

AP - 111

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

2016

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Toxicity and Chemical-specific Information													Screening Levels						Protection of Ground Water SSLs																				
SFO	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	k _{ow}	RD ₅₀	GIABS	ABS	C _{mt}	Analyte	CAS No.	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Resident Air (ug/m ³)	Industrial Air (ug/m ³)	Tapwater (ug/L)	MCL (ug/L)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Resident Air (ug/m ³)	Industrial Air (ug/m ³)	Tapwater (ug/L)	MCL (ug/L)	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Resident Air (ug/m ³)	Industrial Air (ug/m ³)	Tapwater (ug/L)	MCL (ug/L)			
9.5E-04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Iron	7439-89-6	5.5E+04	8.2E+05	nm	1.4E+04	key			3.5E+02	nm	3.5E+02	nm	3.5E+02	nm	3.5E+02	nm	3.5E+02	nm	3.5E+02	nm		
3.0E-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isobutyl Alcohol	78-83-1	2.3E+04	ns	3.3E+05	nm	5.9E+03	n	5.9E+03	n	1.2E+00	n	1.2E+00	n	1.2E+00	n	1.2E+00	n	1.2E+00	n			
2.0E-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isophorone	78-59-1	5.7E+02	c	2.4E+03	c	2.1E+03	n	8.8E+03	n	7.8E+01	c	2.6E+02	c	2.6E+02	c	2.6E+02	c	2.6E+02	c	2.6E+02	c	
1.5E-02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isopropanol	33820-53-0	1.2E+03	n	1.4E+04	n	4.0E+01	n	4.0E+01	n	9.2E+01	n	9.2E+01	n	9.2E+01	n	9.2E+01	n	9.2E+01	n	9.2E+01	n	
2.0E+00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isopropanol	67-63-0	5.6E+03	n	2.4E+04	n	2.1E+02	n	8.8E+02	n	4.1E+02	n	8.4E+02	n	8.4E+02	n	8.4E+02	n	8.4E+02	n	8.4E+02	n	
1.0E-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isopropyl Methyl Phosphonic Acid	1832-54-8	6.3E+03	n	8.3E+04	n	6.3E+02	n	2.0E+03	n	4.3E+01	n	4.3E+01	n	4.3E+01	n	4.3E+01	n	4.3E+01	n	4.3E+01	n	
5.0E-02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Isosabten	82558-50-7	3.2E+03	n	4.1E+04	n	7.3E+02	n	2.0E+00	n	2.0E+00	n	2.0E+00	n	2.0E+00	n	2.0E+00	n	2.0E+00	n	2.0E+00	n	
2.0E-03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	JP-7	NA	4.3E+08	nm	1.6E+09	nm	3.1E+02	n	1.3E+03	n	6.3E+02	n	1.2E+00	n	1.2E+00	n	1.2E+00	n	1.2E+00	n	1.2E+00	n	
3.0E-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lactofen	77501-63-4	1.3E+02	n	1.6E+03	n	2.5E+01	n	2.5E+01	n													
5.0E-01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lead Compounds	7758-97-6	3.0E+01	c	6.2E+00	c	8.2E+05	c	4.1E+02	c													
8.5E-03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lead Chromate	7446-21-7	8.2E+01	c	3.8E+02	c	2.3E+01	c	1.0E+00	c	9.1E+00	c											
8.5E-03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lead Phosphate	301-04-2	6.4E+01	c	2.7E+02	c	2.3E+01	c	1.0E+00	c	9.2E+00	c											
8.5E-03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lead acetate	7439-92-1	4.0E+02	L	8.0E+02	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	1.5E+01	L	
1.0E-07	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Lead and Compounds	1335-32-6	6.4E+01	c	2.7E+02	c	2.3E+01	c	1.0E+00	c	9.2E+00	c											
3.0E-02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Tetraethyl Lead	78-00-2	7.8E+03	n	1.5E+01	n	9.0E+02	n	1.3E+03	n	1.3E+03	n	4.7E+06	n	4.7E+06	n	4.7E+06	n	4.7E+06	n	4.7E+06	n	
5.0E+06	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Leisite	51-25-3	3.9E+01	n	5.2E+00	n	9.0E+02	n	9.0E+02	n	3.8E+05	n	3.8E+05	n	3.8E+05	n	3.8E+05	n	3.8E+05	n			
2.0E+03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Linuron	330-55-2	1.6E+02	n	2.3E+03	n	4.0E+01	n	4.0E+01	n	2.9E+02	n	2.9E+02	n	2.9E+02	n	2.9E+02	n	2.9E+02	n	2.9E+02	n	
5.0E+04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	MCPA	94-74-6	3.2E+01	n	4.1E+02	n	7.5E+00	n	7.5E+00	n	2.0E+03	n	2.0E+03	n	2.0E+03	n	2.0E+03	n	2.0E+03	n	2.0E+03	n	
1.0E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	MCPB	94-81-5	6.3E+02	n	8.2E+03	n	1.5E+02	n	1.5E+02	n	5.8E+02	n	5.8E+02	n	5.8E+02	n	5.8E+02	n	5.8E+02	n	5.8E+02	n	
1.0E+03	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	MCPP	93-65-2	6.3E+01	n	8.2E+02	n	1.6E+01	n	1.6E+01	n	4.7E+03	n	4.7E+03	n	4.7E+03	n	4.7E+03	n	4.7E+03	n	4.7E+03	n	
2.0E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Malathion	121755-5	1.3E+03	n	1.6E+04	n	3.9E+02	n	3.9E+02	n	1.0E+01	n	1.0E+01	n	1.0E+01	n	1.0E+01	n	1.0E+01	n	1.0E+01	n	
1.0E+01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Maleic Anhydride	108-31-6	6.3E+03	n	8.0E+04	n	1.9E+03	n	1.9E+03	n	3.8E+01	n	3.8E+01	n	3.8E+01	n	3.8E+01	n	3.8E+01	n	3.8E+01	n	
3.0E+01	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Maleic Hydrate	123-33-1	3.2E+04	n	4.1E+05	nm	1.0E+04	n	1.0E+04	n	2.1E+00	n	2.1E+00	n	2.1E+00	n	2.1E+00	n	2.1E+00	n	2.1E+00	n	
1.0E+04	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Malonitrile	109-77-3	6.3E+00	n	8.2E+01	n	2.0E+00	n	2.0E+00	n	4.1E+04	n	4.1E+04	n	4.1E+04	n	4.1E+04	n	4.1E+04	n	4.1E+04	n	
3.0E+02	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Mancosb	8018-01-7	1.9E+03	n	2.9E+04	n	5.4E+02	n	5.4E+02	n	7.6E+01	n	7.6E+01	n	7.6E+01	n	7.6E+01	n	7.6E+01	n	7.6E+01	n	
3.0E+02	P	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Maneb	12427-38-2	3.2E+02	n	4.1E+03	n	9.8E+01	n	9.8E+01	n	1.4E+01	n	1.4E+01	n	1.4E+01	n	1.4E+01	n	1.4E+01	n	1.4E+01	n	
2.5E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Manganese (Det)	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
2.5E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Manganese (Non-diet)	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
9.0E+05	H	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Mephosfolan	950-10-7	5.7E+00	n	7.4E+01	n	1.8E+00	n	1.8E+00	n	2.6E+03	n	2.6E+03	n	2.6E+03	n	2.6E+03	n	2.6E+03	n	2.6E+03	n	
3.0E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Mepiquat Chloride	24307-26-4	1.9E+03	n	2.9E+04	n	6.0E+02	n	6.0E+02	n	2.0E+01	n	2.0E+01	n	2.0E+01	n	2.0E+01	n	2.0E+01	n	2.0E+01	n	
3.0E+04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Mercury Compounds	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
3.0E+04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Mercuro Chloride (and other Mercury salts)	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
8.0E+05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methyl Mercury	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
3.0E+05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methyl Mercury	7439-96-5	1.8E+03	n	2.8E+04	n	5.2E+02	n	2.2E+01	n	4.3E+02	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	2.8E+01	n	
6.0E+02	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methylmercaptic Acetate	62-38-1	5.1E+00	n	6.8E+01	n	1.6E+00	n	1.6E+00	n	5.0E+04	n	5.0E+04	n	5.0E+04	n	5.0E+04	n	5.0E+04	n	5.0E+04	n	
3.0E+05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methylmercaptic Oxide	150-50-5	2.3E+00	n	3.3E+01	n	6.0E+01	n	6.0E+01	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	
3.0E+05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methylmercaptic Oxide	150-50-5	2.3E+00	n	3.3E+01	n	6.0E+01	n	6.0E+01	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	5.9E+02	n	
1.0E+04	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methylmercaptic Oxide	57837-19-1	3.8E+03	n	4.3E+04	n	1.2E+03	n	1.2E+03	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	
5.0E+05	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methylmercaptic Oxide	57837-19-1	3.8E+03	n	4.3E+04	n	1.2E+03	n	1.2E+03	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	4.3E+04	n	
2.0E+00	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	Methanediol	67-58-2	1.2E+05	n	1.2E+06	nm	2.1E+04	n	8.8E+04	n	2.0E+04	n	2.1E+04	n	2.1E+04	n	2.1E+04	n	2.1E+04	n	2.1E+04	n	
1.0E+03	1																																						

