Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** KAFB 1061

Site / SWMU No.: 106 **Date:** 4/6/11

Weather: Sunny Low 70's **Time:** 12:25 PM

Field Crew: DA + AT **Crew Signature:**

Review Signature: **Date Review:** 4/6/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's 6.5 in well borehole

CALCULATIONS

(A) Depth to Well Bottom	508.5 ft
(B) Pre-Purge Depth to Water	487.26 ft
(C) Water Column Height (A-B)	21.24 ft
(D) Casing Factor (4")=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	13.806 gal
(F) Depth to Top of Screen	483 ft
(G) Depth to Bottom of Screen	508 ft
(H) Saturated Filter Pack Length (G –F, or B)	20.74 ft
(I) Casing/Borehole Factor 4/10=1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	24.888 gal
(K) Min Purge Volume (E + J)	38.694 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter In Situ 9500	R20132
Turbidity Meter HACH	2818
Pump Dedicated Bennette	on file
Field Alkalinity LaMotte	04885

PURGING INFORMATION

Description first water purged: slightly cloudy

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/6/11 12:45	0	487.26	20.22	7.01	374.5	6.54	-0.15	2.23	
12:52	5	487.30	19.58	7.06	448.6	2.33	-0.11	2.42	2.8L/min.
1305 ~~12:00~~	10	487.30	19.47	7.20	441.6	1.41	-0.12	2.48	
1308 ~~13:06~~	15	487.31	19.46	7.28	423.7	1.89	-0.12	2.05	
13:12	20	487.31	19.48	7.31	416.2	1.90	-0.12	1.60	
13:24	30	487.30	19.51	7.36	401.4	1.81	-0.11	1.27	
13:31	35	487.30	19.49	7.35	402.0	1.78	-0.11	1.42	
13:~~39~~ 40a	40	487.30	19.47	7.38	400.7	2.49	-0.11	1.30	
Values Prior to Sampling									
13:~~39~~ 40a	40	487.3	19.47	7.38	400.7	2.49	-0.11	1.30	1.2L/min

Field Alkalinity Result 140 mg/L as CACO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB BFF **Well ID No.:** 1062

Site / SWMU No.: 106 **Date:** 4/11/11

Weather: Sunny, Breezy 40's **Time:** 0840

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 4/11/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's @ LEL @ of well bore

CALCULATIONS

(A) Depth to Well Bottom	505 ft	(J) Filter Pack Volume (H x I)	23.25 gal
(B) Pre-Purge Depth to Water	484.62 ft	(K) Min Purge Volume (E + J)	36.5 gal
(C) Water Column Height (A-B)	20.38 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	4" .65	Parameter Meter	
(E) One Well Casing Volume (C x D):	13.24 gal	In Situ 9500	R20132
(F) Depth to Top of Screen	479 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	504 ft	Hach 2100	2818
(H) Saturated Filter Pack Length (G –F, or B)	19.38 ft	Pump	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	Dedicated Bennett	
		Field Alkalinity	
		LaMotte	04885

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/11/11 0943	0	484.62	17.19	7.63	351.9	7.54	0.21	.49	1.8 Lpm
0953	5	484.62	17.79	7.94	346.1	6.08	0.20	1.37	
1003	10	484.62	18.39	7.72	348.5	4.02	0.19	2.09	
1012	15	484.63	18.42	7.73	351.3	4.06	0.18	1.06	
1021	20	484.63	18.49	7.72	352.9	3.96	0.18	0.75	
1040	30	484.63	18.57	7.74	353.0	4.09	0.16	0.66	
1049	35	484.63	18.61	7.73	354.1	3.98	0.16	0.72	
1055	37	484.63	18.41	7.74	354.6	3.96	0.15	0.47	.9 Lpm
Values Prior to Sampling									
1055	37	484.63	18.41	7.74	354.6	3.96	0.15	0.47	.9 Lpm

Field Alkalinity Result 135 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF

Site / SWMU No.: 106

Weather: Sunny 70's

Field Crew: DA, AT

Review Signature:

Well ID No.: ~~1063~~ 1063

Date: 4/29/11

Time: 0845

Crew Signature:

Date Review: 4/29/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) No

Notes: VOC's @ in well box

CALCULATIONS

(A) Depth to Well Bottom	503 ft
(B) Pre-Purge Depth to Water	481.98 ft
(C) Water Column Height (A-B)	21.02 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	13.663 gal
(F) Depth to Top of Screen	476 ft
(G) Depth to Bottom of Screen	501 ft
(H) Saturated Filter Pack Length (G –F, or B)	19.02 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	22.824 gal
(K) Min Purge Volume (E + J)	36.487 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter Insitu 9500	R20809
Turbidity Meter HACH	2821
Pump Dedicated Bennette	on file
Field Alkalinity LaMotte	04885

PURGING INFORMATION

Description first water purged: Cloudy grey

Date and / or Time	Gallons Removed	Depth to Groundwater (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/29/11 0901	0	481.98	17.56	7.45	809.9	8.12	0.19	4.04	1.6 Lpm
0920	5	482.04	18.45	7.77	804.4	7.41	0.21	2.21	
0933	10	482.04	18.61	7.70	809.8	7.19	0.19	1.28	
0946	~~20~~ 15	482.04	18.63	7.70	816.1	7.48	0.17	1.52	
1000	~~25~~ 20	482.04	18.77	7.71	815.7	7.47	0.15	0.90	
1032	30	482.04	18.84	7.73	811.9	7.46	0.14	2.21	1.3 Lpm
1044	35	482.05	18.78	7.73	815.7	7.46	0.14	1.59	
1058	37	482.05	18.89	7.74	813.9	~~7.47~~ 7.46	0.14	1.59	
Values Prior to Sampling									
1058	37	482.05	18.89	7.74	813.9	7.47	0.14	1.59	

Field Alkalinity Result 85 mg/L $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB - 1064 **Well ID No.:** 1064

Site / SWMU No.: 106 **Date:** 4/13/11

Weather: Sunny, 40's **Time:** 0830

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 4/13/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's @ in well bore

CALCULATIONS

(A) Depth to Well Bottom	510 ft	(J) Filter Pack Volume (H x I)	24.58 gal
(B) Pre-Purge Depth to Water	488.51 ft	(K) Min Purge Volume (E + J)	38.5 gal
(C) Water Column Height (A-B)	21.49 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=(0.65) 5"=1.02	.65	Parameter Meter	
(E) One Well Casing Volume (C x D):	13.96 gal	Insitu 9500	R 20132
(F) Depth to Top of Screen	484 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	509 ft	Hach 2100	2821
(H) Saturated Filter Pack Length (G –F, or B)	20.49 ft	Pump	
		Dedicated Bennett	
(I) Casing/Borehole Factor 4/10 =(1.2) 5/10 = 1.07, _____	1.2	Field Alkalinity	
		La Motte	04885

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/13/1110900	0	488.51	17.28	7.76	526.4	7.74	0.20	.80	0.95Lpm
0915	5	488.51	18.50	7.65	515.6	5.79	0.21	1.76	
0940	10	488.50	18.50	7.66	515.8	5.70	0.18	1.55	0.6Lpm
1000	15	488.50	18.59	7.67	518.6	5.63	0.17	1.58	1.15Lpm
1021	20	488.53	18.68	7.67	519.0	5.61	0.16	1.00	0.85Lpm
1039	25	488.55	18.71	7.67	523.1	5.58	0.16	0.93	1.38Lpm
1052	30	488.56	18.78	7.67	526.1	5.56	0.16	0.96	1.00 Lpm
1107	35	488.56	18.90	7.67	525.4	5.54	0.16	1.04	1.00Lpm
1125	39	488.57	18.76	7.67	525.9	5.52	0.16	.84	1.00Lpm
Values Prior to Sampling									
1125	39	488.57	18.76	7.67	525.9	5.52	0.16	.84	1.00Lpm

Field Alkalinity Result 108 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 1065
Site / SWMU No.: 106
Date: 6/10/11
Weather: Sunny 90's
Time: 1330
Field Crew: AT, DA, MK
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 6/10/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø CO19 LeL 2 in well bore Set pump @ 498'

CALCULATIONS

(A) Depth to Well Bottom	507 ft
(B) Pre-Purge Depth to Water	489.38 ft
(C) Water Column Height (A-B)	17.62 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	11.45 gal
(F) Depth to Top of Screen	479 ft
(G) Depth to Bottom of Screen	506 ft
(H) Saturated Filter Pack Length (G –F, or B)	16.62 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	19.9 gal
(K) Min Purge Volume (E + J)	31. gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter YSI 9500	022229
Turbidity Meter Hach 2100	02821
Pump Portable Bennett	on fuel
Field Alkalinity LaMotte	3467

PURGING INFORMATION

Description first water purged: Dark Grey, odor, sheen

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/10/11 1426	0	489.38	22.81	6.49	1078	1.55	-85	94.0	1.36 Lpm
1454	10	n/m	22.00	6.46	1102	1.57	-42	67.3	
1508	15	n/m	21.88	6.49	1099	1.63	-27	51.6	
1531	20	n/m	21.66	6.51	1099	2.45	-21	39.7	1.0 Lpm
1548	25	n/m	21.64	6.51	1101	2.17	-25	35.6	
1609	30	n/m	21.54	6.51	1077	2.20	-25	33.6	
Values Prior to Sampling									
1609	31	n/m	21.54	6.51	1077	2.20	-25	33.6	1.0 Lpm

Field Alkalinity Result 189 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 1066
Site / SWMU No.: 106
Date: 6-13-11
Weather: Sunny 80's
Time: 0810
Field Crew: DA, AT
Crew Signature: D N Aubrey
Review Signature: Mark Ison
Date Review: 6-13-11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No

Notes: VOC's @ Set pump @ 499', Purging 15gpl. in order to conserve nitrogen. Compressor down. LNAPL in well

CALCULATIONS

(A) Depth to Well Bottom	511 ft	(J) Filter Pack Volume (H x I)	17.36 gal
(B) Pre-Purge Depth to Water	494.04 ft	(K) Min Purge Volume (E + J)	29 gal
(C) Water Column Height (A-B)	16.96 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 6"=1.02	0.65	Parameter Meter: In Situ 9500	R22279
(E) One Well Casing Volume (C x D):	11.1 gal	Turbidity Meter: HACH 2100P	02821
(F) Depth to Top of Screen	483.5 ft	Pump: portable bennette	on file
(G) Depth to Bottom of Screen	508.5 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G –F, or B)	14.46 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		

PURGING INFORMATION

Description first water purged: Dark Grey, odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/13/11 1134	0	494.04	20.21	7.20	443.8	1.11	-114	3.94	0.93 Lpm
1148	3	N/M	20.05	7.28	413.2	0.58	-176	3.03	
1157	6	N/M	19.97	7.27	439.3	0.32	-205	3.25	
1210	9	N/M	19.86	7.22	442.8	0.18	-210	3.05	
1224	12	N/M	20.00	7.20	438.7	0.15	-217	2.89	
1238	15	N/M	19.89	7.20	435.3	0.13	-214	2.88	
Values Prior to Sampling									
1238	15	N/M	19.89	7.20	435.3	0.13	-214	2.88	

Field Alkalinity Result 191 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 1067
Site / SWMU No.: 106
Date: 4/4/11
Weather: Sunny Breezy
Time: 0900
Field Crew: at DA
Crew Signature: [signature]
Review Signature:
Date Review: [signature]

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: Borehole Voc's ⊘

CALCULATIONS

(A) Depth to Well Bottom	511	ft
(B) Pre-Purge Depth to Water	491.94	ft
(C) Water Column Height (A-B)	19.06	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	12.38	gal
(F) Depth to Top of Screen	484	ft
(G) Depth to Bottom of Screen	509	ft
(H) Saturated Filter Pack Length (G –F, or B)	17.06	ft
(I) Casing/Borehole Factor 4/10 = 1.2 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	20.47	gal
(K) Min Purge Volume (E + J)	32.85	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 5500	21902	
Turbidity Meter: 2100P	2818	
Pump: dedicated Bennett		
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C) °F	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU) FTU	Comment
4/4 9:18AM	0	491.94	60.44	6.88	284.0	7.22	0.20	0.51	at .80 gpm
4/4 9:24AM	5	491.92	64.06	7.18	394.0	3.48	0.11	1.59	
" 9:30AM	10	491.90	65.03	7.24	393.0	2.47	0.10	0.92	
" 9:37AM	15	491.90	65.00	7.31	370.0	3.00	0.10	0.86	
" 9:44AM	20	491.91	65.03	7.36	361.6	3.24	0.10	0.70	
" 9:51AM	25	491.91	64.94	7.40	354.4	3.47	0.10	0.89	
" 9:56AM	30	491.90	65.2	7.42	351.5	3.63	0.10	0.93	1.2 L pm
~~10:02~~ AM 1001	35	491.90	65.2	7.42	353.5	3.59	0.10	0.87	

Values Prior to Sampling

1001 4/4/11	35	491.90	65.2	7.42	353.5	3.59	0.10	0.89	

Field Alkalinity Result 140 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 1068

Site / SWMU No.: 106 **Date:** 6/10/11

Weather: Sunny 90's **Time:** 0800

Field Crew: AT, DT, ML **Crew Signature:**

Review Signature: **Date Review:** 6/10/11

WELL OBSERVATIONS

Protective Casing / Vault: (- Intact) - Damaged - **Locked:** Yes - (No) **Well ID Mark:** (Yes) - No

Notes: SVE unit 344, VOC's 6.5, set pump @ ~~503'~~ at 496.5'

CALCULATIONS

(A) Depth to Well Bottom	513.50	ft
(B) Pre-Purge Depth to Water	494.10	ft
(C) Water Column Height (A-B)	19.4	ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	12.61	gal
(F) Depth to Top of Screen	486	ft
(G) Depth to Bottom of Screen	511	ft
(H) Saturated Filter Pack Length (G –F, or B)	16.9	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	20.28	gal
(K) Min Purge Volume (E + J)	33	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	R2-229	
Turbidity Meter ~~HACH~~ 2100	02821	
Pump Portable Bennett	on file	
Field Alkalinity La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear Brown, odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/10/11 1029	0	494.22	23.33	6.95	609.2	4.22	-79	49.6	1.16 Lpm
1101	10	n/m	18.83	7.08	581.0	2.00	-120	6.72	
1134	20	n/m	18.87	7.14	568.3	2.22	-122	8.64	
1153	25	n/m	18.94	7.14	564.6	2.78	-127	8.40	.98 Lpm
1214	30	n/m	19.13	7.15	560.2	1.79	-128	9.48	
1225	33	n/m	19.14	7.16	558.9	2.76	-126	9.33	
Values Prior to Sampling									
1225	33	n/m	19.14	7.16	558.9	2.76	-126	9.33	0.98 Lpm

