

Dena

From: Dena Vandenberg <dena@kjenvironmental.com>
Sent: Tuesday, June 13, 2017 8:38 AM
To: tomas.oberding@state.nm.us
Subject: OWL Remediation Field Screening Results
Attachments: Rpt_WO_551956_ver_1_000.pdf; Copy of OWL Release Combined Results.xlsx; Sample Points under Power Line.pdf

Good morning, Doc!

I hope all is well! Attached are the field results and laboratory results we have collected so far. We are still awaiting some lab results, but I wanted you to be able to verify that the meter is working to your satisfaction as a screening tool. We have actually found it to be more accurate than the filed titration method. TSS1-TSS6 on the table and in the lab results are the samples indicated on the map, which we spoke about previously. Soon, we will be moving on to Spill Area No. 1 and will take similar samples there. I will send you those results once we have them. Please let me know if you have any questions. Thank you!



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DATE	Sample Pt.	DEPTH	SOIL	WATER	CL- BY FIELD TITRATION METHOD	SOIL LITHOLOGY	CL- BY FIELD SCREENING <i>HORIBA D-73</i>	LAB RESULTS CL-	BLENDED Y / N
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KJ Environmental

LOCATION: OWL BOBCAT/REDHILLS PIPELINE RELEASE

DATE	Sample Pt.	DEPTH	SOIL	WATER	CL- BY FIELD TITRATION METHOD	SOIL LITHOLOGY	CL- BY FIELD SCREENING <i>HORIBA D-73</i>	LAB RESULTS CL-	BLENDED Y / N
	TSS1	1'	-	-	-	sandy sand damp	10.3	-	N
	TSS1	2'	-	-	-	sandy sand damp	12.4	-	N
	TSS1	3'	-	-	-	sandy sand damp	19.3	-	N
	TSS1	4'	19	44	116	sandy sand damp	-	12.7	N
	TSS2	1'	-	-	-	sandy sand damp	19.6	-	N
	TSS2	2'	-	-	-	sandy sand damp	21.4	-	N
	TSS2	3'	-	-	-	sandy sand damp	18.3	-	N
	TSS2	4'	18	45	125	sandy sand damp	-	21.9	N
	TSS3	1'	-	-	-	sandy sand damp	17.7	-	N
	TSS3	2'	-	-	-	sandy sand damp	19.8	-	N
	TSS3	3'	-	-	-	sandy sand damp	22.1	-	N
	TSS3	4'	15	48	96	sandy sand damp	-	11	N
	TSS4	1'	-	-	-	sandy sand damp	14.4	-	N
	TSS4	2'	-	-	-	sandy sand damp	14.8	-	N
	TSS4	3'	-	-	-	sandy sand damp	13.6	-	N
	TSS4	4'	24	47	59	sandy sand damp	-	9.03	N
	TSS5	1'	-	-	-	sandy sand damp	13.9	-	N
	TSS5	2'	-	-	-	sandy sand damp	15.1	-	N
	TSS5	3'	-	-	-	sandy sand damp	15.3	-	N
	TSS5	4'	20	45	67	sandy sand damp	-	4.9	N
	TSS6	1'	-	-	-	sandy sand damp	11.2	-	N
	TSS6	2'	-	-	-	sandy sand damp	11.6	-	N

26-Apr	TSS6	3'	-	-	-	sandy sand damp	9.7	-	N
	TSS6	4'	21	49	70	sandy sand damp	-	5	N
	ASP1	1'	18	45	400	sandy sand damp	-	-	N
	ASP2	1'	21	43	409	sandy sand damp	-	-	N
	ASP3	1'	22	44	380	sandy sand damp	-	-	N
	ASP4	1'	22	49	690	sandy sand damp	-	-	N
	ASP5	1'	19	45	568	sandy sand damp	-	-	N
	ASP6	1'	21	45	364	sandy sand damp	-	-	N
	ASP7	1'	20	48	384	sandy sand damp	-	-	N
	ASP8	1'	21	45	578	sandy sand damp	-	-	N
31-May	ASP9	1'	21	45	728	sandy sand damp	-	-	N
	ASP10	1'	23	48	542	sandy sand damp	-	548	N
	ASP11	1'	-	-	-	sandy sand damp	400.0	-	N
	ASP12	1'	-	-	-	sandy sand damp	292.8	-	N
	ASP13	1'	-	-	-	sandy sand damp	432.0	-	N
	ASP14	1'	-	-	-	sandy sand damp	370.4	-	N
	ASP15	1'	-	-	-	sandy sand damp	334.4	-	N
	ASP16	1'	-	-	-	sandy sand damp	332	-	N
	ASP17	1'	-	-	-	sandy sand damp	393.2	-	N
	ASP18	1'	-	-	-	sandy sand damp	338.8	-	N
	ASP19	1'	-	-	-	sandy sand damp	644	-	N
	ASP20	1'	-	-	-	sandy sand damp	334	316	N
	ASP21	1'	-	-	-	sandy sand damp	412	-	N
	ASP22	1'	-	-	-	sandy sand damp	321.6	-	N
	ASP23	1'	-	-	-	sandy sand damp	548	-	N
	ASP24	1'	-	-	-	sandy sand damp	389.2	-	N
	ASP25	1'	-	-	-	sandy sand damp	96	-	N
	ASP26	1'	-	-	-	sandy sand damp	279.6	-	N
	ASP27	1'	-	-	-	sandy sand damp	424	-	N
	ASP28	1'	-	-	-	sandy sand damp	484	-	N
	ASP29	1'	-	-	-	sandy sand damp	372.8	-	N
	ASP30	1'	-	-	-	sandy sand damp	572	607	N
	ASP31	1'	-	-	-	sandy sand damp	195.2	-	N
	ASP32	1'	-	-	-	sandy sand damp	440	-	N