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Toxicity and Chemical-Specific Information																	Screening Levels										Protection of Ground Water SSLs									
SFO (mg/kg-day) ¹	k	e	IUR (ug/m ³ -day) ¹	RfD _c (mg/kg-day) ¹	k	e	RC (mg/m ³) ¹	k	e	RI _c (mg/m ³) ¹	k	e	RI _s (mg/m ³) ¹	GIABS	ABS	C _{sat} (mg/kg)	Analyte	CAS No.	Resident Soil (mg/kg)	key	Industrial Soil (mg/kg)	key	Resident Air (ug/m ³)	key	Industrial Air (ug/m ³)	key	Tapwater (ug/L)	key	MCL (ug/L)	key	SSL (mg/kg)	key	MCL-based SSL (mg/kg)			
Key: I = IRIS; P = PPRVT; A = ATSDR; C = Cal EPA; X = See FAQ #27; H = HEAST; F = See user guide Section 2.3.5; L = See user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic polices); c = cancer; n = noncancer; * = where n SL < 100; e SL; ** = where n SL < 10X; SL values are based on DAF=1; m = Concentration may exceed ceiling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)																																				
2.2E-03	C	6.3E-07	C	2.5E-01	I	2.0E-01	C	1	0.1									-Perchlorate and Perchlorate Salts	14797-73-0	5.5E+01	n	8.2E+02	n						1.4E+01	n	1.5E+01(F)	n				
																		-Potassium Perchlorate	7778-74-7	5.5E+01	n	8.2E+02	n						1.4E+01	n						
																		-Sodium Perchlorate	7601-85-0	5.5E+01	n	8.2E+02	n						1.4E+01	n						
																		Perfluorobutane Sulfonate	375-73-5	1.8E+03	n	2.1E+04	n						3.8E+02	n						
																		Permethrin	52645-53-1	3.2E+03	n	4.1E+04	n						1.0E+03	n						
																		Phenacetin	62-44-2	2.9E+02	c	1.1E+03	c	4.5E+00	c	1.9E+01	c	3.4E+01	c							
																		Phenacetylphenol	13684-63-4	1.8E+04	n	2.1E+05	nm						4.0E+03	n						
																		Phenol	108-95-2	1.9E+04	n	2.5E+05	nm	2.1E+02	n	8.8E+02	n	5.8E+03	n							
																		Phenol, 2-(1-methylethoxy)-, methylcarbamate	114-26-1	2.9E+02	n	3.3E+03	n						7.8E+01	n						
																		Phenothiazine	92-84-2	3.2E+01	n	4.1E+02	n						4.3E+00	n						
4.7E-02	H																	Phenylendiamine, o-	95-54-5	1.2E+01	c	4.5E+01	c						1.8E+00	c						
																		Phenylendiamine, p-	106-50-3	1.2E+04	n	1.6E+05	nm						3.8E+03	c						
																		Phenylphenol, 2-	90-43-7	2.8E+02	c	1.2E+03	c						3.0E+01	c						
																		Phorate	298-02-2	1.3E+01	n	1.6E+02	n						3.1E+00	n						
																		Phosgene	75-44-5	3.1E+01	n	1.3E+00	n						3.0E+00	n						
																		Phosmet	732-11-5	1.3E+03	n	1.6E+04	n						3.7E+02	n						
																		Phosphates, inorganic																		
																		-Aluminum metaphosphate	13776-88-0	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Ammonium polyphosphate	68333-79-9	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Calcium pyrophosphate	7790-76-3	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
1.9E-03	H																	-Diammonium phosphate	7783-28-0	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Dicalcium phosphate	7757-93-9	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Dimagnesium phosphate	7782-75-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Dipotassium phosphate	7758-11-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Disodium phosphate	7558-75-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Monocalcium phosphate	13530-50-2	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Monopotassium phosphate	7722-76-1	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Monosodium phosphate	7758-23-8	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Nonammonium phosphate	7757-86-0	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Triethyl phosphite	8017-1E-3	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
2.0E-04	H																	-Potassium triphosphite	13845-36-8	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium acid pyrophosphate	7758-1E-8	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium aluminum phosphate (acidic)	7785-98-9	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium aluminum phosphate (amorphous)	10279-59-1	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium aluminum phosphate (tetrahydrate)	10352-76-7	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium hexacaphosphate	10124-56-8	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium polyphosphate	6385-01-1	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Sodium tripolyphosphate	7783-01-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Tetrasodium pyrophosphate	7782-31-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Tetrasodium pyrophosphate	7722-83-5	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
2.0E-05	S	5.7E-04	S	6.0E-05	S	5.7E-04	S	1	0.14									-Trialluminum sodium tetra decahydrogenorthophosphate (dihydrate)	15156-37-5	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Tricalcium phosphate	7759-91-4	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Trimagnesium phosphate	7757-82-1	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Tripotassium phosphate	7778-53-2	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		-Trisodium phosphate	7601-54-9	3.8E+06	nm	5.7E+07	nm						9.7E+05	n						
																		Phosphine	7803-51-2	2.3E+01	n	1.3E+02	n						5.7E+01	n						
																		Phosphoric Acid	7664-38-2	3.0E+06	nm	2.1E+07	nm						9.7E+05	n						
																		Phosphorus, White	7723-14-0	1.6E+00	n	2.1E+01	n						4.5E+01	n						
																		Phthalates																		
																		-Bis(2-ethylhexyl)phthalate	117-81-7	3.9E+01	c*	1.5E+02	c						5.5E+00	c*						
2.0E+00	S	5.7E-04	S	6.0E-05	S	5.7E-04	S	1	0.14									-Butyl Benzyl Phthalate	85-98-7	2.9E+02	c*	1.2E+03	c						1.3E+01	c						
																		-Butylphenyl Butylglycolate	85-70-1	6.3E+04	n	8.2E+05	nm						1.3E+04	c						
			</																																	