Field Alkalinity Result Kle mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 1069
Site / SWMU No.: 106
Date: 5/13/11
Weather: Sunny 50's
Time: 0830
Field Crew: AT, DR
Crew Signature:
Review Signature:
Date Review: 5/13/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's Ø in well bore

CALCULATIONS

(A) Depth to Well Bottom	507.5	ft	
(B) Pre-Purge Depth to Water	487.30	ft	
(C) Water Column Height (A-B)	20.2	ft	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		
(E) One Well Casing Volume (C x D):	13.13	gal	
(F) Depth to Top of Screen	480	ft	
(G) Depth to Bottom of Screen	505	ft	
(H) Saturated Filter Pack Length (G –F, or B)	17.7	ft	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		

(J) Filter Pack Volume (H x I)	21.24	gal
(K) Min Purge Volume (E + J)	34.37	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: YSI 5500	20809	
Turbidity Meter: Hach 2100	2821	
Pump: dedicated Bennett on Job		
Field Alkalinity: La MOTTE	3467	

PURGING INFORMATION

Description first water purged: Dark Grey

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/13/11 0855	~~387.34~~ 0 Gl	387.34	16.22	6.80	935.5	7.01	249	34.3	1.7 Lpm
0908	5	387.36	22.20	6.66	928.2	0.51	-170	2.57	
0917	10	387.36	22.41	6.67	973.2	0.26	-181	2.48	
0926	15	387.36	22.50	6.69	988.8	0.15	-189	2.25	
0937	25	387.36	22.57	6.70	1000	0.04	-194	2.36	1.0 Lpm
0949	30	387.33	22.41	6.71	1013	0.01	-199	2.77	
1005	35	387.33	21.93	6.72	1009	~~-0.01~~ 0.0	-203	2.95	
		4 well 7/14							
Values Prior to Sampling		4				well 5/13/11			
1005	35	387.33	21.93	6.72	1009	~~-0.01~~ 0.0	-203	2.95	1.0 Lpm

Field Alkalinity Result 307 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw™ Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10610
Site / SWMU No.: 106
Date: 5/26/11
Weather: Sunny 80's
Time: 1404
Field Crew: DA, AT, RB
Crew Signature: [signature] 5/26/11
Review Signature: [signature]
Date Review: 5/26/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø

CALCULATIONS

(A) Depth to Well Bottom	510.5 ft
(B) Pre-Purge Depth to Water	486.51 ft
(C) Water Column Height (A-B)	23.99 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	15.59 gal
(F) Depth to Top of Screen	483 ft
(G) Depth to Bottom of Screen	508 ft
(H) Saturated Filter Pack Length (G –F, or B)	21.49 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	25.79 gal
(K) Min Purge Volume (E + J)	42 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22229
Turbidity Meter: HACH 2100P	02821
Pump: dedicated bennette	on file
Field Alkalinity: LaMotte	3467

PURGING INFORMATION

Description first water purged: grey brown strong odor of product

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/26/11 1220	Ø	486.27	18.59	7.49	573.8	Ø	90	6.55	1.85L/min
1241	10	486.32	19.13	7.55	573.9	Ø	-205	2.41	
1301	20	486.33	19.09	7.55	576.7	Ø	-241	1.38	
1322	30	486.33	19.54	7.54	573.5	Ø	-272	1.41	
1341	35	486.32	19.21	7.52	569.5	Ø	-284	1.09	1.0L/min
1359	40	486.31	19.22	7.50	566.1	Ø	-291	~~2.43~~ 1.34	
1404	42	486.31	19.18	7.49	562.6	Ø	-293	1.24	

Values Prior to Sampling

1404	42	486.31	19.18	7.49	562.6	Ø	-293	1.24	1.0L pm

Field Alkalinity Result 170mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10611

Site / SWMU No.: 106 **Date:** 1300 4/13/11

Weather: Sunny 60's-70's **Time:** 1300

Field Crew: AT, BA **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 4/13/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) No

Notes: VOC's 1.4 in well bore

CALCULATIONS

(A) Depth to Well Bottom	516	ft
(B) Pre-Purge Depth to Water	496.17	ft
(C) Water Column Height (A-B)	19.83	ft
(D) Casing Factor: 4"=0.65 5"=1.02	12.88 .65	
(E) One Well Casing Volume (C x D):	12.88	gal
(F) Depth to Top of Screen	486	ft
(G) Depth to Bottom of Screen	511	ft
(H) Saturated Filter Pack Length (G –F, or B)	1489	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	17.86	gal
(K) Min Purge Volume (E + J)	30.74	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: YSI 6500	20132	
Turbidity Meter: Hach 2100	2821	
Pump: dedicated Bennett		
Field Alkalinity: LaMotte	04885	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/13/11 1332	0	496.17	17.80	7.96	309.1	7.77	0.20	.83	
1345	5	496.21	18.80	7.90	307.7	5.60	0.90	2.71	1.6 Lpm
1356	10	496.21	19.09	7.80	305.6	4.47	0.18	1.75	
1409	15	496.21	19.12	7.81	302.7	4.39	0.17	1.26	
1421	20	496.21	19.21	7.81	302.0	4.25	0.16	1.22	
1434	25	496.21	19.17	7.81	298.3	4.23	0.15	1.22	1.0 Lpm
1455	30	496.19	19.51	7.82	297.3	4.26	0.15	.98	
1500	31	496.19	19.30	7.81	297.8	4.20	0.15	1.00	1.0 Lpm
Values Prior to Sampling									
1500	31	496.19	19.30	7.81	297.8	4.20	0.15	1.00	1.0 Lpm

Field Alkalinity Result 130 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw™ Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10617
Site / SWMU No.: 106
Date: 4/12/11
Weather: Fair partly cloudy
Time: 0855
Field Crew: DA, AT
Crew Signature: DA AT
Review Signature: Anthony J Lee
Date Review: 4/12/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOCs @ well bore hole

CALCULATIONS

(A) Depth to Well Bottom	510.5 ft	(J) Filter Pack Volume (H x I)	19.896 gal
(B) Pre-Purge Depth to Water	488.92 ft	(K) Min Purge Volume (E + J)	33.926 gal
(C) Water Column Height (A-B)	21.58 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor (4"=0.65) 5"=1.02	0.65	Parameter Meter: In-situ 9500	R2809
(E) One Well Casing Volume (C x D):	14.03 gal	Turbidity Meter: HACH	2821
(F) Depth to Top of Screen	480.5 ft	Pump: dedicated bennette	
(G) Depth to Bottom of Screen	505.5 ft	Field Alkalinity: LaMotte	04885
(H) Saturated Filter Pack Length (G –F, or B)	16.58 ft		
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, _____)	1.20		

PURGING INFORMATION

Description first water purged: Clear @ 5 gal water became brown + silty. Clear @ 7 gal.

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/12/11 0929	0	488.92	20.75	6.26	792.5	7.73	0.21	0.73	1.2L/min
0943	5	488.92	18.28	7.42	841.8	3.38	0.15	382	yellow orange color
1000	10	488.93	18.31	7.34	854.9	1.98	0.05	4.45	
1017	15	488.93	18.34	7.36	836.3	1.77	0.04	3.28	
1039	20	488.93	18.51	7.37	826.2	1.74	0.04	2.49	
1058	25	488.93	18.68	7.38	817.6	1.77	0.04	2.18	1.0L/min
1117	30	488.93	18.69	7.38	810.4	1.78	0.03	2.13	
1136	35	488.94	18.55	7.39	806.3	1.79	0.03	1.99	
Values Prior to Sampling									
1136	35	488.94	18.55	7.39	806.3	1.79	0.03	1.99	1.0L/min

Field Alkalinity Result 135 mg/L as $CACO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10613
Site / SWMU No.: 106
Date: 4/8/11
Weather: Sunny 70's
Time: 0850
Field Crew: DA + AT
Crew Signature:
Review Signature:
Date Review: 4/8/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's Ø in well borehole

CALCULATIONS

(A) Depth to Well Bottom	516.5 ft
(B) Pre-Purge Depth to Water	494.01 ft
(C) Water Column Height (A-B)	22.49 ft
(D) Casing Factor (4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	14.62 gal
(F) Depth to Top of Screen	486.5 ft
(G) Depth to Bottom of Screen	511.5 ft
(H) Saturated Filter Pack Length (G –F, or B)	17.49 ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	20.988 gal
(K) Min Purge Volume (E + J)	35.608 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter In-situ 9500	R20132
Turbidity Meter Hach	2818
Pump Dedicated bennette	on file
Field Alkalinity La Motte	04885

PURGING INFORMATION

Description first water purged: Cloudy

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/8/11 0920	Ø	494.01	19.68	6.94	370.4	7.51	0.22	9.99	1.3
0932	5	494.00	18.92	7.47	344.1	4.80	0.06	3.86	1.7L/min
0944	10	494.02	18.80	7.54	344.1	4.97	0.01	3.00	
0954	15	494.03	18.86	7.55	347.1	5.01	0.00	1.70	
1005	20	494.03	18.85	7.56	362.4	4.77	0.00	1.36	
1015	25	494.04	18.95	7.58	355.7	4.87	0.00	0.96	
1026	30	494.04	18.90	7.59	355.4	4.90	0.00	0.91	
1037	35	494.04	18.89	7.6	354.5	4.92	0.00	1.03	
1042	37	494.04	19.25	7.33	351.0	4.28	0.00	1.12	1.0L/Min
Values Prior to Sampling									
1043	37	494.04	19.25	7.33	351.0	4.28	0.00	1.12	1.0L/Min.

Field Alkalinity Result 123 mg/L as $CACO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFT- **Well ID No.:** 10614

Site / SWMU No.: 106 **Date:** 1145 5/13/11

Weather: Sunny 60's **Time:** 1145

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 5/13/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) - No

Notes: VOC's @ 1.5 in well bore

CALCULATIONS

(A) Depth to Well Bottom	516 ft	(J) Filter Pack Volume (H x I)	21.6 gal
(B) Pre-Purge Depth to Water	493.01 ft	(K) Min Purge Volume (E + J)	36.55 gal
(C) Water Column Height (A-B)	23 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=(0.65) 5"=1.02	.65	Parameter Meter	
(E) One Well Casing Volume (C x D):	14.95 gal	YSI 9500	R20809
(F) Depth to Top of Screen	496 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	511 ft	Hach 2100	2821
(H) Saturated Filter Pack Length (G –F, or B)	18 ft	Pump	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	Dedicated Bennett	on file
		Field Alkalinity	
		La Motte	3467

PURGING INFORMATION

Description first water purged: Clear then became grey after 2 gallons purged

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/13/11 1202	0	492.98	18.65	6.87	518.5	6.99	61	31.8	1.7Lpm
1222	10	492.98	19.00	7.28	567.2	0.15	-149	2.00	
1245	20	493.01	19.07	7.34	553.9	0.06	-160	1.94	
1256	25	493.01	19.06	7.35	550.3	0.01	-165	1.07	1.1Lpm
1311	30	493.01	19.25	7.36	551.6	-0.01	-169	1.38	
1327	35	493.01	19.33	7.36	559.7	-0.02	-166	1.31	
1333	37	493.01	19.30	7.39	561.3	-0.02	-167	1.18	
1						0.0			
Values Prior to Sampling						mel 5/13/11			
1333	37	493.01	19.30	7.39	561.3	-0.02 0.0	-167	1.18	

Field Alkalinity Result 185 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: KAFB-10615
Site / SWMU No.: 106
Date: 4/14/11
Weather: Sunny, Windy, 60's
Time: 0850
Field Crew: DA, AT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/14/11

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø @ well bore hole

CALCULATIONS

(A) Depth to Well Bottom	515 ft
(B) Pre-Purge Depth to Water	488.01 ft
(C) Water Column Height (A-B)	26.99 ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	17.54 gal
(F) Depth to Top of Screen	485 ft
(G) Depth to Bottom of Screen	510 ft
(H) Saturated Filter Pack Length (G –F, or B)	21.99 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	26.388 gal
(K) Min Purge Volume (E + J)	43.928 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter Insitu 9500	R20809
Turbidity Meter HACH	2821
Pump dedicated bennette	
Field Alkalinity La Motte	04885

PURGING INFORMATION

Description first water purged: Clear / became silty brown @ 3 gal / Clear @ 10 gal

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/14/11 0919	Ø	488.01	18.83	7.28	345.1	7.75	0.22	2.00	1.7L/min
0936	5	488.05	18.02	7.73	339.6	6.62	0.15	27.70	
0949	10	488.04	18.10	7.77	340.5	6.67	0.13	10.80	
1002	15	488.04	18.24	7.79	343.3	6.72	0.12	4.79	
1015	20	488.04	18.16	7.79	340.0	6.83	0.11	3.45	
1042	30	488.04	18.20	7.81	344.1	6.86	0.10	2.30	
1102	35	488.04	17.99	7.82	343.4	6.82	0.11	3.80	1.0L/pm
1120	40	488.04	18.18	7.81	345.1	6.85	0.11	2.44	
1139	45	488.04	18.47	7.81	342.6	6.83	0.11	1.62	
Values Prior to Sampling									
1139	45	488.04	18.47	7.81	342.6	6.83	0.11	1.62	

Field Alkalinity Result 120 mg/L as $CACO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF | **Well ID No.:** 106116

Site / SWMU No.: 106 | **Date:** 4/7/11

Weather: Cloudy | **Time:** 1020

Field Crew: AT, DA | **Crew Signature:**

Review Signature: | **Date Review:** 4/7/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) No

Notes: wellbox VOC's 1044, LEL 14, O2 15.2

CALCULATIONS

(A) Depth to Well Bottom	505	ft
(B) Pre-Purge Depth to Water	484.46	ft
(C) Water Column Height (A-B)	20.54	ft
(D) Casing Factor: (4"=0.65) 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	13.355	gal
(F) Depth to Top of Screen	475	ft
(G) Depth to Bottom of Screen	500	ft
(H) Saturated Filter Pack Length (G –F, or B)	15.54	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	18.6	gal
(K) Min Purge Volume (E + J)	31.99	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R20132	
Turbidity Meter: HACH 2100	2818	
Pump: dedicated Bennett		
Field Alkalinity: LaMotte	04885	