1-Jun

ASP33	1'	-	-	-	sandy sand damp	393.6	-	N
ASP34	1'	-	-	-	sandy sand damp	356.8	-	N
ASP35	1'	-	-	-	sandy sand damp	314.8	-	N
ASP36	1'	-	-	-	sandy sand damp	412	-	N
ASP37	1'	-	-	-	sandy sand damp	387.2	-	N
ASP38	1'	-	-	-	sandy sand damp	294	-	N
ASP39	1'	-	-	-	sandy sand damp	397.6	-	N
ASP40	1'	-	-	-	sandy sand damp	223.6	200	N
ASP41	1'	-	-	-	sandy sand damp	118	180	N
ASP42	1'	-	-	-	sandy sand damp	131.6	183	N
ASP43	1'	-	-	-	sandy sand damp	266	380	N
ASP44	1'	-	-	-	sandy sand damp	106.4	176	N
ASP45	1'	-	-	-	sandy sand damp	293.2	388	N
ASP46	1'	-	-	-	sandy sand damp	142	202	N
ASP47	1'	-	-	-	sandy sand damp	98	163	N
ASP48	1'	-	-	-	sandy sand damp	229.2	322	N
ASP49	1'	-	-	-	sandy sand damp	180.8	195	N
ASP50	1'	-	-	-	sandy sand damp	130.8	192	N
ASP51	1'	-	-	-	sandy sand damp	113.6	-	N
ASP52	1'	-	-	-	sandy sand damp	250.4	-	N
ASP53	1'	-	-	-	sandy sand damp	280.4	-	N
ASP54	1'	-	-	-	sandy sand damp	201.6	-	N
ASP55	1'	-	-	-	sandy sand damp	209.2	-	N
ASP56	1'	-	-	-	sandy sand damp	124.4	-	N
ASP57	1'	-	-	-	sandy sand damp	117.6	-	N
ASP58	1'	-	-	-	sandy sand damp	169.2	-	N
ASP59	1'	-	-	-	sandy sand damp	197.6	-	N
ASP60	1'	-	-	-	sandy sand damp	160	-	N
ASP61	1'	-	-	-	sandy sand damp	448	-	N
ASP62	1'	-	-	-	sandy sand damp	143.2	-	N
BSP1	1'	19	49	180	sandy sand damp	-	-	N
BSP2	1'	15	49	914	sandy sand damp	-	-	Y
BSP3	1'	15	46	521	sandy sand damp	-	-	N
BSP4	1'	16	42	499	sandy sand damp	-	-	N

26-Apr

17-May

5-Jun

BSP5	1'	15	51	918	sandy sand damp	-	-	Y
BSP6	1'	18	51	1501	sandy sand damp	-	-	Y
BSP7	1'	16	50	1187	sandy sand damp	-	-	Y
BSP8	1'	15	50	866	sandy sand damp	-	-	Y
BSP9	1'	20	54	783	sandy sand damp	-	-	Y
BSP10	1'	19	49	696	sandy sand damp	-	-	N
BSP11	1'	16	50	968	sandy sand damp	-	-	Y
BSP12	1'	23	44	822	sandy sand damp	-	-	Y
BSP13	1'	22	44	1540	sandy sand damp	-	-	Y
BSP14	1'	18	44	1515	sandy sand damp	-	-	Y
BSP15	1'	18	42	1190	sandy sand damp	-	-	Y
BSP16	1'	19	43	1290	sandy sand damp	-	-	Y
BSP17	1'	19	50	894	sandy sand damp	-	-	Y
BSP18	1'	25	37	252	sandy sand damp	-	-	N
BSP19	1'	17	43	1214	sandy sand damp	-	-	Y
BSP20	1'	18	47	522	sandy sand damp	-	-	N
BSP21	1'	15	45	450	sandy sand damp	-	-	N
BSP22	1'	17	51	450	sandy sand damp	-	-	N
BSP23	1'	19	45	213	sandy sand damp	-	-	N
BSP24	1'	21	43	205	sandy sand damp	-	-	N
BSP25	1'	23	42	329	sandy sand damp	-	-	N
BSP26	1'	24	47	548	sandy sand damp	-	-	N
BSP27	1'	24	46	977	sandy sand damp	-	-	Y
BSP28	1'	18	47	470	sandy sand damp	-	-	N
BSP29	1'	21	45	407	sandy sand damp	-	-	N
BSP30	1'	19	44	926	sandy sand damp	-	-	Y
BSP31	1'	18	45	1150	sandy sand damp	-	-	Y
BSP32	1'	19	48	1642	sandy sand damp	-	-	Y
BSP33	1'	19	46	871	sandy sand damp	-	-	Y
BSP34	1'	19	48	859	sandy sand damp	-	-	Y
BSP35	1'	22	46	1568	sandy sand damp	-	-	Y
BSP36	1'	22	47	1068	sandy sand damp	-	-	Y
BSP37	1'	19	43	1900	sandy sand damp	-	-	Y
BSP38	1'	22	42	1546	sandy sand damp	-	-	Y

