:54:27 AM	R22714
Carbon Tetrachloride	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Chlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Chloroethane	ND	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
Chloroform	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Chloromethane	ND	15		µg/L	5	11/22/2014 8:54:27 AM	R22714
2-Chlorotoluene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
4-Chlorotoluene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
cis-1,2-DCE	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
cis-1,3-Dichloropropene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2-Dibromo-3-chloropropane	ND	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
Dibromochloromethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Dibromomethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2-Dichlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-39
Project: Hydrocarbon Seep
Collection Date: 11/18/2014 11:15:00 AM
Lab ID: 1411731-004 **Matrix:** AQUEOUS **Received Date:** 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,4-Dichlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Dichlorodifluoromethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1-Dichloroethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1-Dichloroethene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2-Dichloropropane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,3-Dichloropropane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
2,2-Dichloropropane	ND	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1-Dichloropropene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Hexachlorobutadiene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
2-Hexanone	ND	50		µg/L	5	11/22/2014 8:54:27 AM	R22714
Isopropylbenzene	15	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
4-Isopropyltoluene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
4-Methyl-2-pentanone	ND	50		µg/L	5	11/22/2014 8:54:27 AM	R22714
Methylene Chloride	ND	15		µg/L	5	11/22/2014 8:54:27 AM	R22714
n-Butylbenzene	ND	15		µg/L	5	11/22/2014 8:54:27 AM	R22714
n-Propylbenzene	19	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
sec-Butylbenzene	5.5	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Styrene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
tert-Butylbenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1,2,2-Tetrachloroethane	ND	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
Tetrachloroethene (PCE)	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
trans-1,2-DCE	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
trans-1,3-Dichloropropene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2,3-Trichlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2,4-Trichlorobenzene	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1,1-Trichloroethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,1,2-Trichloroethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Trichloroethene (TCE)	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Trichlorofluoromethane	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
1,2,3-Trichloropropane	ND	10		µg/L	5	11/22/2014 8:54:27 AM	R22714
Vinyl chloride	ND	5.0		µg/L	5	11/22/2014 8:54:27 AM	R22714
Xylenes, Total	ND	7.5		µg/L	5	11/22/2014 8:54:27 AM	R22714
Surr: 1,2-Dichloroethane-d4	97.3	70-130		%REC	5	11/22/2014 8:54:27 AM	R22714
Surr: 4-Bromofluorobenzene	89.3	70-130		%REC	5	11/22/2014 8:54:27 AM	R22714
Surr: Dibromofluoromethane	99.0	70-130		%REC	5	11/22/2014 8:54:27 AM	R22714
Surr: Toluene-d8	106	70-130		%REC	5	11/22/2014 8:54:27 AM	R22714

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Duplicate 01
Project: Hydrocarbon Seep
Collection Date: 11/18/2014
Lab ID: 1411731-005
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **BCN**	
Diesel Range Organics (DRO)	50	1.0		mg/L	1	11/19/2014 8:35:04 PM	16462
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/19/2014 8:35:04 PM	16462
Surr: DNOP	105	59-141		%REC	1	11/19/2014 8:35:04 PM	16462
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.50		mg/L	10	11/21/2014 3:45:06 PM	R22716
Surr: BFB	89.5	80-120		%REC	10	11/21/2014 3:45:06 PM	R22716
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
Acenaphthene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Acenaphthylene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Aniline	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Anthracene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Azobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benz(a)anthracene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzo(a)pyrene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzo(b)fluoranthene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzo(k)fluoranthene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzoic acid	ND	20		µg/L	1	11/20/2014 6:02:10 PM	16481
Benzyl alcohol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Bis(2-ethylhexyl)phthalate	11	10	B	µg/L	1	11/20/2014 6:02:10 PM	16481
4-Bromophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Butyl benzyl phthalate	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Carbazole	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4-Chloro-3-methylphenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4-Chloroaniline	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Chloronaphthalene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Chlorophenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Chrysene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Di-n-butyl phthalate	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Di-n-octyl phthalate	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Dibenzofuran	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
1,2-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
1,3-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Duplicate 01
Project: Hydrocarbon Seep
Collection Date: 11/18/2014
Lab ID: 1411731-005
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
1,4-Dichlorobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
3,3´-Dichlorobenzidine	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Diethyl phthalate	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Dimethyl phthalate	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2,4-Dichlorophenol	ND	20		µg/L	1	11/20/2014 6:02:10 PM	16481
2,4-Dimethylphenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	11/20/2014 6:02:10 PM	16481
2,4-Dinitrophenol	ND	20		µg/L	1	11/20/2014 6:02:10 PM	16481
2,4-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2,6-Dinitrotoluene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Fluoranthene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Fluorene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Hexachlorobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Hexachlorobutadiene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Hexachloroethane	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Isophorone	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
1-Methylnaphthalene	83	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Methylnaphthalene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Methylphenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
3+4-Methylphenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
N-Nitrosodimethylamine	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Naphthalene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Nitroaniline	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
3-Nitroaniline	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4-Nitroaniline	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Nitrobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2-Nitrophenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
4-Nitrophenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Pentachlorophenol	ND	20		µg/L	1	11/20/2014 6:02:10 PM	16481
Phenanthrene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Phenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Pyrene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Pyridine	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Duplicate 01
Project: Hydrocarbon Seep
Collection Date: 11/18/2014
Lab ID: 1411731-005
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **DAM**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/20/2014 6:02:10 PM	16481
Surr: 2-Fluorophenol	45.6	17.6-104		%REC	1	11/20/2014 6:02:10 PM	16481
Surr: Phenol-d5	41.5	17.7-89.9		%REC	1	11/20/2014 6:02:10 PM	16481
Surr: 2,4,6-Tribromophenol	2.22	16.3-122	S	%REC	1	11/20/2014 6:02:10 PM	16481
Surr: Nitrobenzene-d5	55.0	45.3-117		%REC	1	11/20/2014 6:02:10 PM	16481
Surr: 2-Fluorobiphenyl	48.4	43-113		%REC	1	11/20/2014 6:02:10 PM	16481
Surr: 4-Terphenyl-d14	62.4	47.6-122		%REC	1	11/20/2014 6:02:10 PM	16481
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
Benzene	11	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Toluene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Ethylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Methyl tert-butyl ether (MTBE)	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2,4-Trimethylbenzene	27	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,3,5-Trimethylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Naphthalene	36	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
1-Methylnaphthalene	80	40		µg/L	10	11/22/2014 9:21:14 AM	R22714
2-Methylnaphthalene	63	40		µg/L	10	11/22/2014 9:21:14 AM	R22714
Acetone	ND	100		µg/L	10	11/22/2014 9:21:14 AM	R22714
Bromobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Bromodichloromethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Bromoform	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Bromomethane	ND	30		µg/L	10	11/22/2014 9:21:14 AM	R22714
2-Butanone	ND	100		µg/L	10	11/22/2014 9:21:14 AM	R22714
Carbon disulfide	ND	100		µg/L	10	11/22/2014 9:21:14 AM	R22714
Carbon Tetrachloride	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Chlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Chloroethane	ND	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
Chloroform	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Chloromethane	ND	30		µg/L	10	11/22/2014 9:21:14 AM	R22714
2-Chlorotoluene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
4-Chlorotoluene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
cis-1,2-DCE	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
Dibromochloromethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Dibromomethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Duplicate 01
Project: Hydrocarbon Seep
Collection Date: 11/18/2014
Lab ID: 1411731-005
Matrix: AQUEOUS
Received Date: 11/18/2014 4:15:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **cadg**	
1,3-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,4-Dichlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Dichlorodifluoromethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1-Dichloroethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1-Dichloroethene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2-Dichloropropane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,3-Dichloropropane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
2,2-Dichloropropane	ND	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1-Dichloropropene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Hexachlorobutadiene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
2-Hexanone	ND	100		µg/L	10	11/22/2014 9:21:14 AM	R22714
Isopropylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
4-Isopropyltoluene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
4-Methyl-2-pentanone	ND	100		µg/L	10	11/22/2014 9:21:14 AM	R22714
Methylene Chloride	ND	30		µg/L	10	11/22/2014 9:21:14 AM	R22714
n-Butylbenzene	ND	30		µg/L	10	11/22/2014 9:21:14 AM	R22714
n-Propylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
sec-Butylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Styrene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
tert-Butylbenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
Tetrachloroethene (PCE)	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
trans-1,2-DCE	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1,1-Trichloroethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,1,2-Trichloroethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Trichloroethene (TCE)	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Trichlorofluoromethane	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
1,2,3-Trichloropropane	ND	20		µg/L	10	11/22/2014 9:21:14 AM	R22714
Vinyl chloride	ND	10		µg/L	10	11/22/2014 9:21:14 AM	R22714
Xylenes, Total	54	15		µg/L	10	11/22/2014 9:21:14 AM	R22714
Surr: 1,2-Dichloroethane-d4	94.2	70-130		%REC	10	11/22/2014 9:21:14 AM	R22714
Surr: 4-Bromofluorobenzene	95.3	70-130		%REC	10	11/22/2014 9:21:14 AM	R22714
Surr: Dibromofluoromethane	91.9	70-130		%REC	10	11/22/2014 9:21:14 AM	R22714
Surr: Toluene-d8	99.7	70-130		%REC	10	11/22/2014 9:21:14 AM	R22714