PURGING INFORMATION

Description first water purged: Clear, @ 10 gal purge water became Yellow

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/7/11 1046	0	484.46	17.25	6.97	286.3	7.22	.20	7.33	2 Lpm
1056	5	484.46	18.93	7.42	298.3	2.68	.03	8.96	
1103	10	484.46	18.76	7.46	296.3	2.58	.00	9.17	
1111	15	484.47	18.63	7.61	295.1	2.72	.01	3.46	
1120	20	484.47	18.45	7.63	291.9	2.63	.00	3.67	
1129	25	484.47	18.09	7.76	289.7	2.80	.01	2.37	
1138	30	484.48	18.26	7.67	294.5	2.86	.02	2.75	
1150	35	484.46	18.47	7.69	295.5	2.82	0.04	2.35	1 Lpm
Values Prior to Sampling									
1150	35	484.46	18.47	7.69	295.5	2.82	0.04	2.35	1 Lpm

Field Alkalinity Result 135 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10617

Site / SWMU No.: 106 **Date:** 4/27/11

Weather: Sunny, Windy **Time:** 9:00

Field Crew: AT, DR **Crew Signature:**

Review Signature: **Date Review:** 4/27/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) No

Notes: VOC's @

CALCULATIONS

(A) Depth to Well Bottom	512 ft	(J) Filter Pack Volume (H x I)	24.27 gal
(B) Pre-Purge Depth to Water	486.77 ft	(K) Min Purge Volume (E + J)	40.62 gal
(C) Water Column Height (A-B)	25.23 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=~~0.65~~ 5"=1.02	.65	Parameter Meter	
(E) One Well Casing Volume (C x D):	16.35 gal	Insitu 4500	R20505
(F) Depth to Top of Screen	482 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	507 ft	Hach 2100	2821
(H) Saturated Filter Pack Length (G –F, or B)	20.23 ft	Pump	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	~~24.27~~ at 1.2	dedicated bennett	on file
		Field Alkalinity	
		La Motte	3467

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV) pre start	Turbidity (NTU)	Comment
4/27/11 1028	0	486.77	16.63	7.32	342.5	7.47	0.11	1.53	2.0 Lpm
1039	5	486.80	18.71	7.66	341.6	7.64	0.00	.92	
1048	10	486.86	18.71	7.69	341.6	7.69	-0.03	.96	
1057	15	486.81	18.69	7.70	341.3	7.70	-0.05	.66	
1108	20	486.81	18.82	7.72	340.3	1.95	-0.05	10.77 at	
1135	30	486.81	18.70	7.71	342.1	1.99	-0.08	.81	1.1 Lpm
1151	35	486.79	18.90	7.71	340.1	1.36	-0.06	.49	
1212	40	486.79	18.86	7.71	338.6	1.92	-0.05	.48	
Values Prior to Sampling									
1212	40	486.79	18.86	7.71	338.6	1.92	-0.05	.48	1.1 Lpm

Field Alkalinity Result 110 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: KAFB-10618
Site / SWMU No.: 106
Date: 4/14/11
Weather: Sunny, windy, 60's
Time: 1310
Field Crew: DA, AT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/14/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø @ well bore hole

CALCULATIONS

(A) Depth to Well Bottom	506 ft
(B) Pre-Purge Depth to Water	480.07 ft
(C) Water Column Height (A-B)	25.93 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	16.85 gal
(F) Depth to Top of Screen	476 ft
(G) Depth to Bottom of Screen	501 ft
(H) Saturated Filter Pack Length (G –F, or B)	20.93 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	25.116 gal
(K) Min Purge Volume (E + J)	41.96 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In-situ 9500	R20809
Turbidity Meter: HACH	2821
Pump: Dedicated bennette	
Field Alkalinity: La Motte	04885

PURGING INFORMATION

Description first water purged: Clear odor of product in water

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/14/11 1328	Ø	480.07	17.35	7.88	369.8	7.40	0.16	6.03	1.9L/min
1338	5	480.07	18.64	7.76	365.8	0.14	-0.18	1.93	
1348	10	480.09	18.70	7.75	364.8	0.06	-0.19	1.68	
1402	15	480.09	18.71	7.75	364.1	0.02	-0.19	0.93	
1412	20	480.08	18.71	7.74	364.4	0.02	-0.19	1.15	
1434	30	480.09	18.79	7.75	363.2	-0.02	-0.19	.93	1.4 Lpm
1446	35	480.09	18.76	7.74	370.5	-0.02	-0.19	.95	1.0 Lpm
1458	40	480.08	18.80	7.74	372.5	-0.03	-0.19	.91	
1502	42	480.08	18.79	7.74	369.3	-0.03	-0.19	.90	
Values Prior to Sampling									
1502	42	480.08	18.79	7.74	369.3	-0.03	-0.19	.90	

Field Alkalinity Result 138 mg/L as ~~A~~ $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106OM

Site / SWMU No.: 106 **Date:** 5/9/11

Weather: Partly cloudy 50's **Time:** 0951

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 5/9/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) No

Notes: VOC's 64 in well bore, VOC's 14 in B2

CALCULATIONS

(A) Depth to Well Bottom	523	ft
(B) Pre-Purge Depth to Water	498.35	ft
(C) Water Column Height (A-B)	24.65	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	16.02	gal
(F) Depth to Top of Screen	493	ft
(G) Depth to Bottom of Screen	518	ft
(H) Saturated Filter Pack Length (G –F, or B)	19.65	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	23.58	gal
(K) Min Purge Volume (E + J)	39.6	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 5500	R20809	
Turbidity Meter Hach 2100	2821	
Pump Dedicated Bennett	on file	
Field Alkalinity La Motte	34167	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/9/11 1022	0	498.24	17.80	7.52	329.5	7.71	222	3.47	1.6 L/min
1046	10	498.26	18.79	7.72	336.4	2.93	-7	0.93	
1106	20	498.26	18.79	7.73	336.5	2.95	-0	0.84	
1121	25	498.26	18.81	7.75	342.3	2.95	1	0.71	
1134	30	498.26	18.86	7.75	346.9	2.85	-0	0.68	1.1 L/min
1151	35	498.26	18.90	7.74	350.9	~~350~~ 92.32 at 2.32	11	0.72	
1207	40	498.25	18.97	7.74	354.9	~~354.9~~ at 2.23	17	0.74	
Values Prior to Sampling						2.32 at			
1207	40	498.25	18.97	7.74	354.9	354.9	17	0.74	1.1 Lpm

Field Alkalinity Result 129 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB- BFF
Well ID No.: 10620
Site / SWMU No.: 106
Date: 4/26/11
Weather: Cloudy
Time: 9:00
Field Crew: AT, RB
Crew Signature:
Review Signature: Mark Jaya
Date Review: 4/26/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) - No

Notes: VOC's in well bore

CALCULATIONS

(A) Depth to Well Bottom	512	ft
(B) Pre-Purge Depth to Water	484.76	ft
(C) Water Column Height (A-B)	27.24	ft
(D) Casing Factor: 4"=0.65 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	17.7	gal
(F) Depth to Top of Screen	482	ft
(G) Depth to Bottom of Screen	507	ft
(H) Saturated Filter Pack Length (G –F, or B)	22.24	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	26.68	gal
(K) Min Purge Volume (E + J)	44.3	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter 9500 Insitu	R 20809	
Turbidity Meter Hach	2821	
Pump dedicated Bennett	on F6	
Field Alkalinity LaMotte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/26/10505	5 0	484.76	18.18	7.52	419.2	2.77	0.05	9.03	1.4 Lpm
0920	10 5	484.77	18.28	7.59	412.3	2.85	0.08	3.47	
0935	15 10	484.77	18.33	7.67	394.9	3.28	0.09	2.23	
0952	20 15	484.77	18.35	7.70	389.1	3.72	0.00	1.49	
1011	30 20	484.77	18.32	7.71	394.0	3.59	0.09	1.65	
1038	35 30	484.77	18.31	7.73	397.1	3.58	0.00	.90	
1054	40 35	484.77	18.36	7.73	399.7	3.65	0.00	.88	1.0 Lpm
1110	44 40	484.76	18.39	7.74	391.8	3.77	0.09	.62	
1124	44	484.76	18.53	7.75	394.1	3.79	0.00	.62	
Values Prior to Sampling									
1124	44	484.76	18.53	7.75	394.1	3.79	0.00	.62	1.0 Lpm

Field Alkalinity Result 138 mg/L $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10621
Site / SWMU No.: 106
Date: 4/26/11
Weather: Sunny, windy
Time: 1230
Field Crew: AT, RB
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/26/11

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø in well bore

CALCULATIONS

(A) Depth to Well Bottom	488	ft
(B) Pre-Purge Depth to Water	458.53	ft
(C) Water Column Height (A-B)	29.47	ft
(D) Casing Factor: 4"=0.65 5"=1.02	~~19.15~~ at .65	
(E) One Well Casing Volume (C x D):	19.15	gal
(F) Depth to Top of Screen	458	ft
(G) Depth to Bottom of Screen	483	ft
(H) Saturated Filter Pack Length (G –F, or B)	24.47	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	~~29.36~~ at 1.2	

(J) Filter Pack Volume (H x I)	29.36	gal
(K) Min Purge Volume (E + J)	48.5	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: 9500 Insitu	R20809	
Turbidity Meter: Hach	2821	
Pump: dedicated Bennett	on File	
Field Alkalinity: LaMotte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV) mv 5/1/11	Turbidity (NTU)	Comment
4/26/11 1317	0	458.53	19.08	7.87	563.5	~~6.19~~	0.12	10.7	.58 gpm
1325	5	458.58	18.84	7.65	570.0	0.21	-0.16	.81	
1344	15	458.59	18.78	7.68	543.6	0.29	-0.19	.87	
1352	20	458.59	18.77	7.66	539.7	0.38	-0.19	.75	
1410	30	458.59	18.77	7.67	549.6	0.34	-0.18	.83	
1419	35	458.58	18.79	7.67	539.9	0.34	-0.18	.65	1.2 Lpm
1431	40	458.57	18.71	7.67	549.5	0.31	-0.17	.75	
1442	45	458.57	18.81	7.66	553.2	0.25	-0.17	.94	
1454	48	458.57	18.83	7.66	555.4	0.29	-0.17	.75	
Values Prior to Sampling									
1454	48	458.57	18.83	7.66	555.4	0.29	-0.17	.75	1.2 Lpm

Field Alkalinity Result 135 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10622
Site / SWMU No.: 106
Date: 5/24/11
Weather: Sunny, Windy 70°s
Time: 1100
Field Crew: DA, AT
Crew Signature: DA, AT
Review Signature: Madilyn
Date Review: 5/24/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** Yes (No)
Notes: Needs security bolt + marker VOCs Ø

CALCULATIONS

(A) Depth to Well Bottom	492 ft	(J) Filter Pack Volume (H x I)	29.796 gal
(B) Pre-Purge Depth to Water	462.17 ft	(K) Min Purge Volume (E + J)	50 gal
(C) Water Column Height (A-B)	29.83 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	Parameter Meter: In Situ 9500	R22229
(E) One Well Casing Volume (C x D):	19.420 gal	Turbidity Meter: HACH 2100P	02821
(F) Depth to Top of Screen	462 ft	Pump: dedicated bennette	on file
(G) Depth to Bottom of Screen	487 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G –F, or B)	24.83 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/24/11 1151	0	462.17	25.98	6.58	346.4	-2.50	220	1.37	1.95L/min
12:12	10	462.20	18.75	6.60	344.7	-2.50	227	0.93	
12:32	20	462.20	18.73	6.60	344.9	-2.50	227	0.67	
1252	30	462.20	18.74	6.59	344.5	-2.50	227	0.47	
1301	35	462.20	18.76	6.59	343.5	-2.50	227	0.61	
1319	40	462.18	18.74	6.59	341.5	-2.50	227	0.54	0.98L/min
1337	45	462.18	18.72	6.58	341.2	-2.50	227	0.62	
1356	50	462.17	18.77	6.58	340.2	-2.50	227	0.45	
Values Prior to Sampling									
1358	50	462.17	18.77	6.58	340.2	-2.50	227	0.45	

Field Alkalinity Result 140 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10623

Site / SWMU No.: 106 **Date:** 5/25/11

Weather: Sunny 70's **Time:** 0815

Field Crew: DA, AT **Crew Signature:** DA, AT

Review Signature: [signature] **Date Review:** 5/25/11

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's

CALCULATIONS

(A) Depth to Well Bottom	503 ft
(B) Pre-Purge Depth to Water	472.70 ft
(C) Water Column Height (A-B)	30.8 ft
(D) Casing Factor (4"=0.65, 5"=1.02)	0.65
(E) One Well Casing Volume (C x D):	20.02 gal
(F) Depth to Top of Screen	473 ft
(G) Depth to Bottom of Screen	498 ft
(H) Saturated Filter Pack Length (G –F, or B)	25.3 ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, ____)	1.2

(J) Filter Pack Volume (H x I)	30.36 gal
(K) Min Purge Volume (E + J)	51 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: YSI 9500	R22279
Turbidity Meter: HACH 2100P	02821
Pump: dedicated bennett on file	
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Groundwater (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/25/11 0831	0	472.65	17.28	7.54	297.6	6.56	196	3.95	1.9 L/min
0851	10	472.65	18.61	7.82	294.8	5.33	190	0.77	
0910	20	472.66	18.59	7.84	292.6	4.89	186	0.70	
0930	30	472.66	18.61	7.81	289.7	Ø 2.50	184	0.58	
0942	36	472.66	18.63	7.81	290.3	4.74	182	0.75	
1002	41	472.64	18.35	7.85	292.1	Ø 2.50	184	0.57	0.95 L/min
1022	46	472.64	18.40	7.85	290.7	Ø	184	0.78	
1042	51	472.64	18.45	7.94	294.5	Ø	181	0.78	
	~~52~~ 51								

Values Prior to Sampling

1042	51	472.64	18.45	7.94	294.5	Ø	181	0.78	0.95 Lpm

Field Alkalinity Result 138 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10624
Site / SWMU No.: 106
Date: 5/25/11
Weather: Sunny 70's breezy
Time: 1148
Field Crew: DA, AT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/25/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø in well bore 5.6 in BZ (ambient)