27-Apr

BSP39	1'	18	41	638	sandy sand damp	-	-	N
BSP40	1'	24	44	1375	sandy sand damp	-	-	Y
BSP41	1'	-	-	-	sandy sand damp	260	-	N
BSP42	1'	-	-	-	sandy sand damp	329.6	-	N
BSP43	1'	-	-	-	sandy sand damp	254	-	N
BSP44	1'	-	-	-	sandy sand damp	138	-	N
BSP45	1'	-	-	-	sandy sand damp	249.6	-	N
BSP46	1'	-	-	-	sandy sand damp	137.6	-	N
BSP47	1'	-	-	-	sandy sand damp	291.2	-	N
BSP48	1'	-	-	-	sandy sand damp	580	-	N
BSP49	1'	-	-	-	sandy sand damp	428	-	N
BSP50	1'	-	-	-	sandy sand damp	260.4	-	N
BSP51	1'	-	-	-	sandy sand damp	104.8	-	N
BSP52	1'	-	-	-	sandy sand damp	296.8	-	N
BSP53	1'	-	-	-	sandy sand damp	277.6	-	N
BSP54	1'	-	-	-	sandy sand damp	283.2	-	N
BSP55	1'	-	-	-	sandy sand damp	452	-	N
BSP56	1'	-	-	-	sandy sand damp	208.4	-	N
BSP57	1'	-	-	-	sandy sand damp	220.8	-	N
BSP58	1'	-	-	-	sandy sand damp	135.6	-	N
BSP59	1'	-	-	-	sandy sand damp	157.2	-	N
BSP60	1'	-	-	-	sandy sand damp	354.8	-	N
BSP61	1'	-	-	-	sandy sand damp	243.6	-	N
BSP62	1'	-	-	-	sandy sand damp	334	-	N
BSP63	1'	-	-	-	sandy sand damp	456	-	N
BSP64	1'	-	-	-	sandy sand damp	386.4	-	N
BSP65	1'	-	-	-	sandy sand damp	1,376	-	Y
BSP66	1'	-	-	-	sandy sand damp	524	-	N
BSP67	1'	-	-	-	sandy sand damp	1016	-	Y
BSP68	1'	-	-	-	sandy sand damp	296	-	Y
BSP69	1'	-	-	-	sandy sand damp	584	-	Y
BSP70	1'	-	-	-	sandy sand damp	257.6	-	Y
BSP71	1'	-	-	-	sandy sand damp	276.8	-	Y
CSP1	1'	19	46	387	sandy sand damp	-	-	N

17-May

CSP2	1'	17	46	406	sandy sand damp	-	-	N
CSP3	1'	15	44	352	sandy sand damp	-	-	N
CSP4	1'	12	48	800	sandy sand damp	-	-	N
CSP5	1'	19	45	403	sandy sand damp	-	-	N
CSP6	1'	14	43	921	sandy sand damp	-	-	N
CSP7	1'	18	49	1415	sandy sand damp	-	-	Y
CSP8	1'	17	48	847	sandy sand damp	-	-	N
CSP9	1'	19	44	556	sandy sand damp	-	-	N
CSP10	1'	22	47	982	sandy sand damp	-	-	N
CSP11	1'	22	43	1251	sandy sand damp	-	-	Y
CSP12	1'	17	43	986	sandy sand damp	-	-	N
CSP13	1'	15	46	1717	sandy sand damp	-	-	Y
CSP14	1'	19	46	653	sandy sand damp	-	-	N
CSP15	1'	21	46	942	sandy sand damp	-	-	N
CSP16	1'	24	41	751	sandy sand damp	-	-	N
CSP17	1'	19	47	643	sandy sand damp	-	-	N
CSP18	1'	18	46	766	sandy sand damp	-	-	N
CSP19	1'	28	40	843	sandy sand damp	-	-	N
CSP20	1'	17	43	759	sandy sand damp	-	-	N
CSP21	1'	14	41	527	sandy sand damp	-	-	N
CSP22	1'	16	40	950	sandy sand damp	-	-	N
CSP23	1'	15	46	460	sandy sand damp	-	-	N
CSP24	1'	15	41	628	sandy sand damp	-	-	N
CSP25	1'	16	41	717	sandy sand damp	-	-	N
CSP26	1'	15	47	1002	sandy sand damp	-	-	Y
CSP27	1'	-	-	-	sandy sand damp	469.0	-	N
CSP28	1'	-	-	-	sandy sand damp	516.0	-	N
CSP29	1'	-	-	-	sandy sand damp	664.0	-	N
CSP30	1'	-	-	-	sandy sand damp	320.8	-	N
CSP31	1'	-	-	-	sandy sand damp	456	-	N
CSP32	1'	-	-	-	sandy sand damp	548	-	N
CSP33	1'	-	-	-	sandy sand damp	391.2	-	N
CSP34	1'	-	-	-	sandy sand damp	512	-	N
CSP35	1'	-	-	-	sandy sand damp	576	-	N