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **LCS-16462**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW**	Batch ID: **16462**	RunNo: **22625**
Prep Date: **11/19/2014**	Analysis Date: **11/19/2014**	SeqNo: **667726** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.7	1.0	5.000	0	114	69.7	142			
Surr: DNOP	0.61		0.5000		123	59	141			

Sample ID **MB-16462**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW**	Batch ID: **16462**	RunNo: **22625**
Prep Date: **11/19/2014**	Analysis Date: **11/19/2014**	SeqNo: **668220** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		105	59	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R22638**	RunNo: **22638**
Prep Date:	Analysis Date: **11/19/2014**	SeqNo: **668015** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		84.5	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R22638**	RunNo: **22638**
Prep Date:	Analysis Date: **11/19/2014**	SeqNo: **668016** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.46	0.050	0.5000	0	92.6	80	120			
Surr: BFB	18		20.00		91.0	80	120			

Sample ID **1411731-002BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-42**	Batch ID: **R22638**	RunNo: **22638**
Prep Date:	Analysis Date: **11/19/2014**	SeqNo: **668024** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	2.5	25.00	0	94.6	70.4	127			
Surr: BFB	920		1000		92.2	80	120			

Sample ID **1411731-002BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-42**	Batch ID: **R22638**	RunNo: **22638**
Prep Date:	Analysis Date: **11/19/2014**	SeqNo: **668025** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	2.5	25.00	0	93.6	70.4	127	1.02	20	
Surr: BFB	930		1000		92.6	80	120	0	0	

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R22716**	RunNo: **22716**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **670112** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	19		20.00		92.8	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R22716**	RunNo: **22716**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **670113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID	**2.5UG GRO LCS**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**LCSW**	Batch ID:	**R22716**	RunNo:	**22716**
Prep Date:		Analysis Date:	**11/21/2014**	SeqNo:	**670113** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	89.6	80	120			
Surr: BFB	19		20.00		94.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R22714**	RunNo: **22714**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **669903** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5mL rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R22714**	RunNo: **22714**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **669903** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.5	70	130			
Surr: 4-Bromofluorobenzene	14		10.00		136	70	130			S
Surr: Dibromofluoromethane	9.4		10.00		94.4	70	130			
Surr: Toluene-d8	11		10.00		108	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R22714**	RunNo: **22714**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **669905** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	20	1.0	20.00	0	101	80	120			
Chlorobenzene	19	1.0	20.00	0	96.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**
25-Nov-14

Client: Western Refining Southwest, Gallup
Project: Hydrocarbon Seep

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R22714**	RunNo: **22714**
Prep Date:	Analysis Date: **11/21/2014**	SeqNo: **669905** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	18	1.0	20.00	0	92.4	82.6	131			
Trichloroethene (TCE)	17	1.0	20.00	0	86.5	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.5	70	130			
Surr: 4-Bromofluorobenzene	14		10.00		136	70	130			S
Surr: Dibromofluoromethane	9.3		10.00		93.3	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **mb-16481**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **16481**	RunNo: **22682**
Prep Date: **11/19/2014**	Analysis Date: **11/20/2014**	SeqNo: **668827** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	10	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **mb-16481**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **16481**	RunNo: **22682**
Prep Date: **11/19/2014**	Analysis Date: **11/20/2014**	SeqNo: **668827** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	150		200.0		72.8	17.6	104			
Surr: Phenol-d5	140		200.0		70.0	17.7	89.9			
Surr: 2,4,6-Tribromophenol	160		200.0		81.6	16.3	122			
Surr: Nitrobenzene-d5	70		100.0		69.6	45.3	117			
Surr: 2-Fluorobiphenyl	74		100.0		74.0	43	113			
Surr: 4-Terphenyl-d14	99		100.0		99.0	47.6	122			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **lcs-16481**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **16481**	RunNo: **22682**
Prep Date: **11/19/2014**	Analysis Date: **11/20/2014**	SeqNo: **668828** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	80	10	100.0	0	79.8	47.9	114			
4-Chloro-3-methylphenol	180	10	200.0	0	88.4	51.7	122			
2-Chlorophenol	150	10	200.0	0	73.0	40.7	113			
1,4-Dichlorobenzene	70	10	100.0	0	69.9	39.6	99.9			
2,4-Dinitrotoluene	70	10	100.0	0	70.1	40.8	113			
N-Nitrosodi-n-propylamine	79	10	100.0	0	79.0	51.2	111			
4-Nitrophenol	170	10	200.0	0	85.4	15.7	86.9			
Pentachlorophenol	120	20	200.0	0	60.0	21.6	104			
Phenol	160	10	200.0	0	80.1	28.6	71.7			S
Pyrene	76	10	100.0	0	75.8	54.2	128			
1,2,4-Trichlorobenzene	72	10	100.0	0	72.1	40.9	101			
Surr: 2-Fluorophenol	130		200.0		63.8	17.6	104			
Surr: Phenol-d5	130		200.0		66.5	17.7	89.9			
Surr: 2,4,6-Tribromophenol	160		200.0		82.5	16.3	122			
Surr: Nitrobenzene-d5	67		100.0		66.8	45.3	117			
Surr: 2-Fluorobiphenyl	72		100.0		72.0	43	113			
Surr: 4-Terphenyl-d14	81		100.0		81.0	47.6	122			

Sample ID **lcsd-16481**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **16481**	RunNo: **22682**
Prep Date: **11/19/2014**	Analysis Date: **11/20/2014**	SeqNo: **668829** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	83	10	100.0	0	82.9	47.9	114	3.83	27.2	
4-Chloro-3-methylphenol	160	10	200.0	0	82.2	51.7	122	7.36	25.9	
2-Chlorophenol	140	10	200.0	0	71.6	40.7	113	1.87	22.5	
1,4-Dichlorobenzene	69	10	100.0	0	69.3	39.6	99.9	0.948	24.6	
2,4-Dinitrotoluene	71	10	100.0	0	70.8	40.8	113	0.966	25.3	
N-Nitrosodi-n-propylamine	77	10	100.0	0	77.0	51.2	111	2.61	23.6	
4-Nitrophenol	180	10	200.0	0	88.7	15.7	86.9	3.77	34.7	S
Pentachlorophenol	130	20	200.0	0	63.1	21.6	104	4.97	32.8	
Phenol	160	10	200.0	0	78.3	28.6	71.7	2.37	25.5	S
Pyrene	81	10	100.0	0	81.1	54.2	128	6.83	31.4	
1,2,4-Trichlorobenzene	70	10	100.0	0	70.0	40.9	101	2.96	25.9	
Surr: 2-Fluorophenol	120		200.0		62.4	17.6	104	0	0	
Surr: Phenol-d5	130		200.0		64.7	17.7	89.9	0	0	
Surr: 2,4,6-Tribromophenol	170		200.0		85.0	16.3	122	0	0	
Surr: Nitrobenzene-d5	66		100.0		66.0	45.3	117	0	0	
Surr: 2-Fluorobiphenyl	74		100.0		74.2	43	113	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411731**

25-Nov-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID	**lcsd-16481**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**16481**	RunNo:	**22682**					
Prep Date:	**11/19/2014**	Analysis Date:	**11/20/2014**	SeqNo:	**668829**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	89		100.0		89.4	47.6	122	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1411731** RcptNo: **1**

Received by/date: 11/18/14

Logged By: **Ashley Gallegos** **11/18/2014 4:15:00 PM**

Completed By: **Ashley Gallegos** **11/18/2014 5:10:29 PM**

Reviewed By: CS 11/19/14

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: WESTERN REFINING SW, INC.