[illegible]

Key: I = IRIS; P = PPRVT; A = ATSDR; C = Cal EPA; X = APPENDIX PPRTV SCREEN (See FAQ #27); H = HEAST; F = See FAQ; J = New Jersey; O = EPA Office of Water; E = see user guide Section 2.3.5; L = see user guide on lead; M = nutrient; S = see user guide Section 5; V = volatile; R = RBA applied (See User Guide for Arsenic notice); c = cancer; n = noncancer; * = where, n SL < 100x c SL; ** = where n SL < 10x c SL. SSL values are based on DAF=1; m = Concentration may exceed calling limit (See User Guide); s = Concentration may exceed Csat (See User Guide)

Toxicity and Chemical-Specific Information										Contaminant		Screening Levels						Protection of Ground Water SSLs			
SFO (mg/kg-day) ⁻¹	UR (μg/m ³)	K _d (mg/kg) ⁻¹	RDC ₅₀ (mg/kg-day) ⁻¹	RIC (mg/m ³)	K _{ow}	log K _{ow}	GIABS	ABS	C _u	Analyte	CAS No.	Resident Soil (mg/kg)	Industrial Soil (mg/kg)	Resident Air (ug/m ³)	Industrial Air (ug/m ³)	Tapwater (key)	MCL (ug/L)	SSL (mg/kg)	SSL (mg/kg)		
2.7E-01	H	3.0E-02	1	1	0.1					Sodium Diethyldithiocarbamate	148-18-5	2.0E+00	8.3E+00	c	8.3E+00	c	2.9E-01	c	1.8E-04	c	
5.9E-02	A	1.3E-02	C	1	0.1					Sodium Fluoride	7681-49-4	3.9E+03	5.9E+04	n	1.4E+01	n	5.7E+01	n	8.1E-05	n	
2.0E-05		1.0E-03	H	1	0.1					Sodium Fluoroacetate	62-74-8	1.3E+00	1.9E+01	n			4.0E+01	n			
8.0E-04	P	1.0E-03	H	1	0.1					Sodium Metavanadate	13718-26-8	7.8E+01	1.3E+03	n			2.0E+01	n			
8.0E-04	P	1.0E-03	H	1	0.1					Sodium Tungstate	13472-45-2	6.3E+01	9.3E+02	n			1.6E+01	n			
2.4E-02	H	3.0E-02	C	1	0.1					Sodium Tungstate Dihydrate	10213-10-2	6.3E+01	9.3E+02	n			1.6E+01	n			
5.0E-01	C	1.5E-01	C	M	0.025					Stirofos (Tetrachlorovinphos)	961-11-5	2.3E+01	c [*]	9.3E+01	c	2.8E+00	c	8.2E+03	c		
2.0E-02	C	2.0E-02	C	0.04	C					Sironium Chromate	7789-06-2	3.0E+01	6.2E+00	c	6.8E+06	c	8.2E+05	c	4.1E+02	c	
6.0E-01	H	1.0E-03	C	1	0.1					Sronitum, Stable	7440-21-6	4.7E+04	7.0E+05	nm			1.2E+04	c	4.2E+02	n	
3.0E-04	I	1.0E-03	C	1	0.1					Strychnine	57-24-5	1.9E+01	n	2.3E+02	n		5.9E+00	n	6.5E+02	n	
2.0E-01	C	1.0E+00	I	V	1	0.1			8.7E-02	Styrene	100-42-5	6.0E+03	ns	3.3E+04	ns	1.0E+03	n	1.2E+03	n	1.3E+00	n
3.0E-03	P	1.0E-03	C	1	0.1					Styrene-Acrylonitrile (SAN) Trimer	NA	1.9E+02	n	2.3E+03	n		4.8E+01	n			
1.0E-03	P	2.0E-03	X	1	0.1					Sulfidane	126-33-0	6.3E+01	n	8.3E+02	n	2.1E+00	n	8.8E+00	n	4.4E+03	n
8.0E-04	P	1.0E-03	C	1	0.1					Sulfonbis(4-chlorobenzene), 1,1'-	80-07-5	5.1E+01	n	6.9E+02	n		2.0E+01	n	6.5E+02	n	
1.0E-03	P	1.0E-03	C	1	0.1					Sulfur Trioxide	7446-11-9	1.4E+06	nm	6.0E+06	nm	1.0E+00	n	4.4E+00	n	1.1E+01	n
5.0E-02	H	1.0E-03	C	1	0.1					Sulfuric Acid	7664-93-9	1.4E+06	nm	6.0E+06	nm	1.0E+00	n	4.4E+00	n	1.5E+02	c
3.0E-02	H	1.0E-03	C	1	0.1					Sulfurous acid, 2-chloroethyl 2-(4-(1,1-dimethylethyl)phenoxy)-1-methylethyl ester	140-57-0	2.2E+01	c	9.2E+01	c	4.0E+01	c	1.7E+00	c	3.3E+00	n
7.0E-02	H	1.0E-03	C	1	0.1					TCMTB	21564-17-0	1.9E+03	n	2.3E+04	n		1.3E+00	c	4.5E+06	c	
2.0E-02	H	1.0E-03	C	1	0.1					Tebuthiuron	34014-18-1	4.4E+03	n	5.7E+04	n		1.4E+03	n	3.9E+01	n	
2.0E-02	H	1.0E-03	C	1	0.1					Tenophos	3383-98-8	1.3E+03	n	1.9E+04	n		4.0E+02	n	7.6E+01	n	
1.3E-02	H	1.0E-03	C	1	0.1					Terbacil	5902-51-2	8.2E+02	n	1.1E+04	n		2.5E+02	n	7.5E+02	n	
2.3E-05	H	1.0E-03	C	1	0.1					Terbufos	13071-79-9	2.0E+00	n	2.3E+01	n		2.4E+01	n	5.2E+04	n	
1.0E-03	I	1.0E-03	C	1	0.1					T	886-50-0	6.3E+01	n	8.2E+02	n		1.3E+01	n	1.9E+02	n	
1.0E-04	I	1.0E-03	C	1	0.1					Tetrabromodiphenyl ether, 2,2',4,4'-(BDE-47)	5436-43-1	6.3E+00	n	8.3E+01	n		2.0E+00	n	5.3E+02	n	
3.0E-04	I	1.0E-03	C	1	0.1					Tetrachlorobenzene, 1,2,4,5-	95-94-3	2.3E+01	n	3.3E+02	n		1.7E+00	n	7.9E+03	n	
2.0E-02	I	7.4E-06	I	3.0E+02	I				6.8E-02	Tetrachloroethane, 1,1,1,2-	630-20-6	2.0E+00	c	8.3E+00	c	3.8E+01	c	1.7E+00	c	2.2E+04	c
2.0E-01	I	5.8E-05	C	2.0E+02	I				1.9E-03	Tetrachloroethane, 1,1,1,2-	79-34-5	6.0E+01	c ^{**}	1.0E+02	c ^{**}	1.1E+01	c ^{**}	7.6E+02	c	3.0E+05	c
2.0E-03	I	2.6E-07	I	6.0E+03	I				1.7E-02	Tetrachloroethylene	127-18-4	2.4E+01	c ^{**}	1.0E+02	c ^{**}	1.1E+01	c ^{**}	1.1E+01	c ^{**}	5.1E+03	c ^{**}
3.0E-02	I	3.0E+02	I	3.0E+02	I				0.1	Tetrachlorophenol, 2,3,4,6-	58-90-2	1.9E+03	n	2.3E+04	n		2.4E+02	n	1.8E+01	c	
5.0E-04	I	8.0E+01	I	V	1	0.1			2.1E-03	Tetrachlorophenol, p-alpha, alpha, alpha-	5216-25-1	3.5E+02	c	1.8E+01	c		1.3E+03	c	4.5E+06	c	