CALCULATIONS

(A) Depth to Well Bottom	511 ft
(B) Pre-Purge Depth to Water	485.61 ft
(C) Water Column Height (A-B)	25.39 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	16.51 gal
(F) Depth to Top of Screen	481 ft
(G) Depth to Bottom of Screen	506 ft
(H) Saturated Filter Pack Length (G –F, or B)	20.39 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	24.47 gal
(K) Min Purge Volume (E + J)	41 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter In Situ 9500	R22229
Turbidity Meter HACH 2100P	02821
Pump dedicated bennette	on file
Field Alkalinity La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/25/11 1206	Ø	485.33	19.60	7.06	670.1	Ø	162	11.2	1.85 L/min
1226	10	485.39	19.31	7.23	661.4	Ø	95	2.88	
1247	20	485.39	19.31	7.25	629.6	Ø	44	2.40	
1307	30	485.40	19.31	7.27	601.2	Ø	-6	1.62	1 L/min
1329	35	485.37	19.32	7.27	598.3	Ø	29	1.05	
1349	40	485.37	19.28	7.29	585.5	Ø	28	1.01	
1356	42	485.37	19.30	7.29	584	Ø	30	0.85	
						~~Ø~~			
Values Prior to Sampling									
1356	42	485.37	19.30	7.29	584	Ø	30	0.85	1 Lpm

Field Alkalinity Result 188 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10625

Site / SWMU No.: 106 **Date:** 4/28/11

Weather: Sunny 60's **Time:** 9:00

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 4/28/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** Yes - (No)

Notes: VOC's @ in well bore

CALCULATIONS

(A) Depth to Well Bottom	495 ft	(J) Filter Pack Volume (H x I)	30.00 ~~32.78~~ at gal
(B) Pre-Purge Depth to Water	462.68 ft	(K) Min Purge Volume (E + J)	~~51~~ 51.00 gal
(C) Water Column Height (A-B)	32.32 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	.65		
(E) One Well Casing Volume (C x D):	21.00 gal	Parameter Meter YSI 9500	R20809
(F) Depth to Top of Screen	465 ft	Turbidity Meter Hach 2100	2821
(H) Saturated Filter Pack Length (G – F, or B)	25.00 ~~27.32~~ at ft	Pump Dedicated Bennett	on file
(I) Casing/Borehole Factor 4/10 = 1.2, 8/10 = 1.07, _____	1.2	Field Alkalinity La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/28/11 0917	0	462.68	17.60	7.27	335.1	7.72	0.20	6.32	2.1 Lpm
0927	5	462.72	18.41	7.67	331.4	10.18	0.20	.91	
0938	10	462.72	18.39	7.72	325.2	9.65	0.20	.79	
0949	20	462.71	18.42	7.73	330.3	10.33	0.19	.82	
1011	30	462.71	18.45	7.74	332.1	10.06	0.18	1.03	
1043	40	462.71	18.53	7.75	332.1	9.74	0.17	1.18	1.2 Lpm
1109	45	462.70	18.62	7.78	333.0	8.89	0.17	.77	
1125	50	462.69	18.72	7.78	332.8	8.82	0.17	.77	
Values Prior to Sampling									
1125	50	462.69	18.72	7.78	332.8	8.82	0.17	.77	1.2 Lpm

Field Alkalinity Result 105 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 10626
Site / SWMU No.: 106
Date: ~~1300~~ 4/28/11
Weather: Sunny 70's
Time: 1300
Field Crew: ATDA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 4/28/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø in well bore

CALCULATIONS

(A) Depth to Well Bottom	491.20	ft
(B) Pre-Purge Depth to Water	468.77	ft
(C) Water Column Height (A-B)	22.43	ft
(D) Casing Factor: 4"=0.65 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	14.57	gal
(F) Depth to Top of Screen	466	ft
(G) Depth to Bottom of Screen	486	ft
(H) Saturated Filter Pack Length (G –F, or B)	17.23	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2 ~~20.6~~	

(J) Filter Pack Volume (H x I)	20.6	gal
(K) Min Purge Volume (E + J)	35.17	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI-9500	R208209	
Turbidity Meter HACH 2100	2821	
Pump dedicated Bennett	on file	
Field Alkalinity Ca Mottle	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV) mee 5/11/11	Turbidity (NTU)	Comment
4/28/11 1300	0	468.77	18.56	7.41	702.3	7.11	0.16	2.62	1.8 Lpm
1315	5	468.80	18.86	7.65	682.7	9.24	0.14	1.13	
1324	10	468.85	18.85	7.67	679.4	9.14	0.14	1.03	
1340	15	468.85	18.78	7.68	679.8	9.15	0.13	1.29	
1350	20	468.86	18.86	7.68	676.6	9.12	0.12	1.12	
1407	25	468.82	19.18	7.69	675.0	8.69	0.13	.90	1.0 Lpm
1429	30	468.82	19.30	7.70	679.1	8.87	0.13	.90	
1440	35	468.82	19.90	7.70	683.8	8.70	0.14	.87	
Values Prior to Sampling									
1440	35	468.82	19.90	7.70	683.8	8.70	0.14	.87	1.0 Lpm

Field Alkalinity Result 125 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB- BFF **Well ID No.:** 10627

Site / SWMU No.: 106 **Date:** 4/4/11

Weather: Sunny **Time:** 12:15

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:**

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) / Damaged - **Locked:** (Yes) / No **Well ID Mark:** (Yes) - No

Notes: Borehole Vac's 0, Lel 1

CALCULATIONS

(A) Depth to Well Bottom	506 ft
(B) Pre-Purge Depth to Water	490.38 ft
(C) Water Column Height (A-B)	15.62 ft
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	10.153 gal
(F) Depth to Top of Screen	481 ft
(G) Depth to Bottom of Screen	501 ft
(H) Saturated Filter Pack Length (G –F, or B)	10.62 ft
(I) Casing/Borehole Factor (4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	12.744 gal
(K) Min Purge Volume (E + J)	22.897 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R20809
Turbidity Meter: HACH 2100P	LVE002818
Pump: Bennett dedicated	dedicated
Field Alkalinity: LaMotte	Lot 4901206

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/4/11 1300	0	490.38	18.24	7.53	331.5	6.62	0.06	1.55	2Lpm
1309	5	490.42	18.67	7.84	323.9	7.30	0.08	0.72	
1321	10	490.43	18.54	7.86	324.2	7.45	0.08	0.62	
1332	15	490.42	18.51	7.85	323.5	7.44	0.09	0.79	
1342	20	490.42	18.48	7.85	319.5	7.46	0.09	0.82	
1352	25	490.42	18.47	7.65	319.2	7.47	0.09	0.82	1.2Lpm
Values Prior to Sampling									
4/4/11 1352	25	490.42	18.47	7.65	319.2	7.47	0.09	0.82	

Field Alkalinity Result 140 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10628

Site / SWMU No.: 106 **Date:** 5/26/11

Weather: Sunny 80's **Time:** 0805

Field Crew: DA, AT, RB **Crew Signature:**

Review Signature: Mark Lyon **Date Review:** 5/26/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged **Locked:** (Yes) - No **Well ID Mark:** Yes (-) No

Notes: VOC's 0 in borehole water level 492.03 @ top of outer casing

CALCULATIONS

(A) Depth to Well Bottom	516 ft	(J) Filter Pack Volume (H x I)	12.78 gal
(B) Pre-Purge Depth to Water	492.01 ft	(K) Min Purge Volume (E + J)	38 gal
(C) Water Column Height (A-B)	23.99 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: (4"=0.65) 5"=1.02	0.65	Parameter Meter: YSI Sonde 9500	R22279
(E) One Well Casing Volume (C x D):	15.59 gal	Turbidity Meter: HACH 2100P	02821
(F) Depth to Top of Screen	491 ft	Pump: dedicated bennette	on file
(G) Depth to Bottom of Screen	511 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G –F, or B)	18.99 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2		

PURGING INFORMATION

Description first water purged: clear brown, odor of product

Date and / or Time	Gallons Removed	Depth to Groundwater (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/26/11 0823	0	491.78	15.18	6.99	391.2	0	186	12.7	1.9L/min
0842	10	491.83	18.37	7.52	414.2	0.14	-106	4.8	
0903	20	491.84	18.40	7.50	409.4	0.11	-105	1.67	
0913 ~~0923~~	25	491.84	18.39	7.49	409.4	0.14	-106	1.16	
0932	30	491.80	17.90	7.49	402.6	0.04	-94	0.83	0.9gL/min
0952	35	491.81	17.95	7.50	412.4	0.08	-94	0.96	
1005	~~40~~ 38	491.81	17.95	7.48	411.9	0	-88	0.91	

Values Prior to Sampling

1005	~~40~~ 38	491.81	17.95	7.48	411.9	0	-88	0.91	

Field Alkalinity Result 160 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106044

Site / SWMU No.: 106 **Date:** ~~12:00~~ 5/2/11

Weather: partly cloudy 40's **Time:** 12:00

Field Crew: AT, ON **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/2/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's Ø in well bore hole

CALCULATIONS

(A) Depth to Well Bottom	524.5	ft
(B) Pre-Purge Depth to Water	490.35	ft
(C) Water Column Height (A-B)	34.15	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	34.83	gal
(F) Depth to Top of Screen	504.23	ft
(G) Depth to Bottom of Screen	519.23	ft
(H) Saturated Filter Pack Length (G – F, or B)	15.00	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07), _____	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	50.88	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	E20809	
Turbidity Meter Hach 2100	2821	
Pump Dedicated Bennett	on/at	
Field Alkalinity LaMotte	3467	

PURGING INFORMATION

Description first water purged: clear/gray

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1215 5/2/11	0	490.35	17.39	7.83	278.4	8.33	171	4.44	4.2 Lpm
1228	10	490.45	19.00	7.85	284.5	10.90	167	2.54	
1236	20	490.45	19.01	7.84	282.5	12.10	160	2.88	
1245	30	490.45	18.93	7.84	279.8	12.98	157	1.87	
1254	40	490.45	18.86	7.85	280.2	13.02	157	1.68	1.0 Lpm
1311	45	490.34	18.48	7.86	277.8	9.71	159	~~2.63~~ 1.48	
1337	51	490.34	18.59	7.87	280.3	9.59	160	1.54	
Values Prior to Sampling									
1337	51	490.34	18.59	7.87	280.3	9.59	160	1.54	1.0 Lpm

Field Alkalinity Result 118 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106045

Site / SWMU No.: 106 **Date:** 5/2/11

Weather: Cloudy 30's **Time:** 08:30

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 5/2/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes No **Well ID Mark:** Yes - No

Notes: VOC's @ in well box

CALCULATIONS

(A) Depth to Well Bottom	548	ft
(B) Pre-Purge Depth to Water	490.11	ft
(C) Water Column Height (A-B)	57.89	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	59.04	gal
(F) Depth to Top of Screen	528.3	ft
(G) Depth to Bottom of Screen	543.3	ft
(H) Saturated Filter Pack Length (G – F, or B)	15.00	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	75.09	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter 9500 Eurosite	R 20132	
Turbidity Meter Hach 2100	2821	
Pump dedicated Bennett	On Fld	
Field Alkalinity LaMotte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/2/11 0902	0	490.11	16.84	7.53	269.6	8.87	218	3.50	1.05 gpm
0923	20	490.22	18.78	7.70	265.5	15.45	228	1.68	
0942	40	490.23	18.80	7.73	271.0	16.35	211	1.64	
1005	60	490.23	18.87	7.75	270.5	16.06	195	1.52	
1028	65	490.24	18.90	7.77	272.8	16.50	187	.95	1 gpm
1047	70	490.24	18.95	7.76	272.3	15.57	181	1.14	
1107	75	490.24	18.21	7.82	269.3	10.58	181	.74	
Values Prior to Sampling									
1107	75	490.24	18.21	7.82	269.3	10.58	181	.74	1 gpm

Field Alkalinity Result 125 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106046 [illegible] 5/6/11
Site / SWMU No.: 106
Date: 5/4/11
Weather: Sunny 60-70's
Time: 1225
Field Crew: AT, DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: [signature] 5/5/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC Ø in well bore

CALCULATIONS

(A) Depth to Well Bottom	515	ft
(B) Pre-Purge Depth to Water	495.04	ft
(C) Water Column Height (A-B)	19.96	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	20.35	gal
(F) Depth to Top of Screen	490	ft
(G) Depth to Bottom of Screen	510	ft
(H) Saturated Filter Pack Length (G –F, or B)	14.96	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	16.00	gal
(K) Min Purge Volume (E + J)	36	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	R20755	
Turbidity Meter Hach 2100	2821	
Pump Portable Bennett	on file	
Field Alkalinity La Motte	3467	

PURGING INFORMATION

Description first water purged: clear / set Portable Bennett pump @ 498'

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/4/11 1236	0	495.04	20.28	7.24	313.9	8.88	213	5.93	1.75 L/min
1246	5	495.07	19.40	7.65	311.6	9.06	207	5.22	
1258	10	495.08	19.36	7.67	320.7	9.03	205	3.77	
1322	20	495.08	19.36	7.68	337.9	8.84	199	2.08	
1338	25	495.08	19.43	7.68	346.3	8.76	196	1.78	.95 L/min
1354	30	495.08	19.63	7.68	349.2	8.40	195	1.56	
1412	36	495.03	19.76	7.68	351.5	8.32	194	1.58	
Values Prior to Sampling									
1412	36	495.03	19.76	7.68	351.5	8.32	194	1.58	

Field Alkalinity Result 126 mg/l as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106047
Site / SWMU No.: 106
Date: 5/5/11
Weather: Sunny 80's
Time: 1405
Field Crew: AT, DA
Crew Signature: [signature]
Review Signature: Mark [signature]
Date Review: 5/6/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: Voc ø ø in well bore / set pump @ 518' in screen

CALCULATIONS

(A) Depth to Well Bottom	531.35 ft
(B) Pre-Purge Depth to Water	495.05 ft
(C) Water Column Height (A-B)	36.3 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	37.0 gal
(F) Depth to Top of Screen	512 ft
(G) Depth to Bottom of Screen	527 ft
(H) Saturated Filter Pack Length (G-F, or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	53.0 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter YSI 9500	1220809
Turbidity Meter HACH 2100	2821
Pump portable bennette	on file
Field Alkalinity La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1440	Ø	495.20	19.38	7.59	318.3	2.61	-56	1.98	1.75L/min
1528	20	495.20	19.40	7.59	315.4	2.41	-62	1.89	
1548	30	495.19	19.40	7.59	314.1	2.56	-65	2.02	
1608	40	495.18	19.36	7.60	323.7	2.57	-80	~~0.1~~ 1.79	~~1.1~~
1618	45	495.16	19.35	7.60	315.4	2.70	-68	2.00	1.12/min
1628	50	495.17	19.34	7.61	309.2	2.74	-80	1.47	
1635	53	495.13	19.35	7.60	303.0	2.53	-75	1.87	
1635	53	495.13	19.35	7.60	303.0	2.53	-75	1.87	1.12 Lpm
Values Prior to Sampling									
1635	53	495.13	19.35	7.60	303.0	2.53	-75	1.87	1.12 Lp