Mailing Address: GALLUP REFINERY
92 GIANT CROSSING ROAD GALLUP NM 87301

Phone #: 505.722.3833

email or Fax#: 505.863.0930

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: HYDROCARBON SEEP

Project #: HYDROCARBON SEEP

Project Manager: L. JOHNSON (CHERYL.JOHNSON@WNR.COM)

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1411131	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
11/18/14	0820	GW	MKTF-43	7	HCL/NEAT	-001			✓							✓	✓					
	0900	GW	MKTF-42	7		-002			✓							✓	✓					
	0945	GW	MKTF-41	7		-003			✓							✓	✓					
	1115	GW	MKTF-39	7		-004			✓							✓	✓					
	—	GW	DUPLICATE 01	7		-005			✓							✓	✓					

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
11.18.14	1220			11-18-14	2:60
11-18-14	1615			11/18/14	1615

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 04, 2014

Cheryl Johnson

Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-0231
FAX (505) 722-0210

RE: Hydrocarbon Seep OrderNo.: 1411984

Dear Cheryl Johnson:

Hall Environmental Analysis Laboratory received 7 sample(s) on 11/22/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-44
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 8:30:00 AM
Lab ID: 1411984-001 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/25/2014 3:55:34 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 3:55:34 PM	16539
Surr: DNOP	110	59-141		%REC	1	11/25/2014 3:55:34 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/26/2014 3:25:31 PM	R22836
Surr: BFB	89.8	80-120		%REC	1	11/26/2014 3:25:31 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 4:38:40 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-44
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 8:30:00 AM
Lab ID: 1411984-001 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 4:38:40 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 4:38:40 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 4:38:40 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Naphthalene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 4:38:40 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Phenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-44
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 8:30:00 AM
Lab ID: 1411984-001 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 4:38:40 PM	16584
Surr: 2-Fluorophenol	75.3	17.6-104		%REC	1	12/2/2014 4:38:40 PM	16584
Surr: Phenol-d5	64.5	17.7-89.9		%REC	1	12/2/2014 4:38:40 PM	16584
Surr: 2,4,6-Tribromophenol	91.5	16.3-122		%REC	1	12/2/2014 4:38:40 PM	16584
Surr: Nitrobenzene-d5	84.9	45.3-117		%REC	1	12/2/2014 4:38:40 PM	16584
Surr: 2-Fluorobiphenyl	95.8	43-113		%REC	1	12/2/2014 4:38:40 PM	16584
Surr: 4-Terphenyl-d14	94.3	47.6-122		%REC	1	12/2/2014 4:38:40 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Toluene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Ethylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Methyl tert-butyl ether (MTBE)	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2,4-Trimethylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,3,5-Trimethylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2-Dichloroethane (EDC)	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2-Dibromoethane (EDB)	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Naphthalene	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1-Methylnaphthalene	ND	8.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
2-Methylnaphthalene	ND	8.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Acetone	ND	20		µg/L	2	11/25/2014 3:56:09 PM	R22805
Bromobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Bromodichloromethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Bromoform	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Bromomethane	ND	6.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
2-Butanone	ND	20		µg/L	2	11/25/2014 3:56:09 PM	R22805
Carbon disulfide	ND	20		µg/L	2	11/25/2014 3:56:09 PM	R22805
Carbon Tetrachloride	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Chlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Chloroethane	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Chloroform	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Chloromethane	ND	6.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
2-Chlorotoluene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
4-Chlorotoluene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
cis-1,2-DCE	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
cis-1,3-Dichloropropene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2-Dibromo-3-chloropropane	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Dibromochloromethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Dibromomethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2-Dichlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-44
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 8:30:00 AM
Lab ID: 1411984-001 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,4-Dichlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Dichlorodifluoromethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1-Dichloroethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1-Dichloroethene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2-Dichloropropane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,3-Dichloropropane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
2,2-Dichloropropane	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1-Dichloropropene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Hexachlorobutadiene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
2-Hexanone	ND	20		µg/L	2	11/25/2014 3:56:09 PM	R22805
Isopropylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
4-Isopropyltoluene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
4-Methyl-2-pentanone	ND	20		µg/L	2	11/25/2014 3:56:09 PM	R22805
Methylene Chloride	ND	6.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
n-Butylbenzene	ND	6.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
n-Propylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
sec-Butylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Styrene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
tert-Butylbenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1,1,2-Tetrachloroethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1,2,2-Tetrachloroethane	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Tetrachloroethene (PCE)	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
trans-1,2-DCE	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
trans-1,3-Dichloropropene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2,3-Trichlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2,4-Trichlorobenzene	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1,1-Trichloroethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,1,2-Trichloroethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Trichloroethene (TCE)	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Trichlorofluoromethane	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
1,2,3-Trichloropropane	ND	4.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Vinyl chloride	ND	2.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Xylenes, Total	ND	3.0		µg/L	2	11/25/2014 3:56:09 PM	R22805
Surr: 1,2-Dichloroethane-d4	86.5	70-130		%REC	2	11/25/2014 3:56:09 PM	R22805
Surr: 4-Bromofluorobenzene	91.3	70-130		%REC	2	11/25/2014 3:56:09 PM	R22805
Surr: Dibromofluoromethane	95.8	70-130		%REC	2	11/25/2014 3:56:09 PM	R22805
Surr: Toluene-d8	89.7	70-130		%REC	2	11/25/2014 3:56:09 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-40
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 9:30:00 AM
Lab ID: 1411984-002 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/25/2014 4:25:45 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 4:25:45 PM	16539
Surr: DNOP	110	59-141		%REC	1	11/25/2014 4:25:45 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/26/2014 3:52:49 PM	R22836
Surr: BFB	96.7	80-120		%REC	1	11/26/2014 3:52:49 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 5:06:02 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-40
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 9:30:00 AM
Lab ID: 1411984-002 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 5:06:02 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 5:06:02 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 5:06:02 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Naphthalene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 5:06:02 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Phenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-40
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 9:30:00 AM
Lab ID: 1411984-002 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 5:06:02 PM	16584
Surr: 2-Fluorophenol	75.4	17.6-104		%REC	1	12/2/2014 5:06:02 PM	16584
Surr: Phenol-d5	65.5	17.7-89.9		%REC	1	12/2/2014 5:06:02 PM	16584
Surr: 2,4,6-Tribromophenol	79.3	16.3-122		%REC	1	12/2/2014 5:06:02 PM	16584
Surr: Nitrobenzene-d5	86.2	45.3-117		%REC	1	12/2/2014 5:06:02 PM	16584
Surr: 2-Fluorobiphenyl	90.6	43-113		%REC	1	12/2/2014 5:06:02 PM	16584
Surr: 4-Terphenyl-d14	97.1	47.6-122		%REC	1	12/2/2014 5:06:02 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Toluene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Ethylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Naphthalene	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1-Methylnaphthalene	ND	4.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
2-Methylnaphthalene	ND	4.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Acetone	ND	10		µg/L	1	11/25/2014 4:23:31 PM	R22805
Bromobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Bromodichloromethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Bromoform	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Bromomethane	ND	3.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
2-Butanone	ND	10		µg/L	1	11/25/2014 4:23:31 PM	R22805
Carbon disulfide	ND	10		µg/L	1	11/25/2014 4:23:31 PM	R22805
Carbon Tetrachloride	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Chlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Chloroethane	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Chloroform	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Chloromethane	ND	3.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
2-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
4-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
cis-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Dibromochloromethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Dibromomethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-40
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 9:30:00 AM
Lab ID: 1411984-002 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1-Dichloroethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1-Dichloroethene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,3-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
2,2-Dichloropropane	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Hexachlorobutadiene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
2-Hexanone	ND	10		µg/L	1	11/25/2014 4:23:31 PM	R22805
Isopropylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
4-Isopropyltoluene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
4-Methyl-2-pentanone	ND	10		µg/L	1	11/25/2014 4:23:31 PM	R22805
Methylene Chloride	ND	3.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
n-Butylbenzene	ND	3.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
n-Propylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
sec-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Styrene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
tert-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
trans-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Trichlorofluoromethane	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Vinyl chloride	ND	1.0		µg/L	1	11/25/2014 4:23:31 PM	R22805
Xylenes, Total	ND	1.5		µg/L	1	11/25/2014 4:23:31 PM	R22805
Surr: 1,2-Dichloroethane-d4	87.3	70-130		%REC	1	11/25/2014 4:23:31 PM	R22805
Surr: 4-Bromofluorobenzene	88.4	70-130		%REC	1	11/25/2014 4:23:31 PM	R22805
Surr: Dibromofluoromethane	99.3	70-130		%REC	1	11/25/2014 4:23:31 PM	R22805
Surr: Toluene-d8	91.3	70-130		%REC	1	11/25/2014 4:23:31 PM	R22805