2.0E-05	S	2.0E-05	S	1	0.1					Tetraethyl Dithiophosphosphate	3689-24-5	3.2E+01	n	4.1E+02	n		7.1E+00	n	5.2E+03	n	
2.0E-05	X	1.0E+05	X	1	0.1				7E-04	Tetrafluoroethane, 1,1,1,2-	10102-45-1	1.0E+05	nms	4.3E+05	nms	8.3E+04	n	3.5E+05	n	9.3E+01	n
1.0E-05	X	1.0E-05	X	1	0.1					Tetryl (Trinitrophenylmethylnitramine)	1191-97-2	1.6E+02	n	2.3E+03	n		3.9E+01	n	3.7E+01	n	
1.0E-05	X	1.0E-05	X	1	0.1					Thallic Oxide	1314-32-3	1.6E+00	n	2.3E+01	n		4.0E+01	n			
2.0E-05	X	1.0E-05	X	1	0.1					Thallium (I) Nitrate	78E-01	1.3E+01	n	1.2E+01	n		2.0E+01	n			
7.0E-02	X	1.0E-02	X	1	0.008					Thallium (Soluble Salts)	7440-23-0	7.8E-01	n	1.2E+01	n		2.0E+01	n			
3.0E-04	H	1.0E-05	X	V	1	0.1				Thallium Acetate	583-86-8	7.8E-01	n	1.2E+01	n		2.0E+01	n			
2.0E-05	X	1.0E-05	X	V	1	0.1				Thallium Carbonate	6533-73-9	1.6E+00	n	2.3E+01	n		4.0E+01	n	8.3E+05	n	
1.0E-05	X	1.0E-05	X	1	0.1					Thallium Chloride	7791-12-0	7.8E-01	n	1.2E+01	n		2.0E+01	n			
1.0E-05	S	1.0E-05	S	1	0.1					Thallium Selenite	12039-52-0	7.8E-01	n	1.2E+01	n		2.0E+01	n			
2.0E-05	X	1.0E-05	X	1	0.1					Thallium Sulfate	7440-18-6	1.6E+00	n	2.3E+01	n		4.0E+01	n	7.8E+02	n	
1.3E-02	I	1.0E-02	I	1	0.1					Thiensiulfuron-methyl	79277-27-3	8.2E+02	n	1.1E+04	n		2.6E+02	n			
1.0E-02	I	1.0E-02	I	1	0.1					Thiobencarb	282-99-77-6	6.3E+02	n	8.3E+03	n		1.6E+02	n	5.5E+01	n	
7.0E-02	X	1.0E-02	X	1	0.008					Thiodiglycol	111-48-8	5.4E+03	n	7.9E+04	n		1.4E+03	n	2.8E+01	n	
3.0E-04	H	1.0E-04	H	1	0.1					Thiofanox	39196-18-4	1.9E+01	n	2.3E+02	n		5.3E+03	n	1.8E+03	n	
8.0E-02	I	1.0E-02	I	1	0.1					Thiophanate, Methyl	21584-05-8	5.1E+03	n	6.9E+04	n		1.6E+03	n	1.4E+00	n	
5.0E-03	H	1.0E-03	H	1	0.1					Thiram	137-26-8	3.2E+02	n	4.1E+03	n		9.8E+01	n	1.4E+01	n	
6.0E-01	H	1.0E-04	A	V	1	0.1				Tin	7440-31-5	4.7E+04	n	7.0E+05	nm		1.2E+04	n	3.0E+03	n	
8.0E-02	I	5.0E+00	I	V	1	0.1			8.2E-02	Titanium Tetrachloride	7550-45-0	1.4E+05	nm	6.0E+05	nm	1.0E+01	n	4.4E+01	n	7.6E+01	n
2.0E-04	X	2.0E-04	X	1	0.1					Toluene	108-88-3	4.9E+03	ns	4.7E+04	ns	5.2E+03	n	2.2E+04	n	2.5E+04	n
1.8E-01	X	1.1E-05	C	1	0.1					Toluene-2,4-disocyanate	95-84-9	6.4E+00	n	2.7E+01	n		3.5E+02	n	1.3E+04	c ^{**}	
1.6E-02	P	5.1E-05	C	1	0.1				1.7E-03	Toluene-2,6-disocyanate	95-70-5	3.0E+00	c ^{**}	1.3E+01	c [*]		4.3E+01	c ^{**}	2.6E+04	c	
3.0E-02	P	4.0E-03	X	1	0.1					Tolidine, o- (Methylaniline, 2-)	95-53-4	3.4E+01	c	1.4E+02	c	8.5E+03	n	3.5E+02	n	2.0E+03	c
4.0E-03	X	4.0E-03	X	1	0.1					Tolidine, p-	106-48-0	1.8E+01	c [*]	7.7E+01	c [*]		2.5E+00	c [*]	1.1E+03	c [*]	
3.0E+00	P	6.0E+01	P	V	1	0.1			3.4E-01	Total Petroleum Hydrocarbons (Aliphatic High)	NA	2.3E+05	nms	3.3E+06	nms		6.0E+04	n	2.4E+03	n	
1.0E-02	X	1.0E+01	P	V	1	0.1			6.9E-00	Total Petroleum Hydrocarbons (Aliphatic Low)	NA	5.2E+02	ns	2.2E+03	ns		1.3E+03	n	8.8E+00	n	
4.0E-02	P	3.0E-02	P	V	1	0.1				Total Petroleum Hydrocarbons (Aromatic High)	NA	9.6E+01	ns	4.4E+02	ns	1.0E+02	n	1.0E+02	n	1.5E+00	n
4.0E-03	P	3.0E-02	P	V	1	0.1				Total Petroleum Hydrocarbons (Aromatic Low)	NA	2.5E+03	n	3.3E+04	n		8.0E+02	n	8.9E+01	n	
4.0E-03	P	3.0E-03	P	V	1	0.1			1.8E-03	Total Petroleum Hydrocarbons (Aromatic Low)	NA	8.2E+01	n	4.3E+02	n	3.1E+01	n	1.7E+02	n	1.7E+02	n
1.1E+00	I	3.2E-04	I	3.0E+03	P	V	1	0.1		Total Petroleum Hydrocarbons (Aromatic Medium)	NA	1.1E+02	n	6.0E+02	n	3.1E+00	n	3.5E+00	n	2.3E+02	n
7.5E-03	A	1.0E+00	I	V	1	0.1				Toxaphene	8001-35-2	4.9E+01	c	2.1E+00	c	8.8E+03	c	3.8E+02	c	1.1E+02	c
3.0E-04	I	3.0E-04	I	1	0.1					Triacetin	688-72-3	2.3E+01	n	3.5E+02	n		3.7E+00	n	8.2E+02	n	
8.0E+01	X	1.0E+01	X	1	0.1					Triadimethin	68841-25-6	5.1E+06	nm	6.8E+07	nm		1.6E+06	n	4.5E+02	n	
3.0E-02	I	1.0E-02	I	1	0.1					Triadimethin	43121-43-3	1.9E+03	n	2.3E+04	n		5.5E+02	n	4.4E+01	n	
1.3E-02	I	1.0E-02	I	1	0.1					Triallate	2303-17-5	1.0E+03	n	1.5E+04	n		1.2E+02	n	2.6E+01	n	
1.0E-02	I	1.0E-02	I	1	0.1					Triasulfuron	82097-50-5	6.3E+02	n	8.2E+03	n		2.0E+02	n	2.1E+01	n	
8.0E-03	I	1.0E-03	I	1	0.1					Tribenuron-methyl	101200-48-0	5.1E+02	n	6.8E+03	n		1.6E+02	n	6.1E+02	n	
5.0E-03	I	1.0E-03	I	1	0.1					Tribromobenzene, 1,2,4-	615-54-3	3.9E+02	n	5.9E+03	n		4.5E+01	n	6.4E+02	n	
1.0E-02	P	1.0E-02	P	1	0.1					Tributyl Phosphate	126-73-8	6.0E+01	c [*]	2.8E+02	c [*]		5.2E+00	c [*]	2.5E+02	c [*]	
3.0E-04	I	3.0E-04	I	1	0.1					Tributyltin Compounds	NA	1.9E+01	n	2.3E+02	n		6.0E+00	n			
3.0E-04	I	3.0E-04	I	1	0.1					Tributyltin Oxide	56-35-5	1.9E+01	n	2.3E+02	n		5				