Field Alkalinity Result 137 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106048
Site / SWMU No.: 106
Date: 5/5/11
Weather: Sunny 50's
Time: 0800
Field Crew: AT, DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/5/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø 17 in well bore / set Pump @ 535'

CALCULATIONS

(A) Depth to Well Bottom	555.5	ft
(B) Pre-Purge Depth to Water	494.93	ft
(C) Water Column Height (A-B)	60.57	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	61.7	gal
(F) Depth to Top of Screen	535.5	ft
(G) Depth to Bottom of Screen	550.5	ft
(H) Saturated Filter Pack Length (G – F or B)	15	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	77.8	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	R20809	
Turbidity Meter Hach 2100	2821	
Pump Portable Bennett	on File	
Field Alkalinity Ca Mottle	3467	

PURGING INFORMATION

Description first water purged: silty

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/5/11 1015	~~494.99~~ 0	494.99	19.53	7.47	286.0	9.35	186	9.99	1.6 Lpm / silty
1052	at ~~10~~ 20	495.06	19.41	7.71	286.5	10.62	181	9.57	
1113	at ~~20~~ 30	495.06	19.42	7.73	284.8	12.41	177	5.86	clear
1135	at ~~30~~ 40	495.06	19.52	7.75	285.8	11.57	172	4.55	
1158	~~40~~ 50	495.06	19.53	7.78	286.5	12.25	169	3.95	
1221	~~50~~ 60	495.05	19.50	7.78	286.2	11.20	170	2.85	
1240	~~60~~ 70	495.04	19.51	7.79	286.6	11.74	169	2.11	1.2 Lpm
1259	~~70~~ 75	495.00	19.56	7.79	286.8	10.41	172	2.26	
1305	78	495.00	19.56	7.80	286.9	10.45	172	1.97	

Values Prior to Sampling

1305	78	495.00	19.56	7.80	286.9	10.45	172	1.97	

Field Alkalinity Result 112 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 10659

Site / SWMU No.: 106 **Date:** 6/15/11

Weather: Sunny **Time:** 0900

Field Crew: AT, BA **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 6/15/11

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's 7.8 2EL 5 Set pump to 482 ft filter @ 492 ft

CALCULATIONS

(A) Depth to Well Bottom	508.4 ft
(B) Pre-Purge Depth to Water	487.36 ft
(C) Water Column Height (A-B)	21.1 ft
(D) Casing Factor: 4"=0.65 5"=1.02	~~21.50~~ 1.02
(E) One Well Casing Volume (C x D):	21.50 gal
(F) Depth to Top of Screen	483.4 ft
(G) Depth to Bottom of Screen	503.4 ft
(H) Saturated Filter Pack Length (G –F, or B)	16.04 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07

(J) Filter Pack Volume (H x I)	17.2 gal
(K) Min Purge Volume (E + J)	38.7 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter YSI 9500	R22229
Turbidity Meter Hach	02821
Pump Portable Bennett	on file
Field Alkalinity Ca Mott	3467

PURGING INFORMATION

Description first water purged: Light Brown, odor, sheen

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
0928 6/15/11	0	487.36	21.84	7.25	476.4	3.59	135	97.0	0.92 Lpm
1009	10	n/m	19.83	7.36	448.9	8.82	112	1.57	
1051	20	n/m	19.96	7.34	446.5	14.09	105	1.50	
1132	30	n/m	20.12	7.34	439.8	13.17	.97	1.25	
1151	35	n/m	20.20	7.34	438.2	12.26	.88	1.22	
1206	39	n/m	20.25	7.35	441.7	11.99	86	1.35	
Values Prior to Sampling									
1206	39	n/m	20.25	7.35	441.7	11.99	86	1.35	0.92 Lpm

Field Alkalinity Result 161 mg/L as CaCO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB - BFF **Well ID No.:** 106060

Site / SWMU No.: 106 **Date:** 5/20/11

Weather: Cloudy 50's **Time:** 0830

Field Crew: [illegible] **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 5/20/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) Damaged **Locked:** (Yes) No **Well ID Mark:** (Yes) No

Notes: VOC's ND in well bore, set pump @ 510'

CALCULATIONS

(A) Depth to Well Bottom	523 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	486.74 ft	(K) Min Purge Volume (E + J)	53 gal
(C) Water Column Height (A-B)	36.26 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: YSI 6500 Instl	KZ2229
(E) One Well Casing Volume (C x D):	36.9 gal	Turbidity Meter: Hach 2100	02821
(F) Depth to Top of Screen	503 ft	Pump: Portable Bennett	on fuel
(G) Depth to Bottom of Screen	518 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G – F, or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07)	1.07		

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/20/11 0924	0	487.00	17.30	4.90	328.6	7.30	211	4.31	1.8 Lpm
0946	10	487.01	18.80	7.63	309.3	6.91	183	1.79	
1008	20	487.01	18.84	7.68	300.4	7.68	175	0.77	
1028	30	487.01	18.80	7.70	283.4	7.70	172	0.66	
1049	40	487.01	18.81	7.73	296.2	7.73	169	0.43	
1108	45	486.98	18.81	7.73	290.6	7.73	172	1.06	0.9 Lpm
1132	50	487.06	18.79	7.74	294.9	7.19	171	0.82	
1153	53	487.00	18.70	7.74	298.2	7.74	172	0.82	
Values Prior to Sampling									
1153	53	487.00	18.70	7.74	305.8	7.73	172	0.82	0.9 Lpm

Field Alkalinity Result 103 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106061

Site / SWMU No.: 106 **Date:** 5/18/11

Weather: Sunny 80's **Time:** 0900

Field Crew: DA, AT **Crew Signature:** DA, AT

Review Signature: [signature] **Date Review:** 5/18/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's 62 in well bore 0 in BZ set pump to 581 FT

CALCULATIONS

(A) Depth to Well Bottom	603 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	486 ft	(K) Min Purge Volume (E + J)	136 gal
(C) Water Column Height (A-B)	117 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: Hon Site 9500	R22229
(E) One Well Casing Volume (C x D):	119.34 gal	Turbidity Meter: HACH 2100P	07821
(F) Depth to Top of Screen	573.2 ft	Pump: portable Bennette	on file
(G) Depth to Bottom of Screen	588.2 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G –F, or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07),	1.07		

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/18/11 0906	0	486.82	20.23	6.56	295.3	8.31	232	6.40	1.98L/min
0952	25	486.84	19.20	7.75	264.2	8.82	164	2.14	
1039	50	486.83	19.20	7.78	292.0	8.83	159	1.46	
1126	75	486.82	19.36	7.81	261.3	9.96	155	1.74	
1213	100	486.79	19.39	7.83	261.1	10.34	149	1.80	
1251	121	486.75	19.42	7.83	264.8	10.05	138	1.82	1.0L/min
1308	126	486.72	19.55	7.82	265.1	9.25	141	1.63	
1326	131	486.71	19.53	7.82	265.7	9.54	147	1.63	
1344	136	486.70	19.36	7.82	264.2	9.69	152	1.58	
Values Prior to Sampling									
1344	136	486.70	19.38	7.82	264.2	9.69	152	1.58	1.0L/min

Field Alkalinity Result 104 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106062

Site / SWMU No.: 106 **Date:** 5/10/11

Weather: Sunny 60's **Time:** 0800

Field Crew: AT, DA **Crew Signature:**

Review Signature: **Date Review:** 5/10/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's @ 19.9 in well bore, set pump @ 582' "deep well"

CALCULATIONS

(A) Depth to Well Bottom	595 ft	(J) Filter Pack Volume (H x I)	15.50 gal
(B) Pre-Purge Depth to Water	493.05 ft	(K) Min Purge Volume (E + J)	119.5 gal
(C) Water Column Height (A-B)	101.95 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter	
(E) One Well Casing Volume (C x D):	103.98 gal	YSI 9500	R20889
(F) Depth to Top of Screen	575.78 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	590.26 ft	Hach 2100	2821
(H) Saturated Filter Pack Length (G – F, or B)	14.48 ft	Pump	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07)	1.07	Portable bennett	on F16
		Field Alkalinity	
		LaMotte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/10/11 0910	0	493.05	18.67	7.40	295.7	13.92	243	2.34	1.8Lpm
0950	20	493.07	19.08	7.66	292.5	14.92	234	2.36	
1030	40	493.07	19.12	7.71	293.4	13.71	215	0.99	
1110	60	493.05	19.19	7.70	293.9	12.07	204	0.92	
1150	80	492.99	19.25	7.71	295.8	12.23	195	0.95	
1230	100	492.98	19.33	7.72	296.3	12.59	188	1.09	
1258	110	492.98	19.42	7.74	296.2	10.50	187	1.88	1.2Lpm
1314	115	492.97	19.50	7.75	296.7	10.38	186	0.92	
1331	120	492.97	19.61	7.74	296.1	10.92	185	1.01	
Values Prior to Sampling									
1331	120	492.97	19.61	7.74	296.1	10.42	185	1.01	1.2Lpm

Field Alkalinity Result 116 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106063
Site / SWMU No.: 106
Date: 5/11/11
Weather: cloudy 50's
Time: 11:19
Field Crew: DA, AT, AM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/11/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's 22-6 in well bore / VOC's 14-0 BZ set pump @ 512ft

CALCULATIONS

(A) Depth to Well Bottom	525	ft
(B) Pre-Purge Depth to Water	494.00 ~~491.99~~	ft
(C) Water Column Height (A-B)	31	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	31.62	gal
(F) Depth to Top of Screen	505	ft
(G) Depth to Bottom of Screen	520	ft
(H) Saturated Filter Pack Length (G –F, or B)	15	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	48	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Cn Site 9500	R20809	
Turbidity Meter: HACH 2100P	02821	
Pump: portable bennette	on file	
Field Alkalinity: La Motte	04885	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/11/11 1201	0	493.91	16.35	7.57	344.7	9.58	133	2.36	1.8 Lpm
1222	10	493.90	18.77	7.69	343.1	9.42	142	0.96	
1243	20	493.90	18.73	7.70	342.6	9.61	148	0.44	
1304	30	493.88	18.78	7.70	343.2	9.23	152	0.26	
1315	35	493.88	18.87	7.70	346.3	9.23	152	0.32	1.15 L/min
1329	40	493.88	18.56	7.70	343.7	8.76	154	0.66	
1346	45	493.86	18.53	7.70	346.3	9.60	158	0.29	
1358	48	493.86	18.45	7.71	343.6	9.56	159	0.29	
Values Prior to Sampling									
1358	48	493.86	18.45	7.71	343.6	9.56	159	0.29	1.15 Lpm

Field Alkalinity Result 137 mg/L as CaCO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106064
Site / SWMU No.: 106
Date: 5/11/11
Weather: Cloudy ~~Sunday~~ 40's
Time: 0800
Field Crew: AT, DA
Crew Signature:
Review Signature:
Date Review: 5/11/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No

Notes: VOC's 2000 Lel 14 in well bore VOC's 15.6 BZ
set pump @ 500ft

CALCULATIONS

(A) Depth to Well Bottom	510	ft
(B) Pre-Purge Depth to Water	493.28	ft
(C) Water Column Height (A-B)	16.72	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	17.05	gal
(F) Depth to Top of Screen	485 ~~505~~ at	ft
(G) Depth to Bottom of Screen	505	ft
(H) Saturated Filter Pack Length (G –F, or (B))	11.72	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07), _____	1.07	

(J) Filter Pack Volume (H x I)	12.5	gal
(K) Min Purge Volume (E + J)	30	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R20809	
Turbidity Meter: HACH 2100P	07821	
Pump: portable bennette	on file	
Field Alkalinity: La Motte	04885	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/11/11 0852	0	493.16	17.82	7.18	387.9	1.11	114	0.55	1.6 Lpm
0903	5	493.17	18.32	7.30	387.6	0.38	4	0.47	
0913	10	493.17	18.34	7.34	387.0	~~RO~~ 0.76	-11	0.51	
0923	15	493.16	18.38	7.37	386.8	0.78	-13	0.55	
0933	20	493.18	18.34	7.38	387.0	0.97	-12	0.49	1.2 Lpm
0950	25	493.16	18.25	7.39	386.4	1.03	-15	0.59	
1003	30	493.16	18.29	7.40	386.2	1.27	-15	0.56	
Values Prior to Sampling									
1003	30	493.16	18.29	7.40	386.2	1.27	-15	0.56	1.2 Lpm

Field Alkalinity Result 162 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106067
Site / SWMU No.: 106
Date: 6-3-11
Weather: Sunny high 80's
Time: 12 12
Field Crew: DA, AT
Crew Signature:
Review Signature:
Date Review: 6/3/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's in wellbore Set pump to 495ft

CALCULATIONS

(A) Depth to Well Bottom	510 ft
(B) Pre-Purge Depth to Water	490.94 ft
(C) Water Column Height (A-B)	19.06 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.07
(E) One Well Casing Volume (C x D):	19.45 gal
(F) Depth to Top of Screen	485 ft
(G) Depth to Bottom of Screen	505 ft
(H) Saturated Filter Pack Length (G-F or B)	14.06 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	15.04 gal
(K) Min Purge Volume (E + J)	35 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22279
Turbidity Meter: HACH 2100P	02821
Pump: Portable Bennette	on file
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: Clear, slight odor of product

Date and / or Time	Gallons Removed	Depth to Groundwater (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-3-11 @1305	0	489.91	22.47	7.44	408.9	4.26	178	1.56	1.78L/min
1327	10	490.06	19.45	7.38	407.8	3.18	187	2.99	
1348	20	490.06	19.38	7.39	407.7	2.97	174	2.04	1.80
1407	25	490.01	19.57	7.40	408.1	2.93	169	1.59	1.0L/min
1426	30	489.99	19.57	7.41	407.9	2.87	164	1.35	
1442	35	489.99	19.55	7.42	407.0	2.83	160	1.28	

Values Prior to Sampling

1442	35	489.99	19.55	7.42	407.0	2.83	160	1.28	1 Lpm

Field Alkalinity Result 195 mg/L as CaCO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-13FF **Well ID No.:** 106668