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-38
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 10:40:00 AM
Lab ID: 1411984-003 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	3.8	1.0		mg/L	1	11/25/2014 4:56:24 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 4:56:24 PM	16539
Surr: DNOP	109	59-141		%REC	1	11/25/2014 4:56:24 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	0.12	0.050		mg/L	1	11/26/2014 4:20:16 PM	R22836
Surr: BFB	91.1	80-120		%REC	1	11/26/2014 4:20:16 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 5:33:35 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584

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Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-38
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 10:40:00 AM
Lab ID: 1411984-003 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 5:33:35 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 5:33:35 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 5:33:35 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
1-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Methylnaphthalene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Naphthalene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 5:33:35 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Phenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584

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Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-38
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 10:40:00 AM
Lab ID: 1411984-003 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 5:33:35 PM	16584
Surr: 2-Fluorophenol	79.5	17.6-104		%REC	1	12/2/2014 5:33:35 PM	16584
Surr: Phenol-d5	63.8	17.7-89.9		%REC	1	12/2/2014 5:33:35 PM	16584
Surr: 2,4,6-Tribromophenol	95.2	16.3-122		%REC	1	12/2/2014 5:33:35 PM	16584
Surr: Nitrobenzene-d5	83.4	45.3-117		%REC	1	12/2/2014 5:33:35 PM	16584
Surr: 2-Fluorobiphenyl	89.8	43-113		%REC	1	12/2/2014 5:33:35 PM	16584
Surr: 4-Terphenyl-d14	98.4	47.6-122		%REC	1	12/2/2014 5:33:35 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	2.8	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Toluene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Ethylbenzene	2.9	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Methyl tert-butyl ether (MTBE)	7.4	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2,4-Trimethylbenzene	4.6	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,3,5-Trimethylbenzene	1.5	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Naphthalene	5.5	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1-Methylnaphthalene	8.8	4.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
2-Methylnaphthalene	9.8	4.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Acetone	ND	10		µg/L	1	11/25/2014 4:51:02 PM	R22805
Bromobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Bromodichloromethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Bromoform	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Bromomethane	ND	3.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
2-Butanone	ND	10		µg/L	1	11/25/2014 4:51:02 PM	R22805
Carbon disulfide	ND	10		µg/L	1	11/25/2014 4:51:02 PM	R22805
Carbon Tetrachloride	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Chlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Chloroethane	ND	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Chloroform	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Chloromethane	ND	3.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
2-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
4-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
cis-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Dibromochloromethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Dibromomethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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Hall Environmental Analysis Laboratory, Inc.