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2016 Major Refinery Activities and Events

January

- The annual Financial Assurance Cost Estimate was sent to the HWB.

February

- Approval With Modifications Investigation Work Plan OW-29 & OW-30 and North Drainage Ditch Areas

March

- The semi-annual pond sampling conducted.
- Annual Facility Wide Ground Water Monitoring Work Plan for 2017 submitted

April

- Submit Revised Facility Wide GW Monitoring Work Plan- 2012 Updates; 2013 Updates; 2014 Updates for 2015
- Submit Revised Investigation Report SWMU 1 Aeration Basin and SWMU 14 Old API Separator

May

- Implement Investigation Work Plan for OW-29 and OW-30 Area and North Drainage Ditch
- Implement Investigation Work Plan for SWMUs 4 and 5
- Rejection Response to NMED Disapproval Revised Investigation Report SWMU 1 Aeration Basin and SWMU 14 Old API Separator
- Approval Extension Request Facility-Wide Ground Water Monitoring Work Plan - 2015 Updates

July

- Submit revised Interim Measures Report HC Seep Area
- Submit response to Notice of Violation regarding soil remediation during repair of wastewater pipeline

August

- Conducted annual groundwater sampling.

September

- The semi-annual pond sampling conducted.

October

- Submit third quarter status report for hydrocarbon seep area

December

- Submit SWMU 10 Investigation Report

Year 2016

- During numerous months of 2016, contractors performed repair/improvements to the evaporation pond earthen berms improving slope and stability.

2016 SPILL SUMMARY

January 2, 2016 – T-583 Ultra Low Sulfur Diesel

At 2040 hr on January 2, the offsites supervisor discovered the sandpiper pump for the distillate rundown line going to T-583 was leaking product to the ground surface. All liquid was contained within an earthen dike within the tank farm. The line was immediately blocked in. It was estimated that 34 bbls of Ultra Low Sulfur Diesel was spilled to the ground surface. The onsite vacuum truck began removing liquid from the spill area removing 30 to 32 bbls. Field screening was conducted and soil contamination was excavated and 139,188 pounds of non-hazardous soil was placed into lined roll-off boxes and shipped offsite for disposal.

January 7, 2016 – WWTP Carbon Canisters

At 2300 hr on January 7, wastewater operators were back washing the south carbon canister when wastewater was released from the rupture disk. A blocked valve downstream of the canister created pressure greater than 75 psi causing the rupture disk to rupture. The release duration was 20 minutes with an average flow of 96.6 gpm. Approximately 1,932 gallons (46 barrels) of wastewater was released. The wastewater filled the earthen dike containment and subsequently overflowed allowing the wastewater to travel downhill toward Pond EP-1 but not entering EP-1. A sample of the spilled liquid was collected and submitted to Westerns onsite lab which showed a benzene concentration of .45 mg/l. A vacuum truck was used to remove the treated wastewater from the affected area at the WWTP around the carbon canister containment area and the sloping downhill area. The vacuum truck removed 27 bbls from the containment area and an additional 5 to 7 bbl from the area downhill of the carbon canisters. On January 11, 2 to 3 inches of soil was removed from the area north of the containment structure and the lower level. Four cubic yards of soil was excavated and placed into a roll off box and sent offsite for disposal.

February 5, 2016 – T-714 FCC Feed Tank Overflow

At 0415 hr on February 5, the pumper gauger observed T-714 overflowing. Valves were blocked in and product was rerouted to T-701. The onsite fire department sprayed a blanket of foam and water over the entire affected area. A contract vacuum truck began removing liquids until further assessment could be determined. The cause of the release was failure of Pumper Technicians to identify and follow red zone procedures regarding safe fill height. The worst case volume released was 1,543 bbls of FCC feed. A contract company determined that in-situ solidification in roll off boxes would be required. The non-hazardous material (1,583.75 tons) was shipped offsite for disposal. Additional hot spot removal was conducted on August 10 and 31 and an additional 21.03 tons was disposed of offsite.

April 3, 2016 – Baker Tank – ASO Caustic Release

At 1145 hr on April 3, a load of caustic material from the API knock out drum was off loaded into a Baker Tank that was storing acid soluble oil. A chemical reaction occurred due to the mixing of incompatible wastes. The Baker Tank overflowed causing four barrels of the material to be spilled to the ground surface. The spilled material flowed south to the East Gate Road and then westward along the road. A vacuum truck removed the spill material from the ground and from within the Baker Tank plastic secondary containment. The remediation consisted of the initial remediation where six inches of soil was removed and placed into two roll-off bins and shipped offsite as a non-hazardous waste. Based on analytical results an additional excavation was required where an additional 6 inches of soil was removed and 19,480 pounds of soil was placed into a roll off box and disposed offsite.

June 1, 2016 – Alkylate Leak at Valve

At 1100 hr on June 1, Dexter was doing their valve and pump monitoring in the tank farm and found a small leak coming from a valve bonnet on the Pump Discharge to T-563 line. The line was depressured to T-563 and the leak stopped. One quarter gallon of alkylate reached the ground surface and was cleaned up by environmental.