Site / SWMU No.: 106 **Date:** 6/2/11

Weather: Sunny 80's **Time:** 0915

Field Crew: AT, DM **Crew Signature:**

Review Signature: DMJ Aubrey **Date Review:** 6-2-11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC'd in well bore, set pmp @ 587 ft

CALCULATIONS

(A) Depth to Well Bottom	600.0	ft	
(B) Pre-Purge Depth to Water	490.39	ft	
(C) Water Column Height (A-B)	109.61	ft	
(D) Casing Factor: 4"=0.65, (5"=1.02)	1.02		
(E) One Well Casing Volume (C x D):	111.8	gal	
(F) Depth to Top of Screen	580	ft	
(G) Depth to Bottom of Screen	595	ft	
(H) Saturated Filter Pack Length (G – F or B)	15	ft	
(I) Casing/Borehole Factor 4/10 = 1.2, (5/10 = 1.07), ____	1.07		

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	127.85	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Ysi 9500	R22229	
Turbidity Meter: Hach 2100	02821	
Pump: Portable Bennett	pmp fuels	
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear, fine bubbles

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/2/11 1016	0	490.39	20.72	7.24	304.5	7.49	203	7.80	1.79 Lpm
1120	30	490.44	19.37	7.53	285.4	14.02	200	2.04	
1223	60	490.41	19.44	7.59	201.9	14.91	193	1.01	
1327	90	490.36	19.38	7.60	284.6	14.91	191	1.10	
1409	110	490.33	19.46	7.62	283.9	14.65	189	0.59	
1430	120	490.32	19.46	7.62	281.4	14.77	190	0.51	1.0 Lpm
1447	125	490.30	19.79	7.69	283.8	13.38	196	0.51	
1457	128	490.29	19.63	7.64	282.4	12.73	198	0.49	
Values Prior to Sampling									
1457	128	490.29	19.63	7.64	282.4	12.73	198	0.49	1.0 Lpm

Field Alkalinity Result 103 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106069

Site / SWMU No.: 106 **Date:** 6-3-11

Weather: Sunny 80's **Time:** 0815

Field Crew: DA, AT **Crew Signature:** DM Aubrey

Review Signature: [signature] **Date Review:** 6/3/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact / Damaged - **Locked:** Yes / No **Well ID Mark:** Yes / No

Notes: VOC's @ wellbore Set pump to ~513ft

CALCULATIONS

(A) Depth to Well Bottom	526 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	490.67 ft	(K) Min Purge Volume (E + J)	53 gal
(C) Water Column Height (A-B)	35.33 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 / 5"=1.02	1.02	Parameter Meter: YSI Sitex 9500	R2272R
(E) One Well Casing Volume (C x D):	36.1 gal	Turbidity Meter: HACH 2100P	02871
(F) Depth to Top of Screen	506 ft	Pump: portable bennette	on file
(G) Depth to Bottom of Screen	521 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G-F, or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07		

PURGING INFORMATION

Description first water purged: clear, no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-3-11 / 0901	~~490.10~~	490.10	19.65	7.33	332.5	7.07	230	1.52	1.70L/min
0946	20	490.15	19.19	7.53	319.5	7.88	215	0.96	
1009	30	490.15	19.26	7.54	325.0	7.69	209	0.85	
1031	40	490.15	19.30	7.54	325.1	7.85	201	0.95	
1052	45	490.12	19.39	7.55	326.1	7.49	200	0.67	1L/min
1106	50	490.10	19.39	7.57	322.9	7.45	197	0.85	
1116	53	490.10	19.47	7.57	319.8	7.41	196	0.67	
Values Prior to Sampling									
1116	53	490.10	19.47	7.57	319.8	7.41	196	0.67	1 lpm

Field Alkalinity Result 124 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106073
Site / SWMU No.: 106
Date: 6-7-11
Weather: Sunny high 80's
Time: 0817
Field Crew: DA, AJ
Crew Signature: DA Aubrey
Review Signature: [signature]
Date Review: 6-21-11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's 0 in well bore Pump set to 507ft.

CALCULATIONS

(A) Depth to Well Bottom	519.53 ft
(B) Pre-Purge Depth to Water	483.20 ft
(C) Water Column Height (A-B)	36.33 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	37.1 gal
(F) Depth to Top of Screen	500 ft
(G) Depth to Bottom of Screen	514.53 ft
(H) Saturated Filter Pack Length (G-F, or B)	14.53 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	15.6 gal
(K) Min Purge Volume (E + J)	52.7 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter Hon Site 9500	R22229
Turbidity Meter HACH 2100P	67821
Pump portable bennette	on file
Field Alkalinity La Motte	3467

PURGING INFORMATION

Description first water purged: clear gray no odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-7-11 0910	0	482.75	20.79	7.09	293.2	7.84	204	15.6	1.70L/min
0955	20	482.80	19.00	7.46	286.1	8.44	211	11.0	
1017	30	482.80	19.02	7.48	288.7	8.27	206	4.82	
1040	40	482.80	19.04	7.50	286.2	8.22	200	3.10	
1059	45	482.78	19.13	7.51	287.7	8.11	199	2.67	1/2 pm
1118	50	482.78	19.23	7.52	285.3	7.98	197	2.44	
1129	53	482.79	19.27	7.52	288.0	7.78	196	213	
Values Prior to Sampling									
1129	53	482.79	19.27	7.52	288.0	7.78	196	2.13	2 Lpm

Field Alkalinity Result 118mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106074

Site / SWMU No.: 106 **Date:** 6/6/11

Weather: Sunny **Time:** 0815

Field Crew: AT, DM **Crew Signature:**

Review Signature: **Date Review:** 6-6-11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC @ 17.6 ppm in well bore Pump set to 577 ft

CALCULATIONS

(A) Depth to Well Bottom	589.53	ft
(B) Pre-Purge Depth to Water	484.34	ft
(C) Water Column Height (A-B)	105.19	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	107.3	gal
(F) Depth to Top of Screen	570	ft
(G) Depth to Bottom of Screen	584.53	ft
(H) Saturated Filter Pack Length (G – F, or B)	14.53	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	15.54	gal
(K) Min Purge Volume (E + J)	at 1.5 122.84	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R27229	
Turbidity Meter: HACH 2100P	07821	
Pump: portable Bennett	on file	
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/6/11 0901	0	483.49	19.37	7.16	279.6	11.33	201	5.89	1.80 Lpm
1004	30	483.54	19.27	7.50	270.7	15.88	204	4.79	
1107	60	483.53	19.41	7.55	268.6	16.07	194	2.45	
1210	90	483.51	19.56	7.58	268.4	15.74	190	2.10	
at ~~1253~~ 1252	110	483.50	19.64	7.59	268.9	15.91	189	0.89	
1310	115	483.48	20.02	7.62	266.3	14.06	189	1.00	1.0 Lpm
1329	120	483.46	20.00	7.61	261.1	13.53	190	1.06	
1340	123	483.45	19.94	7.61	268.1	13.53	190	1.11	
Values Prior to Sampling									
1340	123	483.45	19.94	7.61	268.1	13.53	190	1.11	1.0 Lpm

Field Alkalinity Result 816 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106075
Site / SWMU No.: 106
Date: 6-7-11
Weather: Sunny high 80's
Time: 1208
Field Crew: DA, AT
Crew Signature: DA Aubrey
Review Signature: [signature]
Date Review: 6/7/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOCs 0 in well bore pump set to 490 ft.

CALCULATIONS

(A) Depth to Well Bottom	505	ft
(B) Pre-Purge Depth to Water	~~484~~ 483.31	ft
(C) Water Column Height (A-B)	20.69	ft
(D) Casing Factor: 4"=0.65 (6"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	21.2	gal
(F) Depth to Top of Screen	480	ft
(G) Depth to Bottom of Screen	500	ft
(H) Saturated Filter Pack Length (G-F or B)	15.7	ft
(I) Casing/Borehole Factor 4/10 = 1.2, (6/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	16.79	gal
(K) Min Purge Volume (E + J)	38	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R27729	
Turbidity Meter: HACH 2100P	07821	
Pump: portable bennetta	on file	
Field Alkalinity: Hach Kit	4367	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-7-11 ~~1243~~	0 ~~DO~~	483.66	22.15	7.52	351.9	4.92	175	2.53	1.74L/min
1316 ~~1300~~	15 ~~25~~	483.77	19.33	7.30	347.4	4.84	188	3.76	
1338	25	483.78	19.43	7.27	369.2	4.62	184	2.55	
1359	30	483.71	19.78	7.30	388.4	4.47	182	1.80	0.98L/min
1416	35	483.71	19.83	7.32	387.3	4.50	180	1.56	
1427	38	483.71	20.03	7.35	385.7	4.53	177	1.34	
Values Prior to Sampling									
1427	38	483.71	20.03	7.35	385.7	4.53	177	1.34	0.98Lpm

Field Alkalinity Result 138 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106076

Site / SWMU No.: 106 **Date:** 6-16-11

Weather: Sunny high 80's **Time:** 0750

Field Crew: DA, AT **Crew Signature:** DA Mabry

Review Signature: Mark Jones **Date Review:** 6/16/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOCs 1,450 & LEL 8 in bore hole. VOCs 15 LEL 5 in BZ. Pump set to 487 ft

CALCULATIONS

(A) Depth to Well Bottom	505 ft	(J) Filter Pack Volume (H x I)	13.1 gal
(B) Pre-Purge Depth to Water	487.81 ft	(K) Min Purge Volume (E + J)	30.3 gal
(C) Water Column Height (A-B)	17.19 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: In Situ 9500	R22229
(E) One Well Casing Volume (C x D)	17.6 gal	Turbidity Meter: HACH 2100P	02821
(F) Depth to Top of Screen	480 ft	Pump: portable Bennette	on file
(G) Depth to Bottom of Screen	500 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G –F, or B)	12.19 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07		

PURGING INFORMATION

Description first water purged: light grey, odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-16-11 0835	0	487.81	21.46	6.97	766.5	3.62	194	137	1.0 L/min
0913	10	N/M	19.65	7.17	691.5	0.09	257	1.65	
0932	15	N/M	19.70	7.19	679.2	0.05	255	1.38	
0950	20	N/M	19.66	7.19	684.8	0.04	252	1.14	
1009	25	N/M	19.68	7.20	666.7	0.03	249	0.86	
1031	31	N/M	19.81	7.21	646.7	0.06	246	0.91	
Values Prior to Sampling									
1031	31	N/M	19.81	7.21	646.7	0.06	246	0.91	

Field Alkalinity Result 239 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106077
Site / SWMU No.: 106
Date: 6-20-11
Weather: Sunny, Windy 80's
Time: 0810
Field Crew: DA, AT
Crew Signature: [signature]
Review Signature: Mark Lyon
Date Review: 6/20/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's 28 in bore hole 0 in BZ Pump set to 511 ft

CALCULATIONS

(A) Depth to Well Bottom	524	ft
(B) Pre-Purge Depth to Water	488.40	ft
(C) Water Column Height (A-B)	35.6	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	36.4	gal
(F) Depth to Top of Screen	504	ft
(G) Depth to Bottom of Screen	519	ft
(H) Saturated Filter Pack Length (G - F, or B)	15	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	53	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22229	
Turbidity Meter: HACH 2100P	02821	
Pump: portable bennette	on file	
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear, No odor

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-20-11 0903	0	487.88	19.91	7.02	357.7	5.79	201	1.91	1.62 L/min
0950	20	487.92	19.22	7.47	315.8	6.37	188	1.12	
1013	30	487.92	19.29	7.48	317.1	6.02	176	0.67	
1037	40	487.92	19.33	7.51	319.0	6.50	169	0.60	
1054	45	487.91	19.54	7.51	335.7	5.74	165	0.62	0.96 L/min
1113	50	487.91	19.55	7.51	321.5	5.62	168	0.68	
1122	53	487.90	19.54	7.51	323.4	5.69	168	0.69	
Values Prior to Sampling									
1122	53	487.90	19.54	7.51	323.4	5.69	168	0.69	

Field Alkalinity Result 136 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106078

Site / SWMU No.: 106 **Date:** 6/17/11

Weather: Sunny 90's **Time:** 0800

Field Crew: AT, [illegible] **Crew Signature:** [signature]

Review Signature: [signature] **Date Review:** 6-17-11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOCs 9.2 ppm, set pump @ 581'

CALCULATIONS

(A) Depth to Well Bottom	593.5 ft
(B) Pre-Purge Depth to Water	487.57 ft
(C) Water Column Height (A-B)	105.93 ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02
(E) One Well Casing Volume (C x D):	108.1 gal
(F) Depth to Top of Screen	573.5 ft
(G) Depth to Bottom of Screen	588.5 ft
(H) Saturated Filter Pack Length (G -F or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07)	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	125.05 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter YSI 5500	R22229
Turbidity Meter Hach	02821
Pump Portable Bennett	on file
Field Alkalinity LaMotte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/17/11 0900	0	487.23	20.53	7.23	267.6	5.95	160	3.50	1.72 Lpm
1006	30	487.24	19.75	7.56	252.3	8.60	204	1.06	
1102	60	487.25	19.87	7.58	261.10	8.44	203	1.23	
1218	90	487.25	20.00	7.66	250.8	8.80	198	1.20	
1302	110	487.21	20.04	7.61	266.4	8.43	207	1.25	
1322	115	487.19	20.34	7.62	259.2	8.68	205	0.41	6.0 Lpm
1338	120	487.19	20.35	7.63	257.1	8.35	203	0.48	
1356	125	487.18	20.38	7.63	258.0	8.33	202	0.45	
Values Prior to Sampling									
1356	125	487.18	20.38	7.63	258.0	8.33	202	0.45	1.0 Lpm

Field Alkalinity Result 107 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106079 ~~106~~ MW

Site / SWMU No.: 106 **Date:** 5/17/11

Weather: Sunny high 70's breezy **Time:** 1215

Field Crew: DA, AW **Crew Signature:** DA AW

Review Signature: Mark Jon **Date Review:** 5/17/2011

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes:

CALCULATIONS

(A) Depth to Well Bottom	509.46 ft
(B) Pre-Purge Depth to Water	489.96 ft
(C) Water Column Height (A-B)	19.5 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	19.89 gal
(F) Depth to Top of Screen	484.92 ft
(G) Depth to Bottom of Screen	503.92 ft
(H) Saturated Filter Pack Length (G –F, or B)	13.96 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07

(J) Filter Pack Volume (H x I)	14.9 gal
(K) Min Purge Volume (E + J)	35 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In situ 9500	R22229
Turbidity Meter: HACH 2100P	02821
Pump: portable bennette	on file
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: clear, scent of product