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Project: Hydrocarbon Seep
Collection Date: 11/21/2014 10:40:00 AM
Lab ID: 1411984-003 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1-Dichloroethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1-Dichloroethene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,3-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
2,2-Dichloropropane	ND	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Hexachlorobutadiene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
2-Hexanone	ND	10		µg/L	1	11/25/2014 4:51:02 PM	R22805
Isopropylbenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
4-Isopropyltoluene	1.4	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
4-Methyl-2-pentanone	ND	10		µg/L	1	11/25/2014 4:51:02 PM	R22805
Methylene Chloride	ND	3.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
n-Butylbenzene	ND	3.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
n-Propylbenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
sec-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Styrene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
tert-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
trans-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Trichloroethene (TCE)	1.1	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Trichlorofluoromethane	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Vinyl chloride	ND	1.0		µg/L	1	11/25/2014 4:51:02 PM	R22805
Xylenes, Total	3.1	1.5		µg/L	1	11/25/2014 4:51:02 PM	R22805
Surr: 1,2-Dichloroethane-d4	78.5	70-130		%REC	1	11/25/2014 4:51:02 PM	R22805
Surr: 4-Bromofluorobenzene	87.7	70-130		%REC	1	11/25/2014 4:51:02 PM	R22805
Surr: Dibromofluoromethane	89.5	70-130		%REC	1	11/25/2014 4:51:02 PM	R22805
Surr: Toluene-d8	91.0	70-130		%REC	1	11/25/2014 4:51:02 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-37
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 11:55:00 AM
Lab ID: 1411984-004 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	1.0		mg/L	1	11/25/2014 5:26:53 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 5:26:53 PM	16539
Surr: DNOP	103	59-141		%REC	1	11/25/2014 5:26:53 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	8.7	0.50		mg/L	10	11/26/2014 5:14:34 PM	R22836
Surr: BFB	131	80-120	S	%REC	10	11/26/2014 5:14:34 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 6:01:08 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-37
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 11:55:00 AM
Lab ID: 1411984-004 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 6:01:08 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 6:01:08 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 6:01:08 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
1-Methylnaphthalene	50	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2-Methylnaphthalene	56	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Naphthalene	270	20		µg/L	2	12/3/2014 9:31:07 AM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 6:01:08 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Phenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-37
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 11:55:00 AM
Lab ID: 1411984-004 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:01:08 PM	16584
Surr: 2-Fluorophenol	86.3	17.6-104		%REC	1	12/2/2014 6:01:08 PM	16584
Surr: Phenol-d5	59.5	17.7-89.9		%REC	1	12/2/2014 6:01:08 PM	16584
Surr: 2,4,6-Tribromophenol	102	16.3-122		%REC	1	12/2/2014 6:01:08 PM	16584
Surr: Nitrobenzene-d5	86.4	45.3-117		%REC	1	12/2/2014 6:01:08 PM	16584
Surr: 2-Fluorobiphenyl	98.0	43-113		%REC	1	12/2/2014 6:01:08 PM	16584
Surr: 4-Terphenyl-d14	108	47.6-122		%REC	1	12/2/2014 6:01:08 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	140	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
Toluene	200	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
Ethylbenzene	9.3	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Methyl tert-butyl ether (MTBE)	27	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2,4-Trimethylbenzene	510	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
1,3,5-Trimethylbenzene	140	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
1,2-Dichloroethane (EDC)	17	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2-Dibromoethane (EDB)	1.5	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Naphthalene	350	40		µg/L	20	11/26/2014 11:21:16 AM	R22841
1-Methylnaphthalene	47	4.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
2-Methylnaphthalene	84	4.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Acetone	ND	10		µg/L	1	11/25/2014 5:18:29 PM	R22805
Bromobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Bromodichloromethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Bromoform	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Bromomethane	ND	3.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
2-Butanone	ND	10		µg/L	1	11/25/2014 5:18:29 PM	R22805
Carbon disulfide	ND	10		µg/L	1	11/25/2014 5:18:29 PM	R22805
Carbon Tetrachloride	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Chlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Chloroethane	ND	2.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Chloroform	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Chloromethane	ND	3.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
2-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
4-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
cis-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Dibromochloromethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Dibromomethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-37
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 11:55:00 AM
Lab ID: 1411984-004 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1-Dichloroethane	34	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1-Dichloroethene	210	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
1,2-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,3-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
2,2-Dichloropropane	ND	2.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Hexachlorobutadiene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
2-Hexanone	ND	10		µg/L	1	11/25/2014 5:18:29 PM	R22805
Isopropylbenzene	78	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
4-Isopropyltoluene	4.8	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
4-Methyl-2-pentanone	ND	10		µg/L	1	11/25/2014 5:18:29 PM	R22805
Methylene Chloride	ND	3.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
n-Butylbenzene	26	3.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
n-Propylbenzene	82	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
sec-Butylbenzene	11	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Styrene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
tert-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
trans-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,1,2-Trichloroethane	1.7	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Trichloroethene (TCE)	300	20		µg/L	20	11/26/2014 11:21:16 AM	R22841
Trichlorofluoromethane	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Vinyl chloride	ND	1.0		µg/L	1	11/25/2014 5:18:29 PM	R22805
Xylenes, Total	1300	30		µg/L	20	11/26/2014 11:21:16 AM	R22841
Surr: 1,2-Dichloroethane-d4	98.1	70-130		%REC	1	11/25/2014 5:18:29 PM	R22805
Surr: 4-Bromofluorobenzene	92.2	70-130		%REC	1	11/25/2014 5:18:29 PM	R22805
Surr: Dibromofluoromethane	83.3	70-130		%REC	1	11/25/2014 5:18:29 PM	R22805
Surr: Toluene-d8	90.9	70-130		%REC	1	11/25/2014 5:18:29 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-35
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 12:40:00 PM
Lab ID: 1411984-005 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	3.3	1.0		mg/L	1	11/25/2014 5:57:22 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 5:57:22 PM	16539
Surr: DNOP	104	59-141		%REC	1	11/25/2014 5:57:22 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	1.6	0.25		mg/L	5	11/26/2014 6:36:38 PM	R22836
Surr: BFB	91.3	80-120		%REC	5	11/26/2014 6:36:38 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 6:28:36 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-35
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 12:40:00 PM
Lab ID: 1411984-005 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 6:28:36 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 6:28:36 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 6:28:36 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
1-Methylnaphthalene	34	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Methylnaphthalene	45	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Naphthalene	36	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 6:28:36 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Phenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-35
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 12:40:00 PM
Lab ID: 1411984-005 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:28:36 PM	16584
Surr: 2-Fluorophenol	72.7	17.6-104		%REC	1	12/2/2014 6:28:36 PM	16584
Surr: Phenol-d5	59.1	17.7-89.9		%REC	1	12/2/2014 6:28:36 PM	16584
Surr: 2,4,6-Tribromophenol	96.2	16.3-122		%REC	1	12/2/2014 6:28:36 PM	16584
Surr: Nitrobenzene-d5	83.0	45.3-117		%REC	1	12/2/2014 6:28:36 PM	16584
Surr: 2-Fluorobiphenyl	99.1	43-113		%REC	1	12/2/2014 6:28:36 PM	16584
Surr: 4-Terphenyl-d14	100	47.6-122		%REC	1	12/2/2014 6:28:36 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	39	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Toluene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Ethylbenzene	52	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Methyl tert-butyl ether (MTBE)	66	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2,4-Trimethylbenzene	120	10		µg/L	10	11/26/2014 11:48:52 AM	R22841
1,3,5-Trimethylbenzene	50	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Naphthalene	40	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1-Methylnaphthalene	38	4.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
2-Methylnaphthalene	59	4.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Acetone	ND	10		µg/L	1	11/25/2014 6:13:36 PM	R22805
Bromobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Bromodichloromethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Bromoform	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Bromomethane	ND	3.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
2-Butanone	ND	10		µg/L	1	11/25/2014 6:13:36 PM	R22805
Carbon disulfide	ND	10		µg/L	1	11/25/2014 6:13:36 PM	R22805
Carbon Tetrachloride	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Chlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Chloroethane	ND	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Chloroform	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Chloromethane	ND	3.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
2-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
4-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
cis-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Dibromochloromethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Dibromomethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-35
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 12:40:00 PM
Lab ID: 1411984-005 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1-Dichloroethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1-Dichloroethene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,3-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
2,2-Dichloropropane	ND	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Hexachlorobutadiene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
2-Hexanone	ND	10		µg/L	1	11/25/2014 6:13:36 PM	R22805
Isopropylbenzene	5.1	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
4-Isopropyltoluene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
4-Methyl-2-pentanone	ND	10		µg/L	1	11/25/2014 6:13:36 PM	R22805
Methylene Chloride	ND	3.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
n-Butylbenzene	6.1	3.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
n-Propylbenzene	28	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
sec-Butylbenzene	2.7	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Styrene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
tert-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
trans-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Trichlorofluoromethane	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Vinyl chloride	ND	1.0		µg/L	1	11/25/2014 6:13:36 PM	R22805
Xylenes, Total	73	1.5		µg/L	1	11/25/2014 6:13:36 PM	R22805
Surr: 1,2-Dichloroethane-d4	77.7	70-130		%REC	1	11/25/2014 6:13:36 PM	R22805
Surr: 4-Bromofluorobenzene	84.2	70-130		%REC	1	11/25/2014 6:13:36 PM	R22805
Surr: Dibromofluoromethane	86.9	70-130		%REC	1	11/25/2014 6:13:36 PM	R22805
Surr: Toluene-d8	88.8	70-130		%REC	1	11/25/2014 6:13:36 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-36
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 1:30:00 PM
Lab ID: 1411984-006 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE						Analyst: **JME**	
Diesel Range Organics (DRO)	6.8	1.0		mg/L	1	11/25/2014 6:27:26 PM	16539
Motor Oil Range Organics (MRO)	ND	5.0		mg/L	1	11/25/2014 6:27:26 PM	16539
Surr: DNOP	92.2	59-141		%REC	1	11/25/2014 6:27:26 PM	16539
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	25	5.0		mg/L	100	11/26/2014 7:03:58 PM	R22836
Surr: BFB	91.6	80-120		%REC	100	11/26/2014 7:03:58 PM	R22836
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
Acenaphthene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Acenaphthylene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Aniline	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Anthracene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Azobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benz(a)anthracene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzo(a)pyrene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzo(b)fluoranthene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzo(g,h,i)perylene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzo(k)fluoranthene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzoic acid	ND	20		µg/L	1	12/2/2014 6:56:01 PM	16584
Benzyl alcohol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Bis(2-chloroethyl)ether	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Bromophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Butyl benzyl phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Carbazole	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Chloro-3-methylphenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Chloroaniline	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2-Chloronaphthalene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2-Chlorophenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Chlorophenyl phenyl ether	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Chrysene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Di-n-butyl phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Di-n-octyl phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Dibenz(a,h)anthracene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Dibenzofuran	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
1,2-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
1,3-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-36
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 1:30:00 PM
Lab ID: 1411984-006 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
1,4-Dichlorobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
3,3´-Dichlorobenzidine	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Diethyl phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Dimethyl phthalate	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2,4-Dichlorophenol	ND	20		µg/L	1	12/2/2014 6:56:01 PM	16584
2,4-Dimethylphenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4,6-Dinitro-2-methylphenol	ND	20		µg/L	1	12/2/2014 6:56:01 PM	16584
2,4-Dinitrophenol	ND	20		µg/L	1	12/2/2014 6:56:01 PM	16584
2,4-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2,6-Dinitrotoluene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Fluoranthene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Fluorene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Hexachlorobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Hexachlorobutadiene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Hexachlorocyclopentadiene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Hexachloroethane	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Isophorone	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
1-Methylnaphthalene	160	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2-Methylnaphthalene	230	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2-Methylphenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
3+4-Methylphenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
N-Nitrosodimethylamine	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
N-Nitrosodiphenylamine	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Naphthalene	280	20		µg/L	2	12/3/2014 9:58:32 AM	16584
2-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
3-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Nitroaniline	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Nitrobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
4-Nitrophenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Pentachlorophenol	ND	20		µg/L	1	12/2/2014 6:56:01 PM	16584
Phenanthrene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Phenol	15	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Pyrene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Pyridine	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
1,2,4-Trichlorobenzene	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
2,4,5-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-36
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 1:30:00 PM
Lab ID: 1411984-006
Matrix: AQUEOUS
Received Date: 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8270C: SEMIVOLATILES						Analyst: **JDC**	
2,4,6-Trichlorophenol	ND	10		µg/L	1	12/2/2014 6:56:01 PM	16584
Surr: 2-Fluorophenol	52.4	17.6-104		%REC	1	12/2/2014 6:56:01 PM	16584
Surr: Phenol-d5	50.2	17.7-89.9		%REC	1	12/2/2014 6:56:01 PM	16584
Surr: 2,4,6-Tribromophenol	73.8	16.3-122		%REC	1	12/2/2014 6:56:01 PM	16584
Surr: Nitrobenzene-d5	64.7	45.3-117		%REC	1	12/2/2014 6:56:01 PM	16584
Surr: 2-Fluorobiphenyl	68.9	43-113		%REC	1	12/2/2014 6:56:01 PM	16584
Surr: 4-Terphenyl-d14	75.2	47.6-122		%REC	1	12/2/2014 6:56:01 PM	16584
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	8400	200		µg/L	200	11/26/2014 12:16:34 PM	R22841
Toluene	32	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Ethylbenzene	1500	200		µg/L	200	11/26/2014 12:16:34 PM	R22841
Methyl tert-butyl ether (MTBE)	7200	200		µg/L	200	11/26/2014 12:16:34 PM	R22841
1,2,4-Trimethylbenzene	270	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,3,5-Trimethylbenzene	62	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2-Dichloroethane (EDC)	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2-Dibromoethane (EDB)	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Naphthalene	590	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
1-Methylnaphthalene	340	40		µg/L	10	11/25/2014 7:08:09 PM	R22805
2-Methylnaphthalene	530	40		µg/L	10	11/25/2014 7:08:09 PM	R22805
Acetone	ND	100		µg/L	10	11/25/2014 7:08:09 PM	R22805
Bromobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Bromodichloromethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Bromoform	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Bromomethane	ND	30		µg/L	10	11/25/2014 7:08:09 PM	R22805
2-Butanone	ND	100		µg/L	10	11/25/2014 7:08:09 PM	R22805
Carbon disulfide	ND	100		µg/L	10	11/25/2014 7:08:09 PM	R22805
Carbon Tetrachloride	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Chlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Chloroethane	ND	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
Chloroform	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Chloromethane	ND	30		µg/L	10	11/25/2014 7:08:09 PM	R22805
2-Chlorotoluene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
4-Chlorotoluene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
cis-1,2-DCE	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
cis-1,3-Dichloropropene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2-Dibromo-3-chloropropane	ND	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
Dibromochloromethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Dibromomethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2-Dichlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805