June 12, 2016 – API Knock-out Drum Sump

At 1615 hr on June 12, hydrocarbon from the flare knock-out drum was being drained to the sump and one gallon leaked onto the ground and the remaining liquid was caught in a bucket. The small amount of stained soil was cleaned up by maintenance.

July 23, 2016 – T-106 Overfill Distillate Release

At 0900 hr to 0935 hr on July 23, during the KHT/DHT startup, T-228 was being transferred to T-106. In the process T-106 overfilled and 243 bbls of distillate spilled into the earthen containment. The containment also contained rainfall. A vacuum truck removed 286 bbls of distillate and water mixture which was recycled back to the WWTP. In late August soil cleanup was contracted out and a small bobcat was used with a vactor truck for the soils under the pipeline. Shovel work by hand was used for the tight spots. Some spill material got under the base of the tank and when the weather warmed up in September this material spread. This required an additional mobilization by the contractor who cleaned up the additional contaminated soil. Ten twenty cubic yard bins were filled with the soil (approximately 200 tons) and shipped offsite for disposal as a non-hazardous waste.

July 23, 2016 – PRV Oil/Water Release at GC Unit

The check valve on the 40# Steam to the Secondary Column failed, causing oil to back into the 40# steam header. The 40# steam PRV relieved causing a mixture of oil and steam that was released to atmosphere over the GAS CON unit, at 49 pounds for about 10 minutes. The total release was 13 bbl of which 1.5 bbl reached the ground surface while the rest stayed within the

unit on concrete and equipment. The maintenance department cleaned up the oil off the ground surface. Analytical indicates some soil removal will still be required in this area.

August 18, 2016 – Sewer Cup Overflow SWS Unit

At 0145 hr on August 18, an Operator discovered hydrocarbon and water mixture coming out of the sewer cups in the sour water stripper unit. St Run Water Wash level controller was found to be open possibly due to plugging in the bridle level controller, it was blocked in and eventually sewers stopped running over. AFFF foam was spread over the affected area to prevent fire danger. The release was estimated to be Straight Run/H₂O mixture of approximately 200 gallons. A WO was written for maintenance to clean up soil. Cleanup has not been completed and environmental will now take charge of cleanup using third party.

August 23, 2016 – CTI Truck Hydrocarbon Overflow

At 1000 hr on August 23, Approximately 5 gallon of hydrocarbon over flowed off CTI's truck through the air valve that is located on top of the truck. Approximately 5 gallons of hydrocarbon leaked from T-35 to the south side of the lab building. The CTI truck was stopped and the truck operator was notified. The hydrocarbon was cleaned up and the truck valve was checked.

September 30 – Silver Strip Additive Cooling Tower

At 1920 hr on September 30, the Off-Sites supervisor was picking up some silver strip additive at cooling tower after unit operator filled buckets. While picking up a 5 gallon bucket, the handle broke on bucket spilling contents on ground. The spill was cleaned up.

October 5, 2016 – GE SPECAID Tote Leak

At 1245 hr on October 5, a tote of GE SPECAID 8Q5352ULS had a faulty valve and 1/2 gallon of chemical released to the ground (asphalt) at the warehouse yard. The chemical was mixed with oil dry and placed into a drum for shipment offsite as a hazardous waste.



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

July 15, 2016

Ed Riege

Western Refining Southwest, Gallup
92 Giant Crossing Road
Gallup, NM 87301
TEL: (505) 722-3833
FAX (505) 722-0210

RE: OCD Central Landfarm Semiannual Sampling

OrderNo.: 1606995

Dear Ed Riege:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/17/2016 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 qualifiers 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,

A handwritten signature in black ink, appearing to read "Andy Freeman", with a stylized flourish at the end.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-01-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:20:00 PM

Lab ID: 1606995-001

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	4.4	0.042	0.30		mg/Kg	1	6/27/2016 10:00:56 PM	26092
Chloride	330	12	30		mg/Kg	20	6/27/2016 10:13:21 PM	26092
Nitrogen, Nitrate (As N)	2.9	0.016	0.30		mg/Kg	1	6/27/2016 10:00:56 PM	26092
Sulfate	550	5.4	30		mg/Kg	20	6/27/2016 10:13:21 PM	26092
EPA METHOD 7471: MERCURY							Analyst: DBD	
Mercury	0.013	0.00053	0.031	J	mg/Kg	1	6/28/2016 9:21:40 AM	26093
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Arsenic	1.1	0.70	2.4	J	mg/Kg	1	6/30/2016 10:50:31 AM	26123
Barium	150	0.046	0.096		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Cadmium	ND	0.061	0.096		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Chromium	8.0	0.12	0.29		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Copper	3.4	0.15	0.29		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Iron	13000	93	240		mg/Kg	100	6/30/2016 10:31:34 AM	26123
Lead	3.2	0.17	0.24		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Manganese	280	0.085	0.19		mg/Kg	2	6/30/2016 11:28:12 AM	26123
Selenium	ND	1.0	2.4		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Silver	ND	0.030	0.24		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Uranium	ND	0.95	4.8		mg/Kg	1	6/30/2016 10:50:31 AM	26123
Zinc	14	0.54	2.4		mg/Kg	1	6/30/2016 10:50:31 AM	26123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Acenaphthylene	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Aniline	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Anthracene	ND	0.13	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Azobenzene	ND	0.24	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benz(a)anthracene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzo(a)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzo(b)fluoranthene	ND	0.18	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzo(g,h,i)perylene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzo(k)fluoranthene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzoic acid	ND	0.16	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Benzyl alcohol	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Bis(2-chloroethoxy)methane	ND	0.22	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Bis(2-chloroethyl)ether	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Bis(2-chloroisopropyl)ether	ND	0.18	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Bis(2-ethylhexyl)phthalate	0.19	0.16	0.99	JD	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4-Bromophenyl phenyl ether	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Butyl benzyl phthalate	ND	0.18	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-01-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:20:00 PM

Lab ID: 1606995-001

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Carbazole	ND	0.13	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4-Chloro-3-methylphenol	ND	0.24	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4-Chloroaniline	ND	0.22	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Chloronaphthalene	ND	0.16	0.50	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Chlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4-Chlorophenyl phenyl ether	ND	0.23	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Chrysene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Di-n-butyl phthalate	0.17	0.15	0.79	JD	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Di-n-octyl phthalate	ND	0.17	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Dibenz(a,h)anthracene	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Dibenzofuran	ND	0.20	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
1,2-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
1,3-Dichlorobenzene	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
1,4-Dichlorobenzene	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
3,3'-Dichlorobenzidine	ND	0.15	0.50	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Diethyl phthalate	ND	0.20	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Dimethyl phthalate	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4-Dichlorophenol	ND	0.18	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4-Dimethylphenol	ND	0.22	0.60	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4,6-Dinitro-2-methylphenol	ND	0.12	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4-Dinitrophenol	ND	0.13	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4-Dinitrotoluene	ND	0.18	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,6-Dinitrotoluene	ND	0.21	0.99	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Fluoranthene	ND	0.11	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Fluorene	ND	0.18	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Hexachlorobenzene	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Hexachlorobutadiene	ND	0.22	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Hexachlorocyclopentadiene	ND	0.23	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Hexachloroethane	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Indeno(1,2,3-cd)pyrene	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
1-Methylnaphthalene	ND	0.20	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Methylnaphthalene	ND	0.24	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Methylphenol	ND	0.17	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
3+4-Methylphenol	ND	0.14	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
N-Nitrosodi-n-propylamine	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
N-Nitrosodiphenylamine	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Naphthalene	ND	0.19	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Nitroaniline	ND	0.21	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
3-Nitroaniline	ND	0.17	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-01-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:20:00 PM