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/17/11 1303	0	491.80	21.14	6.87	865.2	5.95	185	1.70	2 L/min
1317	5	491.87	19.18	7.07	859.3	0.53	15	0.76	
1326 ~~1329~~	10	491.88	19.01	7.09	858.5	0.02	1	0.64	
1335	15	491.89	18.93	7.08	849.8	-0.02	-2	0.49	
1344	20	491.89	18.96	7.09	848.7	-0.02	-2	0.50	1.1 ~~1.8~~
1358	25	491.86	18.92	7.09	839.2	0.00	8	1.12	~~1.8~~ L/min
1415	30	491.86	18.81	7.10	863.8	0.02	10	0.96	
1431	35	491.86	18.90	7.10	834.8	0.02	9	0.92	
Values Prior to Sampling									
1431	35	491.86	18.90	7.10	834.8	0.02	9	0.92	

Field Alkalinity Result 238 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106080
Site / SWMU No.: 106
Date: 5/16/11
Weather: Sunny windy 60's
Time: 0830
Field Crew: DA, AT
Crew Signature: DA, AT
Review Signature: [signature]
Date Review: 5/16/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: ~~VOC's~~ @ well bore hole Set pump @ 512 ft
VOCs 15.3 Ø in BZ
2a

CALCULATIONS

(A) Depth to Well Bottom	523.31 ft
(B) Pre-Purge Depth to Water	489.37 ft
(C) Water Column Height (A-B)	33.94 ft
(D) Casing Factor: 4"=0.65 (5")=1.02	1.02
(E) One Well Casing Volume (C x D):	34.61 gal
(F) Depth to Top of Screen	504.4 ft
(G) Depth to Bottom of Screen	519.4 ft
(H) Saturated Filter Pack Length (G - F or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07)	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	51 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R20809
Turbidity Meter: HACH 2100P	02821
Pump: portable bennette	on file
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: clear some scent of product + bubbles

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/16/11 0905	0	489.74	18.45	6.87	1034	5.32	74	3.65	1.72 L/min
0927	10	489.78	19.07	7.03	1049	0.11	-48	3.28	
0947	20	489.78	19.06	7.04	1021	0.20	-46	2.52	
1009	30	489.77	19.04	7.05	1024	0.32	-41	1.79	
1021	35	489.77	19.06	7.05	1008	0.37	-38	1.55	~~1.15L/m~~
1037	40	489.76	19.04	7.05	1000	0.37	-34	2.14	1.15L/min
1056	45	489.75	19.04	7.05	998.9	0.46	-31	1.50	
1118	51	489.75	19.06	7.06	1003	0.44	-30	1.29	
Values Prior to Sampling									
1118	51	489.75	19.06	7.06	1003	0.44	-30	1.29	1.15 L/m

Field Alkalinity Result 290 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106081
Site / SWMU No.: 106
Date: 5/12/11
Weather: Sunny 70's
Time: 0912
Field Crew: DA, AW
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/12/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's 16.2 in well bore hole Ø in BZ pump set @ 582 ft.

CALCULATIONS

(A) Depth to Well Bottom	594.76 ft
(B) Pre-Purge Depth to Water	491.50 ft
(C) Water Column Height (A-B)	103.26 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	105.32 gal
(F) Depth to Top of Screen	575.0 ft
(G) Depth to Bottom of Screen	590.0 ft
(H) Saturated Filter Pack Length (G–F or B)	15.0 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	122 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter In situ 9500	R20132
Turbidity Meter HACH 2100P	02821
Pump portable bennette	on file
Field Alkalinity LaMotte	3467

PURGING INFORMATION

Description first water purged: Clear, some bubbles

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/12/11 0912	~~492.21~~ 0.0	492.21	17.87	7.00	313.0	5.71	238	2.82	1.8 L/min
0953	20	492.29	18.98	6.99	308.5	7.50	236	1.24	
1035	40	492.29	18.99	7.00	305.6	9.17	236	0.74	
1116	60	492.27	19.13	7.00	301.7	10.34	237	0.77	
1157	80	492.26	19.15	7.06	300.2	10.98	239	0.62	
1241	100	492.25	19.36	7.01	297.5	11.79	277	0.81	
1312	112	492.21	19.46	7.01	296.5	10.86	276	0.84	~~1.02~~ 1.1 L/min @ 107 gal
1328	117	492.21	19.48	7.01	295.1	10.23	274	1.03	
1342	122	492.21	19.48	7.02	295.5	10.25	271	1.01	
Values Prior to Sampling									
1342	122	492.21	19.48	7.02	295.5	10.25	271	1.01	

Field Alkalinity Result 108 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF | **Well ID No.:** 106082

Site / SWMU No.: 106 | **Date:** 5/31/11

Weather: Sunny 80's | **Time:** 1200

Field Crew: AH DA | **Crew Signature:**

Review Signature: | **Date Review:** 5/31/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOC's @ in well bore, set pump @ 482'

CALCULATIONS

(A) Depth to Well Bottom	497.2	ft
(B) Pre-Purge Depth to Water	478.63	ft
(C) Water Column Height (A-B)	18.75	ft
(D) Casing Factor: 4"=0.65 (6"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	18.94	gal
(F) Depth to Top of Screen	472	ft
(G) Depth to Bottom of Screen	492	ft
(H) Saturated Filter Pack Length (G –F, or B)	13.37	ft
(I) Casing/Borehole Factor 4/10 = 1.2, (5/10 = 1.07),	1.07	

(J) Filter Pack Volume (H x I)	14.30	gal
(K) Min Purge Volume (E + J)	33.2	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: YSI 9500	D 22229	
Turbidity Meter: Hach 2100	02821	
Pump: Portable Bennett	on full	
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: Salty, light brown in color

Bad D.O. meter 6/5/11

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/31/11 1248	0	478.30	22.39	7.47	501.9	Ø	37	5.66	1.85 Lpm
1309	10	478.45	19.11	7.46	501.0	Ø	-44	2.27	
1329	20	478.45	19.05	7.42	493.1	Ø	-70	1.37	
1348	25	478.41	19.24	7.42	492.2	Ø	-65	0.66	1.0 Lpm
1406	30	478.40	19.37	7.44	488.7	Ø	-64	0.63	
1415	33	478.40	19.62	7.47	486.5	Ø	-59	0.87	
Values Prior to Sampling									
1415		478.40	19.62	7.47	486.5	Ø	-59	0.87	1.0 Lpm

Field Alkalinity Result 176 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB **Well ID No.:** 106083

Site / SWMU No.: 106 **Date:** 5/31/11

Weather: Sunny **Time:** 0815

Field Crew: AT BA **Crew Signature:**

Review Signature: **Date Review:** 5/31/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOCs Ø in well bore, pump set @ 502'

502'

CALCULATIONS

(A) Depth to Well Bottom	515.65 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	477.95 ft	(K) Min Purge Volume (E + J)	53.75 gal
(C) Water Column Height (A-B)	37.7 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: YSI 9500	E22229
(E) One Well Casing Volume (C x D):	38.45 gal	Turbidity Meter: HACH 2100	02821
(F) Depth to Top of Screen	495.45 ft	Pump: dedicated Bennett	or fed
(G) Depth to Bottom of Screen	510.45 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G–F or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.0), ____	16.05		

PURGING INFORMATION

Description first water purged: Clear BAD D.O. meter 6/15/11

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/31/11 0901	0	478.31	17.52	7.54	324.8	15.76	163	2.51	1.84 L/min
0921	10	478.36	18.55	7.62	388.7	19.79	171	0.98	
0942	20	478.38	18.63	7.58	401.6	27.74	172	0.63	
1002	30	478.36	18.78	7.58	407.7	32.78	170	1.50	
1023	40	478.36	18.81	7.61	411.8	Ø	166	1.33	
1041	45	478.34	18.79	7.60	399.3	Ø	179	0.39	1 L/min
1058	50	478.34	18.84	7.58	398	Ø	181	0.47	
1109	54	478.34	18.94	7.62	402.9	Ø	203	0.49	
Values Prior to Sampling									
1109	54	478.34	18.94	7.62	402.9	Ø	203	0.49	1 L/min

Field Alkalinity Result 110 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106084
Site / SWMU No.: 1016
Date: ~~0830~~ 5/23/11
Weather: Sunny 80's
Time: 0830
Field Crew: AT DA
Crew Signature:
Review Signature:
Date Review: 5/23/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) - No

Notes: VOC's @ in well bore / set pump @ 572'

CALCULATIONS

(A) Depth to Well Bottom	585 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	477.80 ft	(K) Min Purge Volume (E + J)	125.3 gal
(C) Water Column Height (A-B)	107.2 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=(1.02)	1.02	Parameter Meter: 9500 YSI	R22229
(E) One Well Casing Volume (C x D):	109.3 gal	Turbidity Meter: HACH 2100	02821
(F) Depth to Top of Screen	565 ft	Pump: Portable Bennett	On file
(G) Depth to Bottom of Screen	580 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G – F, or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.0), _____	16.05		

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/20/11 0953	0	477.30	18.80	7.77	288.0	8.42	225	3.44	1.8 Lpm
1117	40	477.37	19.16	7.71	271.9	10.96	191	3.96	
1159	60	477.36	19.34	7.74	275.5	12.02	185	2.17	
1241	80	477.34	19.39	7.76	271.1	11.75	179	1.93	
1323	100	477.31	19.39	7.76	277.6	12.42	177	1.22	
1345	110	477.31	19.47	7.76	279.4	11.95	175	1.05	1.0 Lpm
1410	115	477.27	19.45	7.76	272.1	11.43	181	0.95	
1429	120	477.26	19.52	7.77	271.9	12.60	179	0.92	
1443	125	477.25	19.60	7.76	272.9	11.51	178	1.01	
Values Prior to Sampling									
1443	125	477.25	19.60	7.76	272.9	11.51	178	1.01	1.0 Lpm

Field Alkalinity Result 114 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106097
Site / SWMU No.: 106
Date: 6/1/11
Weather: Sunny 80°s-90°s
Time: 1306
Field Crew: DA, AT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 6/1/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø in bore pump set to 514 ft.

CALCULATIONS

(A) Depth to Well Bottom	526 ft
(B) Pre-Purge Depth to Water	490.72 ft
(C) Water Column Height (A-B)	35.28 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	36 gal
(F) Depth to Top of Screen	506 ft
(G) Depth to Bottom of Screen	521 ft
(H) Saturated Filter Pack Length (G-F or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	53.~~05~~09 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In-situ 9500	R22229
Turbidity Meter: HACH2100P	02821
Pump: portable bennette	on file
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/1/11 1341	Ø	490.35	35.42	7.61	396.0	7.84	166	2.68	1.8L/min
1423	20	490.42	19.59	7.51	357.1	10.41	169	1.56	
1500	38	490.41	19.61	7.56	341.2	10.60	168	1.37	
1519	43	490.38	20.06	7.57	335.3	9.87	175	0.94	1.0L/min
1537	48	490.34	20.07	7.59	326.6	10.14	176	0.81	
1555	53	490.36	20.35	7.61	338.2	9.34	176	0.81	

Values Prior to Sampling

1555	53	490.3	20.35	7.61	338.2	9.34	176	0.81	

Field Alkalinity Result 100 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 106098

Site / SWMU No.: 106 **Date:** 6/1/11

Weather: Sunny 80's **Time:** 0820

Field Crew: D.A, AF **Crew Signature:** D.A. Aubrey

Review Signature: [signature] **Date Review:** 6/8/11

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged - **Locked:** (Yes) No **Well ID Mark:** (Yes) - No

Notes: VOC's @ well pad, pump set to 538'

CALCULATIONS

(A) Depth to Well Bottom	551.1	ft	
(B) Pre-Purge Depth to Water	490.81	ft	
(C) Water Column Height (A-B)	60.29	ft	
(D) Casing Factor: 4"=0.65 5"=1.02	1.02		
(E) One Well Casing Volume (C x D):	61.50	gal	
(F) Depth to Top of Screen	531	ft	
(G) Depth to Bottom of Screen	546	ft	
(H) Saturated Filter Pack Length (G-F, or B)	15	ft	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07		

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	77.55	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In situ 5500	R22229	
Turbidity Meter: Hach 2100P	02821	
Pump: Portable Bennett	on fuel	
Field Alkalinity: La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/1/11 0902	0	490.58	20.22	7.21	272.5	0	170	3.84	1.8 Lpm
0944	20	490.62	19.15	7.55	266.6	0	191	2.25	
1041	40	490.63	19.18	7.58	259.7	10.85	159	1.28	Stopped purge to repair DO sensor
1127	62	490.63	19.29	7.61	259.9	10.89	191	1.18	
1146	67	490.60	19.61	7.63	260.1	9.18	196	1.10	1.0 L/min
1204	72	490.60	19.50	7.63	260.3	9.35	196	1.16	
1222	77	490.60	19.87	7.71	261.0	9.78	194	1.05	
Values Prior to Sampling									
1222	77	490.60	19.87	7.71	261.0	9.78	194	1.05	

Field Alkalinity Result 116 mg/L as CaCO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: 140705 **Well ID No.:** 106099

Site / SWMU No.: 106 **Date:** 6-9-11

Weather: Sunny 80's **Time:** 0810

Field Crew: DA, AT **Crew Signature:** DA, Aubrey

Review Signature: [signature] **Date Review:** 6/14/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) / Damaged - **Locked:** (Yes) / No **Well ID Mark:** (Yes) / No

Notes: VOCs 0 in well bore Pump set to 508 ft. Gravel missing from well completion.

CALCULATIONS

(A) Depth to Well Bottom	521 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	488.33 ft	(K) Min Purge Volume (E + J)	50 gal
(C) Water Column Height (A-B)	32.64 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	Parameter Meter: In Situ 9500	R22729
(E) One Well Casing Volume (C x D):	33.30 gal	Turbidity Meter: HACH 2100P	02821
(F) Depth to Top of Screen	501 ft	Pump: portable bennette	on file
(G) Depth to Bottom of Screen	516 ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G F or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07		

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6-9-11 0855	20	484.97	19.69	7.30	436.4	8.56	209	1.29	1.77L/min
0940	20	485.03	19.02	7.55	415.6	9.14	206	1.51	
1002	30	485.02	19.15	7.58	418.1	9.30	197	1.58	
1013	35	485.01	19.14	7.58	412.6	9.16	196	1.34	
1032	40	484.99	19.28	7.59	406.3	8.55	193	1.25	1.0L/min
1050	45	484.99	19.41	7.60	414.6	8.50	190	0.95	
1110	50	484.98	19.46	7.69	415.1	8.63	186	0.89	
Values Prior to Sampling									
	50	484.98	19.46	7.69	415.1	8.63	186	0.89	

Field Alkalinity Result 107 mg/L as CaCO3

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB - BFF
Well ID No.: 1060100
Site / SWMU No.: 106
Date: 6-8-11
Weather: Sunny 90's
Time: 0815
Field Crew: DA, AT
Crew Signature:
Review Signature:
Date Review: 6-8-11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOC's 0 in well bore. No gravel on top of grout. Pump set to 533 ft.

CALCULATIONS

(A) Depth to Well Bottom	546 ft
(B) Pre-Purge Depth to Water	485.31 ft
(C) Water Column Height (A-B)	60.69 ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02
(E) One Well Casing Volume (C x D):	61.91 gal
(F) Depth to Top of Screen	526 ft
(G) Depth to Bottom of Screen	541 ft
(H) Saturated Filter Pack Length (G - F or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = (1.07), _____	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	78 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Horiba U-22	R72279
Turbidity Meter: HACH 2100P	07871
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Groundwater (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/8/11 0859	0	484.64	23.00	7.22	310.6	7.13	212	1.31	1.79 Lpm
0942	20	484.75	19.24	7.49	300.2	13.61	223	3.04	
1003	30	484.81	19.25	7.54	304.8	13.63	219	2.45	
1025	40	484.83	19.31	7.55	302.8	13.35	215	2.09	
1046	50	484.85	19.32	7.57	303.2	13.53	211	1.99	
1108	60	484.86	19.35	7.59	299.5	13.55	209	1.60	
1129	70	484.86	19.43	7.61	299.2	13.55	207	1.54	1.04 Lpm dropped rate to purge
1146	75	484.86	19.51	7.61	295.1	12.14	206	1.40	
1154	78	484.85	19.54	7.62	302.2	12.10	207	1.49	
Values Prior to Sampling									
1154	78	484.85	19.54	7.62	302.2	12.10	207	1.49	1.02 Lpm

Field Alkalinity Result 98 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106101
Site / SWMU No.: 106
Date: 5/3/11
Weather: Sunny 40's
Time: 08:00
Field Crew: AT, DA, ML
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 5/4/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: VOC's Ø in Well bore / set pump @ 505' in screen

CALCULATIONS

(A) Depth to Well Bottom	515.06	ft
(B) Pre-Purge Depth to Water	481.81	ft
(C) Water Column Height (A-B)	33.25	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	33.91	gal
(F) Depth to Top of Screen	495.93	ft
(G) Depth to Bottom of Screen	511.21	ft
(H) Saturated Filter Pack Length (G – F, or B)	15.28	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	16.34	gal
(K) Min Purge Volume (E + J)	50.25	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	R20809	
Turbidity Meter Hach 2100	2821	
Pump Portable Bennett pump	on File	
Field Alkalinity La Motte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/3/11 0919	0	481.51	16.96	7.26	809.6	10.07	205	4.31	1.75 Lpm
0937	10	481.53	18.58	7.61	781.6	10.48	213	1.81	
0957	20	481.53	18.56	7.65	737.9	10.65	205	1.12	
1016	30	481.53	18.64	7.64	722.9	10.73	199	1.18	
1036	40	481.52	18.67	7.67	718.0	11.09	194	1.13	1.1 Lpm
1049	45	481.50	18.52	7.68	709.4	9.52	193	0.85	
1105	50	481.50	18.44	7.69	715.2	9.55	191	0.85	
Values Prior to Sampling									
1105	50	481.50	18.44	7.69	715.2	9.55	191	0.85	1.1 Lpm

Field Alkalinity Result 82 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

140705

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB- BFF
Well ID No.: 106102
Site / SWMU No.: 106
Date: ~~12:47~~ 5/3/11
Weather: Sunny 70's
Time: 12:47
Field Crew: AT, DA, RB
Crew Signature:
Review Signature:
Date Review: 5/4/11

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged - **Locked:** (Yes) - No **Well ID Mark:** (Yes) - No

Notes: VOCs 0 in well bore / set Pump @ 525' in screen

CALCULATIONS

(A) Depth to Well Bottom	540.21	ft
(B) Pre-Purge Depth to Water	482.05	ft
(C) Water Column Height (A-B)	58.16	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	59.32	gal
(F) Depth to Top of Screen	521.08	ft
(G) Depth to Bottom of Screen	534.84	ft
(H) Saturated Filter Pack Length (G-P, or B)	13.76	ft
(I) Casing/Borehole Factor 4/10 = 1.2 (5/10 = 1.07), _____	1.07	

(J) Filter Pack Volume (H x I)	14.7	gal
(K) Min Purge Volume (E + J)	74.04	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter YSI 9500	R20809	
Turbidity Meter Hach 2100P	2821	
Pump Portable Bennett pump	on F16	
Field Alkalinity LaMotte	3467	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
5/3/11 1300	0	482.58	19.10	7.72	380.0	6.71	170	1.71	1.9
1323	10	482.64	19.08	7.82	374.0	6.34	163	1.71	
1345	20	482.64	18.99	7.84	367.6	6.46	161	0.92	
1413	40	482.63	19.05	7.84	352.4	7.08	160	0.79	
1434	50	482.64	19.03	7.85	357.3	7.36	160	0.81	
1456	60	482.64	19.10	7.85	354.4	7.21	159	0.56	
1507	65	482.61	19.10	7.84	349.2	5.84	161	0.60	0.95
1526	70	482.61	19.08	7.85	350.6	5.85	162	0.65	
1540	74	482.61	19.12	7.85	350.6	5.86	162	0.65	
Values Prior to Sampling									
1540	74	482.61	19.12	7.85	350.6	5.86	162	0.65	0.95

Field Alkalinity Result 103 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 3411
Site / SWMU No.: 106
Date: 4/7/11
Weather: Sunny
Time: 1300
Field Crew: AT, DA
Crew Signature: [signature]
Review Signature: Mark Lyon
Date Review: 4/7/11

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: well bore VOC's 866 LEL 13 O_2 15.4

CALCULATIONS

(A) Depth to Well Bottom	503	ft
(B) Pre-Purge Depth to Water	485.81	ft
(C) Water Column Height (A-B)	17.19	ft
(D) Casing Factor: 4"=0.65 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	11.17	gal
(F) Depth to Top of Screen	477	ft
(G) Depth to Bottom of Screen	502	ft
(H) Saturated Filter Pack Length (G –F, or B)	16.19	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	13.42	gal
(K) Min Purge Volume (E + J)	30.5	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In situ 9500	R20132	
Turbidity Meter: Hach 2100	2818	
Pump: Bennett + dedicated	-	
Field Alkalinity: La Motte	04885	

PURGING INFORMATION

Description first water purged:

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV) MC 5/11/11	Turbidity (NTU)	Comment
4/7/11 1350	0	485.81	19.29	5.21	260.4	6.85	0.30	1.26	2.1 Lpm
1359	5	485.84	19.26	5.39	281.6	6.32	0.28	1.08	
1409	10	485.84	19.55	5.47	293.3	1.43	0.26	1.11	
1421	15	485.86	19.34	5.48	252.3	.92	0.25	.91	
1434	20	485.86	19.18	5.48	226.4	0.57	0.25	.68	
1442	25	485.87	19.23	5.49	226.4	0.57	0.25	.58	
1451	30	485.87	19.39	5.50	220.5	0.44	0.24	.57	
1454	32	485.87	19.27	5.50	215.5	0.44	0.25	.57	
Values Prior to Sampling									
1454	32	485.87	19.27	5.50	215.5	0.44	0.25	.57	1 Lpm

Field Alkalinity Result 175 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** KAFB 0083

Site / SWMU No.: 106 **Date:** 4/5/11

Weather: Sunny **Time:** 1000

Field Crew: AT, OA **Crew Signature:**

Review Signature: **Date Review:** 4/5/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: Well 3 @ water plant @ KAFB

CALCULATIONS

(A) Depth to Well Bottom	ft
(B) Pre-Purge Depth to Water	ft
(C) Water Column Height (A-B)	ft
(D) Casing Factor: 4"=0.65 5"=1.02	
(E) One Well Casing Volume (C x D):	gal
(F) Depth to Top of Screen	ft
(G) Depth to Bottom of Screen	ft
(H) Saturated Filter Pack Length (G –F, or B)	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	

(J) Filter Pack Volume (H x I)	gal
(K) Min Purge Volume (E + J)	gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 4500	
Turbidity Meter: Hach	2818
Pump	
Field Alkalinity: LAMOTTE	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/5/11 1014	0	Ø	25.11	6.73	370.7	7.28	.20	.60	
4/5/11 1034	10	Ø	19.90	7.90	372.1	7.15	.16	.64	
Values Prior to Sampling									
4/5/11 1034	10	Ø	19.90	7.90	372.1	7.15	.16	.64	

Field Alkalinity Result 130 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB - BFF **Well ID No.:** KAFB 0015

Site / SWMU No.: 106 **Date:** 4/5/11

Weather: Sunny, Warm **Time:** 0830

Field Crew: AT **Crew Signature:**

Review Signature: **Date Review:** 4/5/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: KAFB 0015 groundwater production well

CALCULATIONS

(A) Depth to Well Bottom	ft
(B) Pre-Purge Depth to Water	ft
(C) Water Column Height (A-B)	ft
(D) Casing Factor: 4"=0.65 5"=1.02	
(E) One Well Casing Volume (C x D):	gal
(F) Depth to Top of Screen	ft
(G) Depth to Bottom of Screen	ft
(H) Saturated Filter Pack Length (G –F, or B)	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	

(J) Filter Pack Volume (H x I)	gal
(K) Min Purge Volume (E + J)	gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insite 9500	
Turbidity Meter: Hach	2818
Pump	
Field Alkalinity: LaMotte	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/5/11 0834	0	Ø	27.12	6.43	392.5	3.63	.20	.58	
4/5/11 0915	10	Ø	26.69	7.97	402.1	4.42	.14	.58	
Values Prior to Sampling									

Field Alkalinity Result 140 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** KAFB0016

Site / SWMU No.: 106 **Date:** 0820 6/2/11

Weather: Sunny 80's **Time:** 0820

Field Crew: AB DA **Crew Signature:**

Review Signature: **Date Review:** 6-2-11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: Sample collected @ production well

CALCULATIONS

(A) Depth to Well Bottom	Ø	ft
(B) Pre-Purge Depth to Water	Ø	ft
(C) Water Column Height (A-B)	Ø	ft
(D) Casing Factor: 4"=0.65 5"=1.02	Ø	
(E) One Well Casing Volume (C x D):	Ø	gal
(F) Depth to Top of Screen	Ø	ft
(G) Depth to Bottom of Screen	Ø	ft
(H) Saturated Filter Pack Length (G –F, or B)	Ø	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	Ø	

(J) Filter Pack Volume (H x I)	Ø	gal
(K) Min Purge Volume (E + J)	Ø	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter Insitu 9500	022229	
Turbidity Meter Hach 2100	02821	
Pump		
Field Alkalinity La Motte	3467	

PURGING INFORMATION

Description first water purged:

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
6/2/11 0836	5	Ø	27.38	7.59	406.7	4.57	160	0.28	
Values Prior to Sampling									
6/2/11 0836	5	Ø	27.38	7.59	406.7	4.57	160	0.28	

Field Alkalinity Result 64 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF **Well ID No.:** 1 ST 106-VA2

Site / SWMU No.: 106 **Date:** 4/1/11

Weather: Sunny **Time:** 11:00

Field Crew: AT, RB, DA **Crew Signature:**

Review Signature: Mark Lyon **Date Review:** 4/1/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: ST 106 VA-2, production well

CALCULATIONS

(A) Depth to Well Bottom	ft
(B) Pre-Purge Depth to Water	ft
(C) Water Column Height (A-B)	ft
(D) Casing Factor: 4"=0.65 5"=1.02	
(E) One Well Casing Volume (C x D):	gal
(F) Depth to Top of Screen	ft
(G) Depth to Bottom of Screen	ft
(H) Saturated Filter Pack Length (G –F, or B)	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	

(J) Filter Pack Volume (H x I)	gal
(K) Min Purge Volume (E + J)	gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500 mp Troll	
Turbidity Meter: Hach 2100 P	2/23
Pump: Low Flow pump	IT 25917
Field Alkalinity: Low Motto Model DRA	3467

PURGING INFORMATION

Description first water purged: clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/1/11 1118	0	0	72.00	6.40	332.6	6.25	0.20	1.98	
4/1/11 1126	12	0	71.86	7.53	330.6	5.22	0.05	1.06	
Values Prior to Sampling									
4/1/11 1126	12		71.86	7.53	330.6	5.22	0.05	1.06	

Field Alkalinity Result 135 mg/L as $CaCO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 2819-R-CRT
Site / SWMU No.: 106
Date: 4/12/11
Weather: Fair, partly cloudy
Time: 12:50
Field Crew: DA, AT
Crew Signature: D N Aubrey
Review Signature: Antonio Jolle
Date Review: 4/12/11

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged - N/A **Locked:** Yes - No **Well ID Mark:** Yes - No

Notes: Residential

CALCULATIONS

(A) Depth to Well Bottom	Ø	ft
(B) Pre-Purge Depth to Water	Ø	ft
(C) Water Column Height (A-B)	Ø	ft
(D) Casing Factor: 4"=0.65 5"=1.02	Ø	
(E) One Well Casing Volume (C x D):	Ø	gal
(F) Depth to Top of Screen	Ø	ft
(G) Depth to Bottom of Screen	Ø	ft
(H) Saturated Filter Pack Length (G –F, or B)	Ø	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	Ø	

(J) Filter Pack Volume (H x I)	Ø	gal
(K) Min Purge Volume (E + J)	Ø	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Un-situ 9500	R2809	
Turbidity Meter: HACH	2821	
Pump: ~~dedicated to~~ N/A		
Field Alkalinity: La Motte	04885	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm²)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
4/12/11 12:58	Ø	N/A	20.24	7.64	335.9	6.30	0.21	0.64	
Values Prior to Sampling									
4/12/11 1258	Ø	n/a	20.24	7.64	335.9	6.30	0.20	0.64	

Field Alkalinity Result 138 mg/L as $CACO_3$

Note: For calculations, additional casing factors (D) and casing/borehole factors (I) can be found in the *Groundwater Investigation Work Plan, Part I: Field Investigation Activities*

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