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Qualifiers:

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Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: MKTF-36
Project: Hydrocarbon Seep
Collection Date: 11/21/2014 1:30:00 PM
Lab ID: 1411984-006 **Matrix:** AQUEOUS **Received Date:** 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,3-Dichlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,4-Dichlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Dichlorodifluoromethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1-Dichloroethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1-Dichloroethene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2-Dichloropropane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,3-Dichloropropane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
2,2-Dichloropropane	ND	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1-Dichloropropene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Hexachlorobutadiene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
2-Hexanone	ND	100		µg/L	10	11/25/2014 7:08:09 PM	R22805
Isopropylbenzene	41	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
4-Isopropyltoluene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
4-Methyl-2-pentanone	ND	100		µg/L	10	11/25/2014 7:08:09 PM	R22805
Methylene Chloride	ND	30		µg/L	10	11/25/2014 7:08:09 PM	R22805
n-Butylbenzene	ND	30		µg/L	10	11/25/2014 7:08:09 PM	R22805
n-Propylbenzene	99	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
sec-Butylbenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Styrene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
tert-Butylbenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1,1,2-Tetrachloroethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1,2,2-Tetrachloroethane	ND	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
Tetrachloroethene (PCE)	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
trans-1,2-DCE	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
trans-1,3-Dichloropropene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2,3-Trichlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2,4-Trichlorobenzene	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1,1-Trichloroethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,1,2-Trichloroethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Trichloroethene (TCE)	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Trichlorofluoromethane	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
1,2,3-Trichloropropane	ND	20		µg/L	10	11/25/2014 7:08:09 PM	R22805
Vinyl chloride	ND	10		µg/L	10	11/25/2014 7:08:09 PM	R22805
Xylenes, Total	560	15		µg/L	10	11/25/2014 7:08:09 PM	R22805
Surr: 1,2-Dichloroethane-d4	84.3	70-130		%REC	10	11/25/2014 7:08:09 PM	R22805
Surr: 4-Bromofluorobenzene	87.9	70-130		%REC	10	11/25/2014 7:08:09 PM	R22805
Surr: Dibromofluoromethane	93.1	70-130		%REC	10	11/25/2014 7:08:09 PM	R22805
Surr: Toluene-d8	89.0	70-130		%REC	10	11/25/2014 7:08:09 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Trip Blank
Project: Hydrocarbon Seep
Collection Date:
Lab ID: 1411984-007
Matrix: TRIP BLANK
Received Date: 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.050		mg/L	1	11/26/2014 7:31:15 PM	R22836
Surr: BFB	89.8	80-120		%REC	1	11/26/2014 7:31:15 PM	R22836
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
Benzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Toluene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Ethylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Naphthalene	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1-Methylnaphthalene	ND	4.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
2-Methylnaphthalene	ND	4.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Acetone	ND	10		µg/L	1	11/25/2014 7:35:39 PM	R22805
Bromobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Bromodichloromethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Bromoform	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Bromomethane	ND	3.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
2-Butanone	ND	10		µg/L	1	11/25/2014 7:35:39 PM	R22805
Carbon disulfide	ND	10		µg/L	1	11/25/2014 7:35:39 PM	R22805
Carbon Tetrachloride	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Chlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Chloroethane	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Chloroform	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Chloromethane	ND	3.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
2-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
4-Chlorotoluene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
cis-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Dibromochloromethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Dibromomethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,3-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,4-Dichlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Dichlorodifluoromethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1-Dichloroethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1-Dichloroethene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
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S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Western Refining Southwest, Gallup
Client Sample ID: Trip Blank
Project: Hydrocarbon Seep
Collection Date:
Lab ID: 1411984-007
Matrix: TRIP BLANK
Received Date: 11/22/2014 8:37:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **DJF**	
1,2-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,3-Dichloropropane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
2,2-Dichloropropane	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Hexachlorobutadiene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
2-Hexanone	ND	10		µg/L	1	11/25/2014 7:35:39 PM	R22805
Isopropylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
4-Isopropyltoluene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
4-Methyl-2-pentanone	ND	10		µg/L	1	11/25/2014 7:35:39 PM	R22805
Methylene Chloride	ND	3.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
n-Butylbenzene	ND	3.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
n-Propylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
sec-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Styrene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
tert-Butylbenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
trans-1,2-DCE	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1,1-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,1,2-Trichloroethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Trichloroethene (TCE)	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Trichlorofluoromethane	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
1,2,3-Trichloropropane	ND	2.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Vinyl chloride	ND	1.0		µg/L	1	11/25/2014 7:35:39 PM	R22805
Xylenes, Total	ND	1.5		µg/L	1	11/25/2014 7:35:39 PM	R22805
Surr: 1,2-Dichloroethane-d4	82.3	70-130		%REC	1	11/25/2014 7:35:39 PM	R22805
Surr: 4-Bromofluorobenzene	85.7	70-130		%REC	1	11/25/2014 7:35:39 PM	R22805
Surr: Dibromofluoromethane	95.6	70-130		%REC	1	11/25/2014 7:35:39 PM	R22805
Surr: Toluene-d8	92.6	70-130		%REC	1	11/25/2014 7:35:39 PM	R22805

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **MB-16539**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **PBW**	Batch ID: **16539**	RunNo: **22772**
Prep Date: **11/24/2014**	Analysis Date: **11/25/2014**	SeqNo: **672635** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	1.0								
Motor Oil Range Organics (MRO)	ND	5.0								
Surr: DNOP	1.0		1.000		101	59	141			

Sample ID **LCS-16539**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range**
Client ID: **LCSW**	Batch ID: **16539**	RunNo: **22764**
Prep Date: **11/24/2014**	Analysis Date: **11/25/2014**	SeqNo: **672636** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	5.9	1.0	5.000	0	117	69.7	142			
Surr: DNOP	0.62		0.5000		123	59	141			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBW**	Batch ID: **R22836**	RunNo: **22836**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **673913** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	0.050								
Surr: BFB	17		20.00		86.5	80	120			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSW**	Batch ID: **R22836**	RunNo: **22836**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **673914** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	0.45	0.050	0.5000	0	89.8	80	120			
Surr: BFB	18		20.00		92.4	80	120			

Sample ID **1411984-004BMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-37**	Batch ID: **R22836**	RunNo: **22836**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **673928** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	0.50	5.000	8.746	103	70.4	127			
Surr: BFB	280		200.0		141	80	120			S

Sample ID **1411984-004BMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **MKTF-37**	Batch ID: **R22836**	RunNo: **22836**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **673929** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	14	0.50	5.000	8.746	98.4	70.4	127	1.71	20	
Surr: BFB	280		200.0		140	80	120	0	0	S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R22805**	RunNo: **22805**
Prep Date:	Analysis Date: **11/25/2014**	SeqNo: **672998** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R22805**	RunNo: **22805**
Prep Date:	Analysis Date: **11/25/2014**	SeqNo: **672998** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.8		10.00		88.3	70	130			
Surr: 4-Bromofluorobenzene	8.8		10.00		87.9	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.4	70	130			
Surr: Toluene-d8	9.0		10.00		89.7	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R22805**	RunNo: **22805**
Prep Date:	Analysis Date: **11/25/2014**	SeqNo: **673000** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	103	70	130			
Toluene	22	1.0	20.00	0	108	80	120			
Chlorobenzene	22	1.0	20.00	0	109	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R22805**	RunNo: **22805**
Prep Date:	Analysis Date: **11/25/2014**	SeqNo: **673000** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloroethene	23	1.0	20.00	0	113	82.6	131			
Trichloroethene (TCE)	20	1.0	20.00	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	8.6		10.00		86.5	70	130			
Surr: 4-Bromofluorobenzene	8.7		10.00		86.8	70	130			
Surr: Dibromofluoromethane	8.1		10.00		80.6	70	130			
Surr: Toluene-d8	8.8		10.00		88.5	70	130			

Sample ID **5ml rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **PBW**	Batch ID: **R22841**	RunNo: **22841**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **674028** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
Naphthalene	ND	2.0								
1,1-Dichloroethene	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	8.6		10.00		86.5	70	130			
Surr: 4-Bromofluorobenzene	9.3		10.00		92.7	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.1	70	130			
Surr: Toluene-d8	9.3		10.00		93.4	70	130			

Sample ID **100ng lcs**	SampType: **LCS**	TestCode: **EPA Method 8260B: VOLATILES**
Client ID: **LCSW**	Batch ID: **R22841**	RunNo: **22841**
Prep Date:	Analysis Date: **11/26/2014**	SeqNo: **674030** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	70	130			
Toluene	22	1.0	20.00	0	108	80	120			
1,1-Dichloroethene	22	1.0	20.00	0	110	82.6	131			
Trichloroethene (TCE)	20	1.0	20.00	0	99.1	70	130			
Surr: 1,2-Dichloroethane-d4	8.5		10.00		84.7	70	130			
Surr: 4-Bromofluorobenzene	9.0		10.00		90.3	70	130			
Surr: Dibromofluoromethane	9.3		10.00		93.5	70	130			
Surr: Toluene-d8	9.2		10.00		91.8	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**
04-Dec-14

Client: Western Refining Southwest, Gallup
Project: Hydrocarbon Seep

Sample ID **mb-16584**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **16584**	RunNo: **22880**
Prep Date: **11/26/2014**	Analysis Date: **12/2/2014**	SeqNo: **675850** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	ND	10								
Acenaphthylene	ND	10								
Aniline	ND	10								
Anthracene	ND	10								
Azobenzene	ND	10								
Benz(a)anthracene	ND	10								
Benzo(a)pyrene	ND	10								
Benzo(b)fluoranthene	ND	10								
Benzo(g,h,i)perylene	ND	10								
Benzo(k)fluoranthene	ND	10								
Benzoic acid	ND	20								
Benzyl alcohol	ND	10								
Bis(2-chloroethoxy)methane	ND	10								
Bis(2-chloroethyl)ether	ND	10								
Bis(2-chloroisopropyl)ether	ND	10								
Bis(2-ethylhexyl)phthalate	ND	10								
4-Bromophenyl phenyl ether	ND	10								
Butyl benzyl phthalate	ND	10								
Carbazole	ND	10								
4-Chloro-3-methylphenol	ND	10								
4-Chloroaniline	ND	10								
2-Chloronaphthalene	ND	10								
2-Chlorophenol	ND	10								
4-Chlorophenyl phenyl ether	ND	10								
Chrysene	ND	10								
Di-n-butyl phthalate	ND	10								
Di-n-octyl phthalate	ND	10								
Dibenz(a,h)anthracene	ND	10								
Dibenzofuran	ND	10								
1,2-Dichlorobenzene	ND	10								
1,3-Dichlorobenzene	ND	10								
1,4-Dichlorobenzene	ND	10								
3,3´-Dichlorobenzidine	ND	10								
Diethyl phthalate	ND	10								
Dimethyl phthalate	ND	10								
2,4-Dichlorophenol	ND	20								
2,4-Dimethylphenol	ND	10								
4,6-Dinitro-2-methylphenol	ND	20								
2,4-Dinitrophenol	ND	20								

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**
04-Dec-14

Client: Western Refining Southwest, Gallup
Project: Hydrocarbon Seep

Sample ID **mb-16584**	SampType: **MBLK**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **PBW**	Batch ID: **16584**	RunNo: **22880**
Prep Date: **11/26/2014**	Analysis Date: **12/2/2014**	SeqNo: **675850** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
2,4-Dinitrotoluene	ND	10								
2,6-Dinitrotoluene	ND	10								
Fluoranthene	ND	10								
Fluorene	ND	10								
Hexachlorobenzene	ND	10								
Hexachlorobutadiene	ND	10								
Hexachlorocyclopentadiene	ND	10								
Hexachloroethane	ND	10								
Indeno(1,2,3-cd)pyrene	ND	10								
Isophorone	ND	10								
1-Methylnaphthalene	ND	10								
2-Methylnaphthalene	ND	10								
2-Methylphenol	ND	10								
3+4-Methylphenol	ND	10								
N-Nitrosodi-n-propylamine	ND	10								
N-Nitrosodimethylamine	ND	10								
N-Nitrosodiphenylamine	ND	10								
Naphthalene	ND	10								
2-Nitroaniline	ND	10								
3-Nitroaniline	ND	10								
4-Nitroaniline	ND	10								
Nitrobenzene	ND	10								
2-Nitrophenol	ND	10								
4-Nitrophenol	ND	10								
Pentachlorophenol	ND	20								
Phenanthrene	ND	10								
Phenol	ND	10								
Pyrene	ND	10								
Pyridine	ND	10								
1,2,4-Trichlorobenzene	ND	10								
2,4,5-Trichlorophenol	ND	10								
2,4,6-Trichlorophenol	ND	10								
Surr: 2-Fluorophenol	160		200.0		80.0	17.6	104			
Surr: Phenol-d5	160		200.0		81.3	17.7	89.9			
Surr: 2,4,6-Tribromophenol	160		200.0		78.0	16.3	122			
Surr: Nitrobenzene-d5	77		100.0		76.6	45.3	117			
Surr: 2-Fluorobiphenyl	80		100.0		80.2	43	113			
Surr: 4-Terphenyl-d14	89		100.0		89.1	47.6	122			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID **lcs-16584**	SampType: **LCS**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSW**	Batch ID: **16584**	RunNo: **22880**
Prep Date: **11/26/2014**	Analysis Date: **12/2/2014**	SeqNo: **675851** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	73.5	47.9	114			
4-Chloro-3-methylphenol	160	10	200.0	0	82.2	51.7	122			
2-Chlorophenol	150	10	200.0	0	73.6	40.7	113			
1,4-Dichlorobenzene	72	10	100.0	0	72.5	39.6	99.9			
2,4-Dinitrotoluene	60	10	100.0	0	60.0	40.8	113			
N-Nitrosodi-n-propylamine	83	10	100.0	0	83.2	51.2	111			
4-Nitrophenol	150	10	200.0	0	73.4	15.7	86.9			
Pentachlorophenol	130	20	200.0	0	65.7	21.6	104			
Phenol	170	10	200.0	0	83.2	28.6	71.7			S
Pyrene	74	10	100.0	0	73.7	54.2	128			
1,2,4-Trichlorobenzene	68	10	100.0	0	67.6	40.9	101			
Surr: 2-Fluorophenol	150		200.0		75.4	17.6	104			
Surr: Phenol-d5	160		200.0		78.8	17.7	89.9			
Surr: 2,4,6-Tribromophenol	150		200.0		75.4	16.3	122			
Surr: Nitrobenzene-d5	70		100.0		70.3	45.3	117			
Surr: 2-Fluorobiphenyl	72		100.0		71.9	43	113			
Surr: 4-Terphenyl-d14	86		100.0		85.6	47.6	122			

Sample ID **lcsd-16584**	SampType: **LCSD**	TestCode: **EPA Method 8270C: Semivolatiles**
Client ID: **LCSS02**	Batch ID: **16584**	RunNo: **22880**
Prep Date: **11/26/2014**	Analysis Date: **12/2/2014**	SeqNo: **675852** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Acenaphthene	74	10	100.0	0	73.7	47.9	114	0.163	27.2	
4-Chloro-3-methylphenol	160	10	200.0	0	80.6	51.7	122	1.93	25.9	
2-Chlorophenol	150	10	200.0	0	73.0	40.7	113	0.819	22.5	
1,4-Dichlorobenzene	69	10	100.0	0	68.7	39.6	99.9	5.30	24.6	
2,4-Dinitrotoluene	72	10	100.0	0	71.9	40.8	113	18.0	25.3	
N-Nitrosodi-n-propylamine	78	10	100.0	0	77.7	51.2	111	6.74	23.6	
4-Nitrophenol	170	10	200.0	0	85.8	15.7	86.9	15.7	34.7	
Pentachlorophenol	160	20	200.0	0	78.8	21.6	104	18.1	32.8	
Phenol	160	10	200.0	0	80.6	28.6	71.7	3.21	25.5	S
Pyrene	73	10	100.0	0	73.5	54.2	128	0.326	31.4	
1,2,4-Trichlorobenzene	62	10	100.0	0	61.6	40.9	101	9.35	25.9	
Surr: 2-Fluorophenol	130		200.0		67.0	17.6	104	0	0	
Surr: Phenol-d5	140		200.0		70.0	17.7	89.9	0	0	
Surr: 2,4,6-Tribromophenol	160		200.0		79.8	16.3	122	0	0	
Surr: Nitrobenzene-d5	64		100.0		64.2	45.3	117	0	0	
Surr: 2-Fluorobiphenyl	67		100.0		67.1	43	113	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411984**

04-Dec-14

Client: Western Refining Southwest, Gallup

Project: Hydrocarbon Seep

Sample ID	**lcsd-16584**	SampType:	**LCSD**	TestCode:	**EPA Method 8270C: Semivolatiles**					
Client ID:	**LCSS02**	Batch ID:	**16584**	RunNo:	**22880**					
Prep Date:	**11/26/2014**	Analysis Date:	**12/2/2014**	SeqNo:	**675852**	Units:	**µg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Terphenyl-d14	85		100.0		85.5	47.6	122	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **Western Refining Gallup** Work Order Number: **1411984** RcptNo: **1**

Received by/date: 11/22/14

Logged By: **Lindsay Mangin** **11/22/2014 8:37:00 AM**

Completed By: **Lindsay Mangin** **11/22/2014 10:09:42 AM**

Reviewed By: 11/24/14

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☑	No ☐	Not Present ☐
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☑	No ☐	No VOA Vials ☐
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.8	Good	Yes			

Chain-of-Custody Record

Client: WNR - GALLUP REFINERY

Mailing Address: ROUTE 3 BOX 7
GALLUP NM 87301

Phone #: 505-722-0231

email or Fax#: CHERYL.JOHNSON@WNR.COM

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
HYDROCARBON SEEP

Project #:

Project Manager:
CHERYL JOHNSON

Sampler: TRACY PAYNE

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1411984	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
11/21/14	0830	GW	MKTF-44	7	HCL/NEAT	-001			✓							✓	✓					
	0930	GW	MKTF-40			-002			✓							✓	✓					
	1040	GW	MKTF-38			-003			✓							✓	✓					
	1155	GW	MKTF-37			-004			✓							✓	✓					
	1240	GW	MKTF-35			-005			✓							✓	✓					
	1330	GW	MKTF-36			-006			✓							✓	✓					
↓	—	W	TRIP BLANK	3	HCL	-007			✓							✓						

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/22/14	0837				
Date:	Time:	Relinquished by:	Received by:	Date	Time
				11/22/14	0837

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

MKTF-35
N: 1633204.45 CENTER OF METAL LID
E: 2546011.60
Z: 6951.90 TOP CENTER OF METAL LID
Z: 6951.65 N. TOP OF PVC PIPE
Z: 6951.25 N. TOP OF INSIDE GROUND LINE
Z: 6951.90 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-36
N: 1633349.47 CENTER OF METAL LID
E: 2545982.58
Z: 6950.67 TOP CENTER OF METAL LID
Z: 6950.12 N. TOP OF PVC PIPE
Z: 6949.87 N. TOP OF INSIDE GROUND LINE
Z: 6950.67 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-37
N: 1633291.89 CENTER OF METAL LID
E: 2546216.67
Z: 6959.07 TOP CENTER OF METAL LID
Z: 6958.87 N. TOP OF PVC PIPE
Z: 6958.62 N. TOP OF INSIDE GROUND LINE
Z: 6959.07 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-38
N: 1633451.01 CENTER OF METAL LID
E: 2546222.09
Z: 6955.17 TOP CENTER OF METAL LID
Z: 6954.89 N. TOP OF PVC PIPE
Z: 6954.54 N. TOP OF INSIDE GROUND LINE
Z: 6955.17 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-39
N: 1633729.23 CENTER OF METAL LID
E: 2546265.99
Z: 6953.97 TOP CENTER OF METAL LID
Z: 6953.75 N. TOP OF PVC PIPE
Z: 6953.12 N. TOP OF INSIDE GROUND LINE
Z: 6953.97 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-40
N: 1634085.50 CENTER OF METAL LID
E: 2544637.81
Z: 6894.73 TOP CENTER OF METAL LID
Z: 6894.33 N. TOP OF PVC PIPE
Z: 6890.48 N. TOP OF INSIDE GROUND LINE
Z: 6891.35 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-41
N: 1633499.80 CENTER OF METAL LID
E: 2544567.57
Z: 6894.13 TOP CENTER OF METAL LID
Z: 6893.64 N. TOP OF PVC PIPE
Z: 6889.80 N. TOP OF INSIDE GROUND LINE
Z: 6891.11 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-42
N: 1633078.09 CENTER OF METAL LID
E: 2544678.55
Z: 6893.27 TOP CENTER OF METAL LID
Z: 6892.95 N. TOP OF PVC PIPE
Z: 6888.75 N. TOP OF INSIDE GROUND LINE
Z: 6890.42 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-43
N: 1633490.97 CENTER OF METAL LID
E: 2544190.23
Z: 6877.40 TOP CENTER OF METAL LID
Z: 6876.90 N. TOP OF PVC PIPE
Z: 6873.22 N. TOP OF INSIDE GROUND LINE
Z: 6874.12 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-44
N: 1633681.48 CENTER OF METAL LID
E: 2542981.45
Z: 6870.32 TOP CENTER OF METAL LID
Z: 6869.95 N. TOP OF PVC PIPE
Z: 6866.06 N. TOP OF INSIDE GROUND LINE
Z: 6867.41 N. TOP OF OUTSIDE CONCRETE PAD

MKTF-45
N: 1633308.57 CENTER OF METAL LID
E: 2545912.37
Z: 6951.33 TOP CENTER OF METAL LID
Z: 6949.59 N. TOP OF PVC PIPE
Z: 6948.27 N. TOP OF INSIDE GROUND LINE
Z: 6948.63 N. TOP OF OUTSIDE CONCRETE PAD

SYMBOLS LEGEND
Ⓦ MONITORING WELL

NOTES

1 FIELD SURVEY PERFORMED DECEMBER 16, 2014, 10:30 a.m. to 4:30 p.m. & JANUARY 12, 2015, 10:30 – a.m. to 11:00 a.m.

2 FIELD MEASUREMENTS PERFORMED UTILIZING THALES 'Z-MAX' BASE AND ROVER G.P.S. SYSTEM WHICH CAN NOT BE CALIBRATED. INSIDE AND OUTSIDE APPURTENANT MEASUREMENTS PERFORMED WITH STEEL TAPE.

3 STATE PLANE COORDINATES BASED ON THE BRASS CAP 1-040-105 USING DIFFERENTIAL G.P.S. DERIVED MEASUREMENTS.

4 THE COORDINATES SHOWN ARE N.M. STATE PLANE WEST ZONE GRID COORDINATES, ELEVATIONS ARE NGVD29 (ADD 3.37 TO REACH NAVD88 DATUM AND AN ADDITIONAL 1.14 TO REACH EXISTING WESTERN REFINING TOPOGRAPHC SURVEY DATUM WHICH IS SHOWN HEREON).

CLYDE J. KING NEW MEXICO 13979 REGISTERED PROFESSIONAL SURVEYOR

SURVEYOR'S CERTIFICATE

I, Clyde J. King, a New Mexico Professional Surveyor do hereby certify that this plat was prepared from a field survey performed by me or under my direct supervision, that I am responsible for this survey, that this survey is true and correct to the best of my knowledge and belief, that this plat and the field survey upon which it is based meet the Minimum Standards for Surveying in New Mexico and that this survey is not a land division or subdivision as defined by the New Mexico Subdivision Act.

Clyde J. King, PS13979 — Date: 1-16-15

MONITORING WELL SURVEY
in Section 33, T15N, R15W, N.M.P.M., Western Refining, Jamestown, McKinley County, New Mexico, U.S.A.

H.E.I. HAMMON ENTERPRISES, INC.
PROFESSIONAL LAND SURVEYING SERVICES
P. O. Box 770 ■ Ramah, NM 87321 ■ Tel: (505) 870-6901 ■ HEISurveys Yahoo.com

141216 MW DATA.DWG DRAWN BY: AH CHECKED BY: CK DATE: 1-16-15 REV. DATE: xxx