Lab ID: 1606995-001

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
4-Nitroaniline	ND	0.14	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Nitrobenzene	ND	0.20	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2-Nitrophenol	ND	0.20	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
4-Nitrophenol	ND	0.15	0.50	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Pentachlorophenol	ND	0.13	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Phenanthrene	ND	0.13	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Phenol	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Pyrene	ND	0.15	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Pyridine	ND	0.16	0.79	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
1,2,4-Trichlorobenzene	ND	0.21	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4,5-Trichlorophenol	ND	0.20	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
2,4,6-Trichlorophenol	ND	0.16	0.40	D	mg/Kg	1	6/30/2016 2:11:19 PM	26116
Surr: 2-Fluorophenol	63.8	0	28.3-102	D	%Rec	1	6/30/2016 2:11:19 PM	26116
Surr: Phenol-d5	69.5	0	35.7-103	D	%Rec	1	6/30/2016 2:11:19 PM	26116
Surr: 2,4,6-Tribromophenol	80.0	0	35.2-108	D	%Rec	1	6/30/2016 2:11:19 PM	26116
Surr: Nitrobenzene-d5	75.2		24-118	D	%Rec	1	6/30/2016 2:11:19 PM	26116
Surr: 2-Fluorobiphenyl	86.6		35.4-111	D	%Rec	1	6/30/2016 2:11:19 PM	26116
Surr: 4-Terphenyl-d14	65.6		15-91.7	D	%Rec	1	6/30/2016 2:11:19 PM	26116
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.018	0.023		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Toluene	ND	0.0027	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Ethylbenzene	ND	0.0037	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Methyl tert-butyl ether (MTBE)	ND	0.014	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2,4-Trimethylbenzene	ND	0.0034	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,3,5-Trimethylbenzene	ND	0.0033	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2-Dichloroethane (EDC)	ND	0.012	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2-Dibromoethane (EDB)	ND	0.0032	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Naphthalene	ND	0.0071	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1-Methylnaphthalene	ND	0.010	0.18		mg/Kg	1	6/20/2016 8:01:30 PM	25923
2-Methylnaphthalene	ND	0.0098	0.18		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Acetone	ND	0.059	0.68		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Bromobenzene	ND	0.0037	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Bromodichloromethane	ND	0.0027	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Bromoform	ND	0.0056	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Bromomethane	0.019	0.017	0.14	J	mg/Kg	1	6/20/2016 8:01:30 PM	25923
2-Butanone	ND	0.026	0.46		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Carbon disulfide	ND	0.015	0.46		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Carbon tetrachloride	ND	0.0030	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Chlorobenzene	ND	0.0037	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-01-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:20:00 PM

Lab ID: 1606995-001

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Chloroethane	ND	0.0091	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Chloroform	ND	0.0034	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Chloromethane	0.081	0.0041	0.14	J	mg/Kg	1	6/20/2016 8:01:30 PM	25923
2-Chlorotoluene	ND	0.0034	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
4-Chlorotoluene	ND	0.0040	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
cis-1,2-DCE	ND	0.0027	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
cis-1,3-Dichloropropene	ND	0.0042	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2-Dibromo-3-chloropropane	ND	0.014	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Dibromochloromethane	ND	0.0041	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Dibromomethane	ND	0.0040	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2-Dichlorobenzene	ND	0.0040	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,3-Dichlorobenzene	ND	0.0037	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,4-Dichlorobenzene	ND	0.0057	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Dichlorodifluoromethane	ND	0.014	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1-Dichloroethane	ND	0.0025	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1-Dichloroethene	ND	0.015	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2-Dichloropropane	ND	0.0038	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,3-Dichloropropane	ND	0.0052	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
2,2-Dichloropropane	ND	0.0026	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1-Dichloropropene	ND	0.0036	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Hexachlorobutadiene	ND	0.0056	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
2-Hexanone	ND	0.025	0.46		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Isopropylbenzene	ND	0.0039	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
4-Isopropyltoluene	ND	0.0041	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
4-Methyl-2-pentanone	ND	0.013	0.46		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Methylene chloride	ND	0.013	0.14		mg/Kg	1	6/20/2016 8:01:30 PM	25923
n-Butylbenzene	ND	0.0040	0.14		mg/Kg	1	6/20/2016 8:01:30 PM	25923
n-Propylbenzene	ND	0.0035	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
sec-Butylbenzene	ND	0.0063	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Styrene	ND	0.0041	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
tert-Butylbenzene	ND	0.0038	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1,1,2-Tetrachloroethane	ND	0.0044	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1,2,2-Tetrachloroethane	ND	0.0074	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Tetrachloroethene (PCE)	ND	0.0038	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
trans-1,2-DCE	ND	0.013	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
trans-1,3-Dichloropropene	ND	0.0067	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2,3-Trichlorobenzene	ND	0.0068	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2,4-Trichlorobenzene	ND	0.0049	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,1,1-Trichloroethane	ND	0.0028	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-01-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:20:00 PM

Lab ID: 1606995-001

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
1,1,2-Trichloroethane	ND	0.0054	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Trichloroethene (TCE)	ND	0.0049	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Trichlorofluoromethane	ND	0.0034	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
1,2,3-Trichloropropane	ND	0.0079	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Vinyl chloride	ND	0.0037	0.046		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Xylenes, Total	ND	0.0086	0.091		mg/Kg	1	6/20/2016 8:01:30 PM	25923
Surr: Dibromofluoromethane	108		70-130		%Rec	1	6/20/2016 8:01:30 PM	25923
Surr: 1,2-Dichloroethane-d4	106		70-130		%Rec	1	6/20/2016 8:01:30 PM	25923
Surr: Toluene-d8	95.3		70-130		%Rec	1	6/20/2016 8:01:30 PM	25923
Surr: 4-Bromofluorobenzene	98.7		70-130		%Rec	1	6/20/2016 8:01:30 PM	25923
EPA METHOD 418.1: TPH							Analyst: TOM	
Petroleum Hydrocarbons, TR	33	8.5	20		mg/Kg	1	6/23/2016	25996

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-02-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:50:00 PM