27-Apr

CSP36	1'	-	-	-	sandy sand damp	307.6	-	N
CSP37	1'	-	-	-	sandy sand damp	159.2	-	N
CSP38	1'	-	-	-	sandy sand damp	129.2	-	N
CSP39	1'	-	-	-	sandy sand damp	266.4	-	N
CSP40	1'	-	-	-	sandy sand damp	236	-	N
CSP41	1'	-	-	-	sandy sand damp	147.2	-	N
CSP42	1'	-	-	-	sandy sand damp	226.8	-	N
CSP43	1'	-	-	-	sandy sand damp	179.6	-	N
CSP44	1'	-	-	-	sandy sand damp	242.8	-	N
CSP45	1'	-	-	-	sandy sand damp	396.4	-	N
CSP46	1'	-	-	-	sandy sand damp	272.8	-	N
CSP47	1'	-	-	-	sandy sand damp	780	-	Y
CSP48	1'	-	-	-	sandy sand damp	354.8	-	N
CSP49	1'	-	-	-	sandy sand damp	696	-	N
CSP50	1'	-	-	-	sandy sand damp	500	-	N
CSP51	1'	-	-	-	sandy sand damp	432	-	N
CSP52	1'	-	-	-	sandy sand damp	500	-	N
CSP53	1'	-	-	-	sandy sand damp	904	-	Y
CSP54	1'	-	-	-	sandy sand damp	984	-	Y
CSP55	1'	-	-	-	sandy sand damp	828	-	Y
CSP56	1'	-	-	-	sandy sand damp	792	-	Y
CSP57	1'	-	-	-	sandy sand damp	592	-	N
CSP58	1'	-	-	-	sandy sand damp	472	-	N
CSP59	1'	-	-	-	sandy sand damp	600	-	N
CSP60	1'	-	-	-	sandy sand damp	916	-	Y
CSP61	1'	-	-	-	sandy sand damp	816	-	Y
CSP62	1'	-	-	-	sandy sand damp	1044	-	Y
DSP1	1'	20	45	1012	sandy sand damp	-	-	Y
DSP2	1'	19	49	954	sandy sand damp	-	-	N
DSP3	1'	17	48	1468	sandy sand damp	-	-	Y
DSP4	1'	20	46	1150	sandy sand damp	-	-	Y
DSP5	1'	17	46	1407	sandy sand damp	-	-	Y
DSP6	1'	18	55	977	sandy sand damp	-	-	N
DSP7	1'	16	49	1623	sandy sand damp	-	-	Y

28-Apr

DSP8	1'	19	49	438	sandy sand damp	-	-	N
DSP9	1'	22	48	567	sandy sand damp	-	-	N
DSP10	1'	16	50	750	sandy sand damp	-	163	N
DSP11	1'	17	49	720	sandy sand damp	-	-	N
DSP12	1'	16	49	306	sandy sand damp	-	-	N
DSP13	1'	16	44	357	sandy sand damp	-	-	N
DSP14	1'	16	49	337	sandy sand damp	-	-	N
DSP15	1'	19	45	947	sandy sand damp	-	-	N
DSP16	1'	16	48	540	sandy sand damp	-	-	N
DSP17	1'	17	52	214	sandy sand damp	-	-	N
DSP18	1'	15	50	267	sandy sand damp	-	-	N
DSP19	1'	16	48	510	sandy sand damp	-	-	N
DSP20	1'	16	48	360	sandy sand damp	-	169	N
DSP21	1'	22	48	262	sandy sand damp	-	-	N
DSP22	1'	14	49	245	sandy sand damp	-	-	N
DSP23	1'	19	47	247	sandy sand damp	-	-	N
DSP24	1'	19	44	162	sandy sand damp	-	-	N
DSP25	1'	22	45	266	sandy sand damp	-	-	N
DSP26	1'	17	49	490	sandy sand damp	-	-	N
DSP27	1'	16	48	1020	sandy sand damp	-	-	Y
DSP28	1'	18	48	960	sandy sand damp	-	-	N
DSP29	1'	19	46	339	sandy sand damp	-	-	N
DSP30	1'	19	50	421	sandy sand damp	-	346	N
DSP31	1'	26	42	920	sandy sand damp	-	-	N
DSP32	1'	15	54	1368	sandy sand damp	-	-	Y
DSP33	1'	15	45	480	sandy sand damp	-	-	N
DSP34	1'	15	47	345	sandy sand damp	-	-	N
DSP35	1'	15	54	648	sandy sand damp	-	-	N
DSP36	1'	14	47	1544	sandy sand damp	-	-	Y
DSP37	1'	22	49	468	sandy sand damp	-	-	N
DSP38	1'	23	47	266	sandy sand damp	-	-	N
DSP39	1'	16	47	440	sandy sand damp	-	-	N
DSP40	1'	14	49	385	sandy sand damp	-	284	N
DSP41	1'	16	46	316	sandy sand damp	-	-	N

16-May

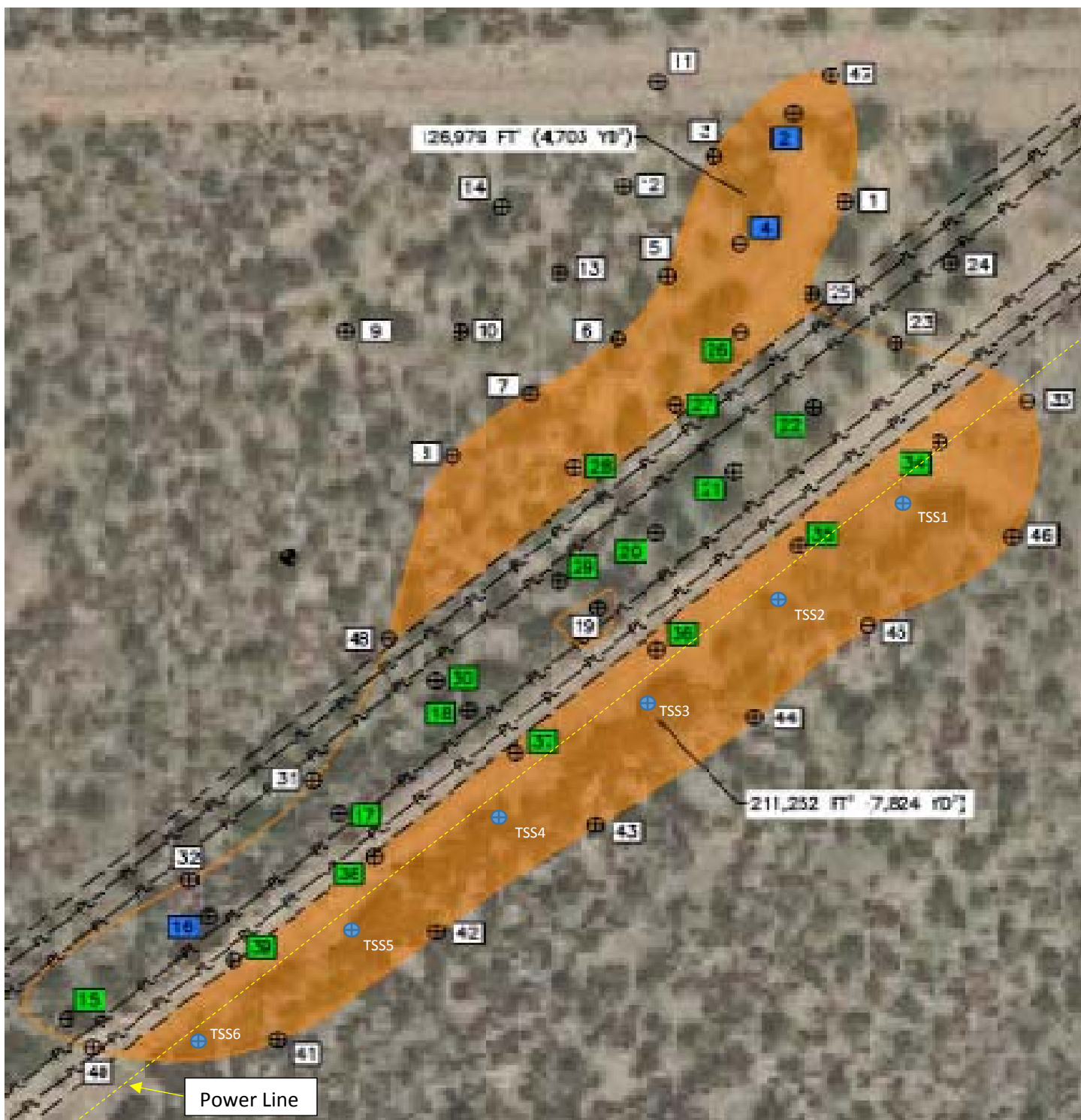
3-May

DSP42	1'	16	51	319	sandy sand damp	-	-	N
DSP43	1'	15	48	224	sandy sand damp	-	-	N
DSP44	1'	19	43	271	sandy sand damp	-	-	N
DSP45	1'	21	48	183	sandy sand damp	-	-	N
DSP46	1'	17	45	291	sandy sand damp	-	-	N
DSP47	1'	20	47	235	sandy sand damp	-	-	N
DSP48	1'	21	39	483	sandy sand damp	-	-	N
DSP49	1'	23	42	274	sandy sand damp	-	-	N
DSP50	1'	17	46	433	sandy sand damp	-	232	N
DSP51	1'	17	49	375	sandy sand damp	-	-	N
DSP52	1'	17	45	265	sandy sand damp	-	-	N
DSP53	1'	14	46	263	sandy sand damp	-	-	N
DSP54	1'	19	42	155	sandy sand damp	-	-	N
DSP55	1'	16	45	197	sandy sand damp	-	381	N
DSP56	1'	15	50	200	sandy sand damp	-	154	N
DSP57	1'	13	48	258	sandy sand damp	-	155	N
DSP58	1'	16	45	253	sandy sand damp	-	178	N
DSP59	1'	14	47	302	sandy sand damp	-	145	N
DSP60	1'	15	49	229	sandy sand damp	-	151	N
DSP61	1'	19	47	74	sandy sand damp	-	156	N
DSP62	1'	16	48	300	sandy sand damp	-	157	N
DSP63	1'	17	47	221	sandy sand damp	-	139	N
DSP64	1'	17	49	288	sandy sand damp	-	99.5	N
ESP1	1'	-	-	-	sandy sand damp	-	-	N
ESP2	1'	-	-	-	sandy sand damp	-	-	N
ESP3	1'	-	-	-	sandy sand damp	-	-	N
ESP4	1'	-	-	-	sandy sand damp	-	-	N
ESP5	1'	-	-	-	sandy sand damp	-	-	N
ESP6	1'	-	-	-	sandy sand damp	-	-	N
ESP7	1'	-	-	-	sandy sand damp	-	-	N
ESP8	1'	-	-	-	sandy sand damp	-	-	N
ESP9	1'	-	-	-	sandy sand damp	-	-	N
ESP10	1'	-	-	-	sandy sand damp	-	1400	Y
FSP1	1'	19	43	407	sandy sand damp	-	-	N

4-May

FSP2	1'	15	45	690	sandy sand damp	-	-	N
FSP3	1'	18	50	722	sandy sand damp	-	-	N
FSP4	1'	17	48	931	sandy sand damp	-	-	N
FSP5	1'	18	45	950	sandy sand damp	-	-	N
FSP6	1'	18	44	929	sandy sand damp	-	-	N
FSP7	1'	18	49	816	sandy sand damp	-	-	N
FSP8	1'	16	44	577	sandy sand damp	-	-	N
FSP9	1'	15	46	491	sandy sand damp	-	-	N
FSP10	1'	24	42	385	sandy sand damp	-	-	N
FSP11	1'	20	45	405	sandy sand damp	-	-	N
FSP12	1'	21	46	832	sandy sand damp	-	-	N
FSP13	1'	17	46	947	sandy sand damp	-	-	N
FSP14	1'	19	45	403	sandy sand damp	-	-	N
FSP15	1'	21	43	962	sandy sand damp	-	-	N
FSP16	1'	23	43	206	sandy sand damp	-	-	N
FSP17	1'	20	44	330	sandy sand damp	-	-	N
FSP18	1'	17	47	691	sandy sand damp	-	-	N
FSP19	1'	19	46	218	sandy sand damp	-	-	N
FSP20	1'	16	48	570	sandy sand damp	-	-	N
FSP21	1'	19	41	388	sandy sand damp	-	-	N
FSP22	1'	16	49	765	sandy sand damp	-	-	N
FSP23	1'	17	48	931	sandy sand damp	-	-	N
FSP24	1'	15	45	660	sandy sand damp	-	-	N
FSP25	1'	21	51	194	sandy sand damp	-	-	N
FSP26	1'	19	46	508	sandy sand damp	-	-	N
FSP27	1'	15	47	376	sandy sand damp	-	-	N
FSP28	1'	20	43	430	sandy sand damp	-	-	N
FSP29	1'	15	49	816	sandy sand damp	-	-	N
FSP30	1'	14	50	821	sandy sand damp	-	-	N
FSP31	1'	19	47	964	sandy sand damp	-	-	N
FSP32	1'	22	49	334	sandy sand damp	-	-	N
FSP33	1'	21	48	480	sandy sand damp	-	-	N
FSP34	1'	15	47	752	sandy sand damp	-	-	N
FSP35	1'	15	47	1159	sandy sand damp	-	-	Y

8-May	FSP36	1'	17	48	1129	sandy sand damp	-	-	Y
	FSP37	1'	16	47	675	sandy sand damp	-	-	N
	FSP38	1'	18	45	200	sandy sand damp	-	-	N
	FSP39	1'	22	47	1431	sandy sand damp	-	-	Y
	FSP40	1'	15	49	229	sandy sand damp	-	-	N
	FSP41	1'	19	48	707	sandy sand damp	-	-	N
	MB1	1'	18	44	98	sandy sand damp	-	-	N
	MB2	1'	23	44	134	sandy sand damp	-	-	N
	MB3	1'	22	49	22	sandy sand damp	-	-	N
	MB4	1'	15	46	61	sandy sand damp	-	-	N
10-May	MB5	1'	15	51	170	sandy sand damp	-	-	N
	MB6	1'	19	41	108	sandy sand damp	-	-	N
	MB7	1'	18	41	159	sandy sand damp	-	-	N
	MB8	1'	20	42	168	sandy sand damp	-	-	N
	MB9	1'	18	45	75	sandy sand damp	-	-	N
	MB10	1'	16	46	1092	sandy sand damp	-	64.7	Y
	MB11	1'	17	46	433	sandy sand damp	-	-	N
6-Jun	MB12	1'	20	52	156	sandy sand damp	-	-	N
	DMB2	1'	20	42	840	sandy sand damp	-	-	N
	DMB3	1'	21	42	560	sandy sand damp	-	-	N
	DMB4	1'	17	46	1515	sandy sand damp	-	-	Y
	DMB5	1'	17	50	794	sandy sand damp	-	-	N



Sheet: 01	Scale: NTS Date: May 2017	Spill Area #2 Detailed View of Excavation Area Jal, Lea County, New Mexico		
---------------------	--	---	---	---



Certificate of Analysis Summary 551956

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Apr-27-17 07:04 pm

Report Date: 03-MAY-17

Project Manager: Holly Taylor

<i>Analysis Requested</i>	<i>Lab Id:</i>	551956-001	551956-002	551956-003	551956-004	551956-005	551956-006
	<i>Field Id:</i>	ASP 10	TSS 1	TSS 2	TSS 3	TSS 4	TSS 5
	<i>Depth:</i>		4 ft	4 ft	4 ft	4 ft	4 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Apr-22-17 14:00	Apr-27-17 14:15	Apr-27-17 14:20	Apr-27-17 14:25	Apr-27-17 14:30	Apr-27-17 14:35
Inorganic Anions by EPA 300/300.1	<i>Extracted:</i>	May-01-17 11:00	May-01-17 11:00	May-01-17 11:00	May-01-17 11:00	May-01-17 11:00	May-01-17 11:00
	<i>Analyzed:</i>	May-01-17 12:21	May-01-17 13:29	May-01-17 13:37	May-01-17 13:45	May-01-17 13:52	May-01-17 14:15
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		548 4.94	12.7 4.93	21.9 4.94	11.0 4.94	9.03 4.99	<4.90 4.90

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.
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Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.0%

Holly Taylor
Project Manager



Certificate of Analysis Summary 551956

KJE Environmental & Civil Engineering, Aubrey, TX

Project Name: OWL Bobcat/Red Hills



Project Id:

Contact: James Fox

Project Location: Jal, NM

Date Received in Lab: Thu Apr-27-17 07:04 pm

Report Date: 03-MAY-17

Project Manager: Holly Taylor

Analysis Requested	Lab Id:	551956-007					
	Field Id:	TSS 6					
	Depth:	4 ft					
	Matrix:	SOIL					
	Sampled:	Apr-27-17 14:40					
Inorganic Anions by EPA 300/300.1	Extracted:	May-01-17 11:00					
	Analyzed:	May-01-17 14:23					
	Units/RL:	mg/kg RL					
Chloride		<5.00 5.00					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.0%

Holly Taylor
Project Manager

Analytical Report 551956
for
KJE Enviromental & Civil Engineering

Project Manager: James Fox

OWL Bobcat/Red Hills

03-MAY-17

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



03-MAY-17

Project Manager: **James Fox**
KJE Enviromental & Civil Engineering
500 Mosley Rd
Aubrey, TX 76227

Reference: XENCO Report No(s): **551956**
OWL Bobcat/Red Hills
Project Address: Jal, NM

James Fox:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 551956. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 551956 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Holly Taylor
Project Manager

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Sample Cross Reference 551956



KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
ASP 10	S	04-22-17 14:00	N/A	551956-001
TSS 1	S	04-27-17 14:15	- 4 ft	551956-002
TSS 2	S	04-27-17 14:20	- 4 ft	551956-003
TSS 3	S	04-27-17 14:25	- 4 ft	551956-004
TSS 4	S	04-27-17 14:30	- 4 ft	551956-005
TSS 5	S	04-27-17 14:35	- 4 ft	551956-006
TSS 6	S	04-27-17 14:40	- 4 ft	551956-007



CASE NARRATIVE

Client Name: *KJE Enviromental & Civil Engineering*

Project Name: *OWL Bobcat/Red Hills*

Project ID:

Work Order Number(s): 551956

Report Date: 03-MAY-17

Date Received: 04/27/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills

Sample Id: **ASP 10**
Lab Sample Id: 551956-001

Matrix: Soil
Date Collected: 04.22.17 14.00

Date Received: 04.27.17 19.04

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.01.17 11.00

Basis: Wet Weight

Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	548	4.94	mg/kg	05.01.17 12.21		1



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills

Sample Id: TSS 1 Matrix: Soil Date Received: 04.27.17 19.04
Lab Sample Id: 551956-002 Date Collected: 04.27.17 14.15 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.01.17 11.00 Basis: Wet Weight
Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.7	4.93	mg/kg	05.01.17 13.29		1



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills

Sample Id: TSS 3 Matrix: Soil Date Received: 04.27.17 19.04
Lab Sample Id: 551956-004 Date Collected: 04.27.17 14.25 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.01.17 11.00 Basis: Wet Weight
Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	11.0	4.94	mg/kg	05.01.17 13.45		1



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills

Sample Id: TSS 4 Matrix: Soil Date Received: 04.27.17 19.04
Lab Sample Id: 551956-005 Date Collected: 04.27.17 14.30 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.01.17 11.00 Basis: Wet Weight
Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	9.03	4.99	mg/kg	05.01.17 13.52		1



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX OWL Bobcat/Red Hills

Sample Id: TSS 5 Matrix: Soil Date Received: 04.27.17 19.04
Lab Sample Id: 551956-006 Date Collected: 04.27.17 14.35 Sample Depth: 4 ft
Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P
Tech: MGO % Moisture:
Analyst: MGO Date Prep: 05.01.17 11.00 Basis: Wet Weight
Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.90	4.90	mg/kg	05.01.17 14.15	U	1



Certificate of Analytical Results 551956



KJE Enviromental & Civil Engineering, Aubrey, TX

OWL Bobcat/Red Hills

Sample Id: TSS 6
Lab Sample Id: 551956-007

Matrix: Soil
Date Collected: 04.27.17 14.40

Date Received: 04.27.17 19.04
Sample Depth: 4 ft

Analytical Method: Inorganic Anions by EPA 300/300.1

Prep Method: E300P

Tech: MGO

% Moisture:

Analyst: MGO

Date Prep: 05.01.17 11.00

Basis: Wet Weight

Seq Number: 3016246

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	05.01.17 14.23	U	1

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	

KJE Enviromental & Civil Engineering
OWL Bobcat/Red Hills

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016246

Matrix: Solid

Prep Method: E300P

MB Sample Id: 723865-1-BLK

LCS Sample Id: 723865-1-BKS

Date Prep: 05.01.17

LCSD Sample Id: 723865-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	259	104	258	103	90-110	0	20	mg/kg	05.01.17 12:06	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016246

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 551956-001

MS Sample Id: 551956-001 S

Date Prep: 05.01.17

MSD Sample Id: 551956-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	548	247	798	101	798	101	90-110	0	20	mg/kg	05.01.17 12:29	

Analytical Method: Inorganic Anions by EPA 300/300.1

Seq Number: 3016246

Matrix: Soil

Prep Method: E300P

Parent Sample Id: 551997-004

MS Sample Id: 551997-004 S

Date Prep: 05.01.17

MSD Sample Id: 551997-004 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.91	246	253	103	251	102	90-110	1	20	mg/kg	05.01.17 15:01	

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 Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)
 Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

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Client / Reporting Information		Project Information		Xenco Quote #		Xenco Job #	
Company Name / Branch: KSE		Project Name/Number: 0w1 Bobcat Red hills					
Company Address: 500 Musley Road, Crossroads, TX, 76127		Project Location: Sal, NM					
Email: Tanner@kadenvironmental.com		Invoice To:					
Project Contact: James Fox		PO Number:					
Sampler's Name							

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	Number of preserved bottles						Notes	Field Comments
								NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MeOH	NONE	
1	ASR10		4/22	1400	G										
2	TS51	4ft	4/27	1415	G										
3	TS52			1420	G										
4	TS53			1425											
5	TS54			1430											
6	TS55			1435											
7	TS56			1440											
8															
9															
10															

Turnaround Time (Business days)		Data Deliverable Information		Notes	
☐ Same Day TAT	☒ 5 Day TAT	☐ Level II Std QC	☐ Level IV (Full Data Pkg / raw data)		
☐ Next Day EMERGENCY	☐ 7 Day TAT	☐ Level III Std QC+ Forms	☐ TRRP Level IV		
☐ 2 Day EMERGENCY	☐ Contract TAT	☐ Level 3 (CLP Forms)	☐ UST / RG 411		
☐ 3 Day EMERGENCY		☐ TRRP Checklist			

TAT Starts Day received by Lab, if received by 5:00 pm		FED-EX / UPS: Tracking #	
SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY			
Relinquished by Sampler: Tanner Evans	Date Time: 4/27 19:04	Received By: Julian Martinez	Date Time: 4/27 19:04
Relinquished by:	Date Time:	Received By:	Date Time:
Relinquished by:	Date Time:	Received By:	Date Time:
Relinquished by:	Date Time:	Received By:	Date Time:
Relinquished by:	Date Time:	Received By:	Date Time:

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoked at \$5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.



XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In



Client: KJE Enviromental & Civil Engineering

Date/ Time Received: 04/27/2017 07:04:00 PM

Work Order #: 551956

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R9

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	N/A
#21 VOC samples have zero headspace?	N/A
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by:

Jessica Kramer

Jessica Kramer

Date: 04/28/2017

Checklist reviewed by:

Holly Taylor

Holly Taylor

Date: 04/28/2017