Lab ID: 1606995-002

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT	
Fluoride	3.4	0.042	0.30		mg/Kg	1	6/27/2016 10:25:45 PM	26092
Chloride	350	12	30		mg/Kg	20	6/27/2016 10:38:10 PM	26092
Nitrogen, Nitrate (As N)	8.8	0.016	0.30		mg/Kg	1	6/27/2016 10:25:45 PM	26092
Sulfate	400	5.4	30		mg/Kg	20	6/27/2016 10:38:10 PM	26092
EPA METHOD 7471: MERCURY							Analyst: DBD	
Mercury	0.0033	0.00057	0.033	J	mg/Kg	1	6/28/2016 9:25:13 AM	26093
EPA METHOD 6010B: SOIL METALS							Analyst: MED	
Arsenic	0.88	0.71	2.4	J	mg/Kg	1	6/30/2016 3:45:33 PM	26123
Barium	170	0.047	0.098		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Cadmium	ND	0.062	0.098		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Chromium	8.1	0.12	0.29		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Copper	2.4	0.15	0.29		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Iron	13000	95	240		mg/Kg	100	6/30/2016 10:33:05 AM	26123
Lead	3.6	0.17	0.24		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Manganese	230	0.043	0.098		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Selenium	ND	1.1	2.4		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Silver	ND	0.031	0.24		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Uranium	ND	0.97	4.9		mg/Kg	1	6/30/2016 3:45:33 PM	26123
Zinc	13	0.56	2.4		mg/Kg	1	6/30/2016 3:45:33 PM	26123
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Acenaphthene	ND	0.085	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Acenaphthylene	ND	0.081	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Aniline	ND	0.094	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Anthracene	ND	0.066	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Azobenzene	ND	0.12	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benz(a)anthracene	ND	0.086	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzo(a)pyrene	ND	0.075	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzo(b)fluoranthene	ND	0.090	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzo(g,h,i)perylene	ND	0.088	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzo(k)fluoranthene	ND	0.088	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzoic acid	ND	0.082	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Benzyl alcohol	ND	0.078	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Bis(2-chloroethoxy)methane	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Bis(2-chloroethyl)ether	ND	0.073	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Bis(2-chloroisopropyl)ether	ND	0.089	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Bis(2-ethylhexyl)phthalate	0.10	0.081	0.50	J	mg/Kg	1	6/30/2016 2:39:19 PM	26116
4-Bromophenyl phenyl ether	ND	0.095	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Butyl benzyl phthalate	ND	0.088	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-02-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:50:00 PM

Lab ID: 1606995-002

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
Carbazole	ND	0.067	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
4-Chloro-3-methylphenol	ND	0.12	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
4-Chloroaniline	ND	0.11	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Chloronaphthalene	ND	0.078	0.25		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Chlorophenol	ND	0.078	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
4-Chlorophenyl phenyl ether	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Chrysene	ND	0.085	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Di-n-butyl phthalate	0.092	0.074	0.40	J	mg/Kg	1	6/30/2016 2:39:19 PM	26116
Di-n-octyl phthalate	ND	0.085	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Dibenz(a,h)anthracene	ND	0.080	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Dibenzofuran	ND	0.10	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
1,2-Dichlorobenzene	ND	0.076	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
1,3-Dichlorobenzene	ND	0.077	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
1,4-Dichlorobenzene	ND	0.084	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
3,3'-Dichlorobenzidine	ND	0.073	0.25		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Diethyl phthalate	ND	0.10	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Dimethyl phthalate	ND	0.097	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4-Dichlorophenol	ND	0.093	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4-Dimethylphenol	ND	0.11	0.30		mg/Kg	1	6/30/2016 2:39:19 PM	26116
4,6-Dinitro-2-methylphenol	ND	0.060	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4-Dinitrophenol	ND	0.066	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4-Dinitrotoluene	ND	0.089	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,6-Dinitrotoluene	ND	0.11	0.50		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Fluoranthene	ND	0.057	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Fluorene	ND	0.091	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Hexachlorobenzene	ND	0.078	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Hexachlorobutadiene	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Hexachlorocyclopentadiene	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Hexachloroethane	ND	0.085	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Indeno(1,2,3-cd)pyrene	ND	0.078	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
1-Methylnaphthalene	ND	0.10	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Methylnaphthalene	ND	0.12	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Methylphenol	ND	0.083	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
3+4-Methylphenol	ND	0.072	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
N-Nitrosodi-n-propylamine	ND	0.096	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
N-Nitrosodiphenylamine	ND	0.097	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Naphthalene	ND	0.095	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Nitroaniline	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
3-Nitroaniline	ND	0.088	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1606995

Date Reported: 7/15/2016

CLIENT: Western Refining Southwest, Gallup

Client Sample ID: CentralOCD-02-6/16/2016

Project: OCD Central Landfarm Semiannual Sam

Collection Date: 6/16/2016 12:50:00 PM

Lab ID: 1606995-002

Matrix: SOIL

Received Date: 6/17/2016 10:00:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8270C: SEMIVOLATILES							Analyst: JDC	
4-Nitroaniline	ND	0.070	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Nitrobenzene	ND	0.10	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2-Nitrophenol	ND	0.099	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
4-Nitrophenol	ND	0.076	0.25		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Pentachlorophenol	ND	0.064	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Phenanthrene	ND	0.068	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Phenol	ND	0.075	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Pyrene	ND	0.075	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Pyridine	ND	0.079	0.40		mg/Kg	1	6/30/2016 2:39:19 PM	26116
1,2,4-Trichlorobenzene	ND	0.11	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4,5-Trichlorophenol	ND	0.10	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
2,4,6-Trichlorophenol	ND	0.083	0.20		mg/Kg	1	6/30/2016 2:39:19 PM	26116
Surr: 2-Fluorophenol	59.5	0	28.3-102		%Rec	1	6/30/2016 2:39:19 PM	26116
Surr: Phenol-d5	69.6	0	35.7-103		%Rec	1	6/30/2016 2:39:19 PM	26116
Surr: 2,4,6-Tribromophenol	80.2	0	35.2-108		%Rec	1	6/30/2016 2:39:19 PM	26116
Surr: Nitrobenzene-d5	68.1		24-118		%Rec	1	6/30/2016 2:39:19 PM	26116
Surr: 2-Fluorobiphenyl	75.7		35.4-111		%Rec	1	6/30/2016 2:39:19 PM	26116
Surr: 4-Terphenyl-d14	58.0		15-91.7		%Rec	1	6/30/2016 2:39:19 PM	26116
EPA METHOD 8260B: VOLATILES							Analyst: DJF	
Benzene	ND	0.020	0.025		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Toluene	ND	0.0030	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Ethylbenzene	ND	0.0041	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Methyl tert-butyl ether (MTBE)	ND	0.016	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
1,2,4-Trimethylbenzene	ND	0.0037	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
1,3,5-Trimethylbenzene	ND	0.0036	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
1,2-Dichloroethane (EDC)	ND	0.013	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
1,2-Dibromoethane (EDB)	ND	0.0035	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Naphthalene	ND	0.0078	0.10		mg/Kg	1	6/20/2016 8:29:59 PM	25923
1-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	6/20/2016 8:29:59 PM	25923
2-Methylnaphthalene	ND	0.011	0.20		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Acetone	ND	0.064	0.75		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Bromobenzene	ND	0.0040	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Bromodichloromethane	ND	0.0029	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Bromoform	ND	0.0061	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Bromomethane	ND	0.018	0.15		mg/Kg	1	6/20/2016 8:29:59 PM	25923
2-Butanone	ND	0.028	0.50		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Carbon disulfide	ND	0.016	0.50		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Carbon tetrachloride	ND	0.0033	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923
Chlorobenzene	ND	0.0041	0.050		mg/Kg	1	6/20/2016 8:29:59 PM	25923

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
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified