Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 2814-R-CRT
Site / SWMU No.: 106
Date: 1/23/12
Weather: Sunny
Time: 0835
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 1-23-12

WELL OBSERVATIONS

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

Notes: Sampled from well PVC pipe

CALCULATIONS

(A) Depth to Well Bottom	N/A	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)	N/A	gal
(K) Min Purge Volume (E + J)		gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: 9500 Insitu	R22214	
Turbidity Meter: Hach	2821	
Pump: Geo pump	025917	
Field Alkalinity: LaMotte	3467 A7	

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
1/23/12 0912	Ø	Ø	17.65	6.27	345.9	6.66	184	0.27	
Values Prior to Sampling									
0912	Ø	Ø	17.65	6.27	345.9	6.66	184	0.27	

Field Alkalinity Result 124. Mg/L as $CaCO_3$
Sample ID: GW0375
Bubbles NA

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.: KAFB-003
Site / SWMU No.: 106
Date: 1/23/12
Weather: Sunny
Time: 1230
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 1-24-12

WELL OBSERVATIONS

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

Notes: KAFB-003

CALCULATIONS

(A) Depth to Well Bottom	N/A	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)	N/A	gal
(K) Min Purge Volume (E + J)		gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter 9500 Inola	122214	
Turbidity Meter Hach	2821	
Pump Geo Tech		
Field Alkalinity LaMotte	3467 #7	

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
1/23/12 1246	Ø	Ø	19.42	6.81	334.8	7.72	155	0.24	
Values Prior to Sampling							155 DO		
1246	Ø	Ø	19.42	6.81	334.8	7.72	155	0.24	

Field Alkalinity Result 98 Mg/L as CaCO3
Sample ID: GW0376
Bubbles GW0376-MS
GW0376-MSD

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.: KAFB-015
Site / SWMU No.: 100
Date: ~~1045~~ 1/23/12
Weather: cloudy 40s
Time: 1045
Field Crew: AT, TN
Crew Signature:
Review Signature:
Date Review: 1-23-12

WELL OBSERVATIONS

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

Notes: KAFB-015 production well

CALCULATIONS

(A) Depth to Well Bottom	N/A	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)	N/A	gal
(K) Min Purge Volume (E + J)		gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R222215	
Turbidity Meter: Hach	2821	
Pump: geo Tech pump		
Field Alkalinity: La Motte	3467 #7	

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
1/23/12 1116	Ø	Ø	25.96	6.97	399.3	4.83	159	0.36	
Values Prior to Sampling									
1116	Ø	Ø	25.96	6.97	399.3	4.83	159	0.36	

Field Alkalinity Result 092 mg/L as CaCO3 Sample ID: GW0377

Bubbles NA

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

Site / SWMU No.: 106

Weather: Sunny

Field Crew: AT, JN

Review Signature: [signature]

Well ID No.: KAFB-016

Date: 1/23/12

Time: 1401

Crew Signature: [signature]

Date Review: 1-24-12

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) No

Well ID Mark: (Yes) - No

Notes: KAFB-016

CALCULATIONS

(A) Depth to Well Bottom	N/A	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)	N/A	gal
(K) Min Purge Volume (E + J)		gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: GeoTech		
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
1/23/12 1410	Ø	Ø	26.82	7.07	432.1	3.79	160	0.37	

Values Prior to Sampling

1410	Ø	Ø	26.82	7.07	432.1	3.79	160	0.37	

Field Alkalinity Result 101 mg/L as $CaCO_3$

Sample ID: GW0378 Bubble

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.: ST 106 - VA2
Site / SWMU No.: 106
Date: 1/24/12
Weather: snowy
Time: 0830
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 1-24-12

WELL OBSERVATIONS

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

Notes: ST 106 - VA2

CALCULATIONS

(A) Depth to Well Bottom	N/A	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)	N/A	gal
(K) Min Purge Volume (E + J)	↓	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Inst 9500	R22214	
Turbidity Meter: Hach	27821	
Pump: n/a	n/a	
Field Alkalinity: La Motte	3467 #7	

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
1/24/12 0910	Ø	Ø	20.76	6.69	344.2	5.65	182	0.18	
Values Prior to Sampling									
910	Ø	Ø	20.76	6.69	344.2	5.65	182	0.18	

Field Alkalinity Result 110 mg/L as $CaCO_3$ Sample ID: GW0379
Bubbles GW0380

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.: 03411
Site / SWMU No.: 106
Date: 2-3-12
Weather: Sunny 40s
Time: 1132
Field Crew: DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/3/12

WELL OBSERVATIONS

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

Notes: VOCs 172 in BH 0 in BZ

CALCULATIONS

(A) Depth to Well Bottom	503	ft	(J) Filter Pack Volume (H x I)	20.18 gal
(B) Pre-Purge Depth to Water	485.19	ft	(K) Min Purge Volume (E + J)	32 gal
(C) Water Column Height (A-B)	17.81	ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor 4"=0.68 5"=1.02	0.65		Parameter Meter: In Situ 9500	R72831
(E) One Well Casing Volume (C x D):	11.58	gal	Turbidity Meter: HACH 2100P	07818
(F) Depth to Top of Screen 477	502.80	ft	Pump: dedicated bennett	on file
(G) Depth to Bottom of Screen	502	ft	Field Alkalinity: La Motte	3467#8
(H) Saturated Filter Pack Length (G -F, or B)	16.81	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
2-3-12 1200	0	485.19	18.70	7.31	428.7	6.90	231	0.87	2qt/min
1227	17	485.23	19.30	9.32	461.5	0.73	207	0.79	
1241	22	485.22	19.16	7.40	418.4	0.97	199	0.71	1.0L/min
1300	27	485.21	19.19	7.41	418.4	0.85	191	0.60	
1319	32	485.20	19.12	7.43	411.4	0.79	184	0.87	
Values Prior to Sampling									
1319	32	485.20	19.12	7.47	411.4	0.79	184	0.87	1.0L/min

Field Alkalinity Result 172 mg/L as $CaCO_3$ Sample ID: GW0381

Bubbles None

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.: 106001
Site / SWMU No.: 106
Date: 2-1-12
Weather: Sunny 50's
Time: 1135
Field Crew: DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/2/12

WELL OBSERVATIONS

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

Notes: VOCs 10.4 in BH

CALCULATIONS

(A) Depth to Well Bottom	508.5	ft
(B) Pre-Purge Depth to Water	486.93	ft
(C) Water Column Height (A-B)	21.57	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	14.03	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)	21.07	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	25.29	gal
(K) Min Purge Volume (E + J)	40	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	3467 #8	

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
2-1-12 1218	Ø	486.93	15.51	6.79	377.7	8.02	211	0.48	3.0L/min
1237	15	486.94	19.45	7.38	392.0	0.46	-97	0.53	
1250	25	486.95	19.44	7.39	388.9	0.46	-97	0.62	
1309	30	486.95	19.12	7.39	392.5	0.65	-85	0.59	1.0L/min
1328	35	486.94	19.03	7.41	390.8	0.67	-80	0.56	
1347	40	486.93	19.07	7.42	390.6	0.71	-74	0.55	
Values Prior to Sampling									
1347	40	486.93	19.07	7.42	390.2	0.71	-74	0.55	1.0L/min

Field Alkalinity Result 128 mg/L as CaCO3 Sample ID: GW0382

Bubbles None

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
Site / SWMU No.: 106
Weather: Sunny 60's
Field Crew: DA, DM
Review Signature: [signature]

Well ID No.: 106002
Date: 3-22-12
Time: ~~1215~~ 1215
Crew Signature: [signature]
Date Review: 3/22/2012

WELL OBSERVATIONS

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

Notes: VOCs 0.4 in BH & Ø in BZ

CALCULATIONS

(A) Depth to Well Bottom	505 ft
(B) Pre-Purge Depth to Water	483.46 ft
(C) Water Column Height (A-B)	21.54 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	14.001 gal
(F) Depth to Top of Screen	479 ft
(G) Depth to Bottom of Screen	504 ft
(H) Saturated Filter Pack Length (G –F, or B)	20.54 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	24.648 gal
(K) Min Purge Volume (E + J)	39 gal gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#9

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
3-22-12 1251	Ø	483.46	18.09	7.11	351.1	6.42	57	6.42	3.0L/min
1309	14	483.48	18.95	7.71	348.8	4.54	138	2.51	
1322	24	483.50	18.93	7.75	352.9	4.48	155	1.20	
1341	29	483.48	18.79	7.75	355.2	4.55	170	0.80	1.0L/min
1400	34	483.47	18.69	7.76	355.8	4.66	180	0.78	
1419	39	483.46	18.67	7.77	354.1	4.58	188	0.57	

Values Prior to Sampling

1419	39	483.46	18.67	7.77	354.1	4.58	188	0.57	1.0L/min

Field Alkalinity Result 116 mg/L as $CaCO_3$ Sample ID: GW0383

Bubbles None

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.: 106005
Site / SWMU No.: 106
Date: 2/29/12
Weather: Sunny
Time: 1300
Field Crew: AT/TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 3/12/2012

WELL OBSERVATIONS

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

Notes: VOCs 19.5 ppm in WB, Set pump @ 486'

CALCULATIONS

(A) Depth to Well Bottom	507	ft
(B) Pre-Purge Depth to Water	488.35	ft
(C) Water Column Height (A-B)	18.65	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	12.12	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)	17.65	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	21.18	

(J) Filter Pack Volume (H x I)	21.18	gal
(K) Min Purge Volume (E + J)	33	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: LaMotte	3467 #4	

PURGING INFORMATION

Description first water purged: Dark Grey in Color, 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
2/29/12 1338	Ø	488.35	17.88	6.65	1123	3.78	-205	66.6	1.24 L/m
1439	20	488.57	20.25	6.51	1174	2.69	-120	70.6	
1457	25	488.47	20.54	6.51	1174	2.69	-210	85.8	0.96 L/m
1515	30	488.47	20.54	6.51	1174	2.69	-210	76.8	
1526	33	488.47	20.12	6.76	1090	0	-290	70.8	
AT ~~1527~~	~~34~~								
Values Prior to Sampling									
1526	33								0.96 L/m

Field Alkalinity Result 368 mg/L as $CaCO_3$ Sample ID: GW0384

Bubbles ~~X~~ YES Very effervescent
D NO

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.: 106006
Site / SWMU No.: 106
Date: 2/28/12
Weather: Cloudy, Windy
Time: 1345
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/28/2012

WELL OBSERVATIONS

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

Notes: VOC'S 2000 ppm in WB, set pump @ 492'

CALCULATIONS

(A) Depth to Well Bottom	511	ft
(B) Pre-Purge Depth to Water	494.21	ft
(C) Water Column Height (A-B)	16.79	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	10.9	gal
(F) Depth to Top of Screen	483.5	ft
(G) Depth to Bottom of Screen	508.5	ft
(H) Saturated Filter Pack Length (G – F, or B)	14.29	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	17.1	gal
(K) Min Purge Volume (E + J)	28	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	1222214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: CaMotte	3467 ff	

PURGING INFORMATION

Description first water purged: Clear, 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
2/28/12 1403	Ø	494.21	14.61	7.84	358.0	3.92	-230	2.85	1.38 L/m
1444	15	492.77	18.60	7.49	369.0	0.43	-245	1.50	
1502	20	492.77	17.86	7.45	377.9	0.57	-233	0.76	0.96 L/m
1520	25	492.75	17.35	7.45	373.4	0.55	-228	0.73	
1531	28	492.75	17.89	7.47	363.4	0.49	-227	0.78	
Values Prior to Sampling									
1531	28	492.75	17.89	7.47	363.4	0.49	-227	0.78	0.96 L/m

Field Alkalinity Result 172 Mg/L as CaCO3 Sample ID: GW0385

NO Bubbles

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.: 106007
Site / SWMU No.: 106
Date: 2-2-12
Weather: Cloudy 30's
Time: 0840
Field Crew: DA
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/3/12

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark (Yes) - No
Notes: VOCs 9.6m BH

CALCULATIONS

(A) Depth to Well Bottom	511	ft
(B) Pre-Purge Depth to Water	491.20	ft
(C) Water Column Height (A-B)	19.8	ft
(D) Casing Factor: 4"=0.65 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	12.87	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)	17.8	ft
(I) Casing/Borehole Factor 4/10 = 1.2 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	21.36	gal
(K) Min Purge Volume (E + J)	35	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: Dedicated Bennett	on file	
Field Alkalinity: La Motte	34677#8	

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
2-3-12 0909	0	491.20	17.56	6.83	486.2	8.75	236	0.99	2.2 L/min
0926	10	491.22	18.45	7.71	343.9	5.17	187	1.21	
0943	20	491.23	18.33	7.73	346.5	5.00	148	0.84	
1002	25	491.22	17.97	7.75	346.8	4.98	144	0.79	1.0 L/min
1021	30	491.21	17.96	7.75	347.3	4.94	146	0.81	
1040	35	491.21	18.09	7.76	345.4	4.95	146	0.84	
Values Prior to Sampling									
1040	35	491.21	18.09	7.76	345.4	4.95	146	0.84	1.0 L/min

Field Alkalinity Result 128 mg/L as $CaCO_3$ Sample ID: GW0386
Bubbles None

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.: 106008
Site / SWMU No.: 106
Date: 2/29/12
Weather: Sunny
Time: 0800
Field Crew: AT, JD
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/29/2012

WELL OBSERVATIONS

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

Notes: VOCs ND in WB, set pump @ 490'

CALCULATIONS

(A) Depth to Well Bottom	513.5	ft
(B) Pre-Purge Depth to Water	493.39	ft
(C) Water Column Height (A-B)	20.11	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	13.07	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)	17.61	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	21.1	

(J) Filter Pack Volume (H x I)	21.1	gal
(K) Min Purge Volume (E + J)	34	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: La Motte	3467-7	

PURGING INFORMATION

Description first water purged: Grey in Color, 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
2/29/12 0856	Ø	493.39	12.50	7.58	558.6	5.19	-267	26.5	1.34 L/m
0953	20	493.37	18.55	7.44	436.4	1.59	-255	4.53	
1011	25	493.36	18.33	7.45	428.2	1.41	-254	1.71	1.0 L/m
1029	30	493.36	18.53	7.43	419.8	1.04	-256	1.47	
1044	34	493.35	18.64	7.42	415.9	0.70	-261	1.36	
Values Prior to Sampling									
1044	34	493.35	18.64	7.42	415.9	0.70	-261	1.36	1.0 L/m

Field Alkalinity Result 192 Mg/L as CaCO3 Sample ID: GW0387

Bubbles ☒ YES ☐ NO

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
Site / SWMU No.: 106
Weather: Windy
Field Crew: DA
Review Signature: [signature]

Well ID No.: 106009
Date: 2-27-12
Time: 0959
Crew Signature: [signature]
Date Review: 02/27/2012

WELL OBSERVATIONS

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

Notes: VOCs 0.4 in BH

CALCULATIONS

(A) Depth to Well Bottom	507.5 ft
(B) Pre-Purge Depth to Water	486.86 ft
(C) Water Column Height (A-B)	20.64 ft
(D) Casing Factor: 4"=0.65, ~~6"=1.02~~	~~0.4~~ 0.65
(E) One Well Casing Volume (C x D):	13.42 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)	18.14 ft
(I) Casing/Borehole Factor 4/10 = 1.2, ~~8/10 = 1.07~~, _____	~~1.07~~ 1.2

(J) Filter Pack Volume (H x I)	21.77 gal
(K) Min Purge Volume (E + J)	36 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R27831
Turbidity Meter: HACH 2100P	07818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	546749

PURGING INFORMATION

Description first water purged: Clear, Strong 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
2-27-12 1019	0	486.86	17.53	6.86	1127	0.45	-112	5.09	1.6 L/min
1043	10	486.87	21.40	6.81	1106	0.05	-130	3.29	
1109	21	486.88	21.48	6.71	1108	0.02	-135	2.87	
1128	26	486.88	20.45	6.72	1114	0.02	-138	2.93	1.0 L/min
1149	31	486.87	20.47	6.72	1108	0.01	-141	1.84	
1206	36	486.86	20.55	6.72	1109	0.01	-145	2.15	
Values Prior to Sampling									
1206	36	486.86	20.55	6.72	1109	0.01	-145	2.15	1.0 L/min

Field Alkalinity Result 316 mg/L as $CaCO_3$ Sample ID: GW0388

Bubbles None

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
Site / SWMU No.: 106
Weather: Cloudy
Field Crew: AT, JR
Review Signature: [signature]

Well ID No.: 106010
Date: 2/16/12
Time: 1245
Crew Signature: [signature]
Date Review: 2/17/12

WELL OBSERVATIONS

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

Notes: VOCs 81.2 ppm in BH, Set pump @ 485'

CALCULATIONS

(A) Depth to Well Bottom	510.5 ft
(B) Pre-Purge Depth to Water	485.96 ft
(C) Water Column Height (A-B)	24.54 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	1595 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)	22.04 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2

(J) Filter Pack Volume (H x I)	26.44 gal
(K) Min Purge Volume (E + J)	42 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Portable Bennett	on file
Field Alkalinity: LaMotte	3467

PURGING INFORMATION

Description first water purged: clear w/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
2/16/12 1305	0	485.96	15.41	7.49	394.0	6.50	-75	7.58	1.5 L/min
1406	25	485.90	18.28	7.47	490.5	1.16	-224	4.01	
1424	30	485.90	17.99	7.47	502.2	0.96	-229	3.31	1.0 L/m
1442	35	485.90	17.86	7.49	505.1	0.92	-226	3.09	
1509	42	485.90	17.85	7.49	520.8	1.02	-224	3.33	
Values Prior to Sampling									
1509	42	485.90	17.85	7.49	520.8	1.02	-224	3.33	1.0 L/m

Field Alkalinity Result 185 mg/L as $CaCO_3$

Sample ID: GW0389
Bubbles GW0390
DOM

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
Site / SWMU No.: 106
Weather: Sunny 40°s
Field Crew: DA, DM
Review Signature:

Well ID No.: 106011
Date: 2-13-12
Time: 1018
Crew Signature: [signature]
Date Review: [signature] 2-13-2012

WELL OBSERVATIONS

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

Notes: VOCs 135 in BH

CALCULATIONS

(A) Depth to Well Bottom	516	ft
(B) Pre-Purge Depth to Water	495.31	ft
(C) Water Column Height (A-B)	20.69	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	13.45	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))	15.69	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	18.83	gal
(K) Min Purge Volume (E + J)	33	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: Dedicated bladder	on file	
Field Alkalinity: La Motte	3467#9	

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
2-13-12 / 1027	Ø	495.31	14.26	8.12	343.5	8.87	56	6.55	3.0 L/min
1039	9	495.32	18.82	7.80	296.1	5.28	70	1.26	
1051	18	495.32	18.84	7.78	295.8	5.16	75	0.76	
1110	23	495.36	18.07	7.77	295.2	5.22	86	1.05	1.0 L/min
1129	28	495.36	18.00	7.78	296.2	5.19	92	1.06	
1148	33	495.35	18.09	7.78	296.3	5.15	98	0.54	
Values Prior to Sampling									
1148	33	495.35	18.09	7.78	296.3	5.15	98	0.54	1.0 L/min

Field Alkalinity Result 96 mg/L as $CaCO_3$ Sample ID: GW0391

Bubbles none present

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
Site / SWMU No.: 106
Weather: Sunny Windy 60's
Field Crew: DA
Review Signature: [illegible]

Well ID No.: 106014
Date: 2-27-12
Time: 1357
Crew Signature: [illegible]
Date Review: 2/28/2012

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOC 54.5 in BH

CALCULATIONS

(A) Depth to Well Bottom	516	ft
(B) Pre-Purge Depth to Water	492.61	ft
(C) Water Column Height (A-B)	23.39	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	15.21	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)	18.39	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	22.1	gal
(K) Min Purge Volume (E + J)	38	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	07818	
Pump: Dedicated Bennett on file		
Field Alkalinity: LaMotte	3467#9	

PURGING INFORMATION

Description first water purged: Clear, Strong 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
2-27-12 1326	0	492.61	15.94	7.44	429.9	6.70	-50	1.72	1.56L/min
1358	13	492.62	18.90	7.32	450.2	0.06	-208	1.69	
1423	23	492.64	18.90	7.35	454.5	0.03	-217	1.84	
1442	28	492.63	18.73	7.37	443.5	0.03	-218	1.52	1.0L/min
1501	33	492.62	18.75	7.39	439.4	0.03	-220	1.40	
1520	38	492.61	18.69	7.38	444.2	0.02	-222	0.91	
Values Prior to Sampling									
1520	38	492.61	18.69	7.38	444.2	0.02	-222	0.91	1.0L/min

Field Alkalinity Result 198 mg/L as $CaCO_3$ Sample ID: GW0393
Bubbles None

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
Site / SWMU No.: 106
Weather: Sunny 50°s
Field Crew: NA, DM
Review Signature:

Well ID No.: KAFB-106015
Date: 2-13-12
Time: 1219
Crew Signature: [signature]
Date Review: [signature]

WELL OBSERVATIONS

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

Notes: VOCs Ø in BH

CALCULATIONS

(A) Depth to Well Bottom	515 ft
(B) Pre-Purge Depth to Water	486.57 ft
(C) Water Column Height (A-B)	28.43 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	18.48 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)	23.43 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.2

(J) Filter Pack Volume (H x I)	28.12 gal
(K) Min Purge Volume (E + J)	47 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	~~02818~~ R22831
Turbidity Meter: HACH 2100P	~~La Motte~~ 02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#9

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
2-23-12/1223	Ø	486.57	15.77	8.07	326.1	7.92	102	1.59	2.36 L/min
1249	16	486.59	18.81	7.82	326.0	8.33	87	2.51	
1315	32	486.58	18.86	7.81	326.5	9.06	86	1.68	
1334	37	486.61	18.30	7.80	326.0	7.84	94	1.53	1.0 L/min
1353	42	486.62	18.22	7.80	326.6	7.99	100	3.41	
1412	47	486.62	18.03	7.80	325.9	8.00	106	1.52	
Values Prior to Sampling									
1412	47	486.62	18.03	7.80	325.9	8.00	106	1.52	1.0 L/min

Field Alkalinity Result 128 mg/L as CaCO3 Sample ID: GW0394

Bubbles none present

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 Fuel Facility Spill

Project Name: KAFB-BFF
Site / SWMU No.: 106
Weather: Sunny 50's
Field Crew: DA
Review Signature:

Well No.: 106016
Date: 1-31-12
Time: 1310
Crew Signature:
Date Review: 8-1-12

WELL OBSERVATIONS

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

Notes: VOCs 2.1 in BH

CALCULATIONS

(A) Depth to Well Bottom	505 ft	(I) Filter Pack Volume (H x I)	19.47 gal	
(B) Pre-Purge Depth to Water	483.78 ft	(J) Min. Casing Volume (E + J)	34 gal	
(C) Water Column Height (A-B)	21.22 ft	EQUIPMENT / MODEL	ID NUMBER	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	Parameter Meter	In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	13.80 gal	Turbidity Meter	HACH 2100P	02818
(F) Depth to Top of Screen	475 ft	Pump	Dedicated bennett	on file
(G) Depth to Bottom of Screen	500 ft	Field Analyst	La Matte	3467#8
(H) Saturated Filter Pack Length (G –F, or B)	16.22 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/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-31-12 1338	0	483.78	17.32	7.65	314.2	7.72	98	0.53	1.8 L/min
1359	10	483.80	18.89	7.72	298.3	2.98	135	0.62	
1418	19	483.81	18.83	7.81	306.5	4.03	137	0.71	
1437	24	483.80	18.55	7.81	307.6	4.21	138	0.67	L/min
1456	29	483.79	18.48	7.86	309.2	4.76	138	0.59	
1515	34	483.79	18.49	7.88	309.4	5.02	139	0.61	

Values Prior to Sampling

1515	34	483.79	18.49	7.88	309.4	5.02	139	0.61	L/min

Field Alkalinity Result 114 mg/L as CaCO3 **Sample ID:** GW0395

Bubbles none present

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 50s
Field Crew: DA, DM
Review Signature: [illegible]

Well ID No.: 106017
Date: 1-23-17
Time: 1424
Crew Signature: [illegible]
Date Reviewed: 1-24-17

WELL OBSERVATIONS

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

Notes: VOCs 0.7 in BH & 0 in BZ

CALCULATIONS

(A) Depth to Well Bottom	512 ft	(J) Filter Pack Volume (H x I)	25.1 gal
(B) Pre-Purge Depth to Water	486.09 ft	(K) Min Purge Volume (E + J)	51 gal
(C) Water Column Height (A-B)	25.91 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	Parameter Meter	
(E) One Well Casing Volume (C x D):	16.85 gal	Orion Star A329	R22831
(F) Depth to Top of Screen	482 ft	Turbidity Meter	
(G) Depth to Bottom of Screen	507 ft	HACH 2100P	07818
(H) Saturated Filter Pack Length (G –F, or B)	20.91 ft	Pump	
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	dedicated	on file
		Field Alkalinity	
		La Motte	346778

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-23-17 1437	0	486.09	16.92	6.57	NA	3.34	115	10.5	1.89L/min
1517	20	486.11	18.79	7.79	NA	1.07	-94	0.80	
1549	36	486.13	18.79	7.81	NA	0.81	-91	0.54	
1607	41	486.12	18.31	7.81	NA	0.76	-79	0.36	1.0L/min
1626	46	486.10	18.32	7.82	NA	1.03	-75	0.34	
1645	51	486.10	18.23	7.40	NA	0.91	-79	0.33	
Values Prior to Sampling									
1645	51	486.10	18.23	7.80	NA	0.91	-79	0.33	1.0L/min

Field Alkalinity Result 132 mg/L as $CaCO_3$ **Sample ID:** GW0396

Bubbles - none present

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
Site / SWMU No.: 106
Weather: Sunny 50s
Field Crew: DA, DM
Review Signature: [signature]

Well ID No.: 106018
Date: 1-23-12
Time: 1140
Crew Signature: [signature]
Date Review: 1-24-12

WELL OBSERVATIONS

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

Notes: VOCs Ø in BH Ø in BZ

CALCULATIONS

(A) Depth to Well Bottom	506 ft
(B) Pre-Purge Depth to Water	479.78 ft
(C) Water Column Height (A-B)	26.22 ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65
(E) One Well Casing Volume (C x D):	17.043 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)	21.22 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2

(J) Filter Pack Volume (H x I)	25.47 gal
(K) Min Purge Volume (E + J)	43 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	B22831
Turbidity Meter: HACH 2100P	07818
Pump: dedicated	on file
Field Alkalinity: La Motte	3467-8

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	* Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-23-12 1152	Ø	479.78	15.98	7.92	NA	7.81	43	0.69	1.77 L/min
1224	15	479.81	18.86	7.80	NA	0.04	-149	0.56	
1252	28	479.83	18.91	7.82	NA	0.02	-159	0.39	
1310 ~~1300~~	33	479.81	18.70	7.81	NA	0.04	-158	0.46	1.0 L/min
1329 ~~1320~~	38	479.80	18.62	7.82	NA	0.03	-161	0.53	
1348 ~~1338~~	43	479.79	18.60	7.81	NA	0.02	-164	0.22	

Values Prior to Sampling

~~1348~~ 1348	43	479.79	18.60	7.81	NA	0.02	-164	0.22	L/min

Field Alkalinity Result 120 mg/L as $CaCO_3$ **Sample ID:** GW0397

Bubbles - none present

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

* Conductivity not functioning. Diane instructed us to continue

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 40s
Field Crew: DA, BVA
Review Signature: [signature]

Well ID No.: 106019
Date: 1-23-12
Time: 0813
Crew Signature: [signature]
Date Reviewed: 1-23-12

WELL OBSERVATIONS

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

Notes: VOCs ∅ in BH & ∅ in BZ

CALCULATIONS

(A) Depth to Well Bottom	523	ft
(B) Pre-Purge Depth to Water	498.23	ft
(C) Water Column Height (A-B)	24.77	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	16.11	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) 19.77 ~~16.11~~	19.77	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	23.73	gal
(K) Max Purge Volume (E + J)	40	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R27831	
Turbidity Meter: HACH 2100P	07818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	3467 #8	

PURGING INFORMATION

Description first water purged: Clear

pre calibrated

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-23-12 0850	∅	498.23	16.05	7.21	NA	7.86	186	5.78	NA L/min
0905	∅	498.23	15.26	7.57	NA	2.96	61	5.69	1.78 L/min
0936	15	498.26	17.25	7.31	NA	2.00	156	3.41	
0958	25	498.27	18.67	7.78	NA	1.17	-54	1.74	
1017	30	498.25	18.18	7.80	NA	1.45	-49	0.98	1.0 L/min
1036	35	498.24	18.15	7.80	NA	1.44	-54	0.34	
1055	40	498.24	18.37	7.81	NA	1.48	-57	0.57	
Values Prior to Sampling									
1055	40	498.24	18.37	7.81	NA	1.48	-57	0.57	1.0 L/min

Field Alkalinity Result 120 mg/L as $CaCO_3$ **Sample ID:** GW0398

Bubbles - None present

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

* Conductivity reading 1,831,000. Stop purge & recal. still not reading properly. Diane instruct to continue

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
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106020
Date: 2/22/12
Time: 1345
Crew Signature: [signature]
Date Review: 2/23/2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	572	ft
(B) Pre-Purge Depth to Water	483.56	ft
(C) Water Column Height (A-B)	28.44	ft
(D) Casing Factor (4"=0.65, 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	18.5	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)	23.44	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	28.12	gal
(K) Min Purge Volume (E + J)	47	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: IRSitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: CaMotte	3467 74	

PURGING INFORMATION

Description first water purged: Light Brown, 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
2/22/12 1334	Ø	483.56	17.46	6.76	412.4	4.81	20	235	1.64 L/m
1409	15	483.55	18.34	7.46	454.2	2.29	-17	85.5	
1444	30	483.55	18.37	7.74	478.9	2.45	-7	23.4	
1502	35	483.53	18.37	7.74	476.2	2.44	-7	9.68	1.00 L/min
1520	40	483.53	18.37	7.47	476.2	2.44	-7	8.69	
1547	47	483.52	18.37	7.47	476.2	2.44	-7	5.09	
Values Prior to Sampling									
1547	47	483.52	18.37	7.47	476.2	2.44	-7	5.09	1.0 L/m

Field Alkalinity Result 122 mg/L As CaCO3 Sample ID: GW0399

Bubbles ☐ YES ☒ NO

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.: 106021
Site / SWMU No.: 106
Date: 2/2/12
Weather: cloudy
Time: 0920
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2-2-12

WELL OBSERVATIONS

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

Notes: Voids Ø in WB, Set pump @ 470'

CALCULATIONS

(A) Depth to Well Bottom	488	ft
(B) Pre-Purge Depth to Water	458.20	ft
(C) Water Column Height (A-B)	29.8	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	19.37	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)	24.8	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	29.76	gal
(K) Min Purge Volume (E + J)	49	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: La Motte	3467 #7	

PURGING INFORMATION

Description first water purged: ~~light Brown~~ AT light Grey, Slight 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
2/2/12 1013	Ø	458.20	13.37	6.50	640.8	7.67	223	32.9	1.60 L/m
1100	20	458.15	18.15	7.63	653.9	3.15	-105	20.4	
1124	30	458.14	18.16	7.65	646.9	3.19	-123	19.4	
1136	35	458.12	18.21	7.67	645.9	3.26	-138	7.62	
1154	40	458.10	18.18	7.69	648.5	3.67	-104	8.12	1.0 L/m
1212	45	458.08	17.91	7.69	642.3	3.50	-110	8.97	
1227	49	458.08	18.01	7.69	654.6	3.46	-121	7.03	
Values Prior to Sampling									
1227	49	458.08	18.01	7.69	654.6	3.46	-121	7.03	1.0 L/m

Field Alkalinity Result 120 mg/L as $CaCO_3$ Sample ID: GW0400
light Bubbles GW0401

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.: 106022
Site / SWMU No.: 106
Date: 2/2/12
Weather: cloudy
Time: 1315
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2-3-12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB, set pump @ 474'

CALCULATIONS

(A) Depth to Well Bottom	492	ft	(J) Filter Pack Volume (H x I)	29.5	gal
(B) Pre-Purge Depth to Water	462.41	ft	(K) Min Purge Volume (E + J)	49	gal
(C) Water Column Height (A-B)	29.59	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	0.65		Parameter Meter: Insitu 9500	R22214	
(E) One Well Casing Volume (C x D):	19.2	gal	Turbidity Meter: HACH	2821	
(F) Depth to Top of Screen	462	ft	Pump: Portable Bennet	on file	
(G) Depth to Bottom of Screen	487	ft	Field Alkalinity: La Motte	3467 #7	
(H) Saturated Filter Pack Length (G –F, or B)	24.59	ft			
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2				

PURGING INFORMATION

Description first water purged: light grey, slight 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
2/2/12 1408	Ø	462.41	18.18	7.65	367.3	3.21	73	4.51	1.00 L/m
1455	20	462.37	18.41	7.76	369.7	2.42	13	7.38	
1519 ~~1419~~ AT	30	462.37	18.46	7.76	369.8	1.92	0	1.83	
1531 ~~1431~~ AT	35	462.37	18.44	7.78	370.0	2.53	4	1.45	
1549 ~~1449~~ AT	40	462.38	18.10	7.79	370.0	2.41	8	3.52	1.02 L/m
1607 ~~1407~~ AT	45	462.39	18.12	7.78	369.9	2.28	19	1.08	
1622 ~~1422~~ AT	49	462.39	18.05	7.79	369.8	2.35	26	0.97	
Values Prior to Sampling									
1622	49	462.39	18.05	7.79	369.8	2.35	26	0.97	1.02 L/m

Field Alkalinity Result 122 mg/L as $CaCO_3$ Sample ID: GW0402

Bubbles none

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.: 106024
Site / SWMU No.: 106
Date: 3-21-12
Weather: Sunny 60s
Time: 1214
Field Crew: DA, DM
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 3/22/2012

WELL OBSERVATIONS

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

Notes: VOCs 0.6 in BH + 0 in BZ

CALCULATIONS

(A) Depth to Well Bottom	511	ft
(B) Pre-Purge Depth to Water	484.72	ft
(C) Water Column Height (A-B)	26.28	ft
(D) Casing Factor: 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	17.082	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)	21.28	ft
(I) Casing/Borehole Factor 4/10 = 1.2 5/10 = 1.07, ____	1.2	

(J) Filter Pack Volume (H x I)	25.536	gal
(K) Min Purge Volume (E + J)	42.618 (43)	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	~~R22831~~ R22214	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	346749	

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
3-21-12 ~~1245~~ 1254	0	484.72	19.13	6.88	583.4	3.50	221	1.27	1.6L/min
1336	18	484.74	19.41	7.04	886.8	0.25	-12	0.93	
1400	28	484.76	19.39	7.08	859.5	0.33	-120	0.38	
1419	33	484.75	19.35	7.09	853.6	0.35	-124	0.26	1.0L/min
1438	38	484.74	19.31	7.10	843.7	0.39	-119	0.41	
1457	43	484.73	19.33	7.11	838.4	0.42	-114	0.42	
Values Prior to Sampling									
1457	43	484.73	19.33	7.11	838.4	0.42	-114	0.42	1.0L/min

Field Alkalinity Result 216 mg/L as CaCO3 Sample ID: GW0403

Bubbles None

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

1408 Called In-Situ. Short handed for Tech support. Left Call back info

@ 1336 Technical issues w/ In Situ Readings not updating between 60 sec. intervals. Manually inducing readings @ ~~sa~~ appropriate times.

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: KAFB-106025
Site / SWMU No.: 106
Date: 1-25-12
Weather: Sunny 50°s
Time: 1155
Field Crew: DM, DA
Crew Signature: Daniel Medina
Review Signature: [illegible]
Date Review: 1-25-12

WELL OBSERVATIONS

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

Notes: VOC's 0.0 in BH. BZ 0

CALCULATIONS

(A) Depth to Well Bottom	495	ft
(B) Pre-Purge Depth to Water	462.68	ft
(C) Water Column Height (A-B)	32.32	ft
(D) Casing Factor 4"=0.65 8"=1.02	0.65	
(E) One Well Casing Volume (C x D):	21.0	gal
(F) Depth to Top of Screen	465	ft
(G) Depth to Bottom of Screen	490	ft
(H) Saturated Filter Pack Length (G –F, or B)	25	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.2	

(J) Filter Pack Volume (H x I)	30	gal
(K) Min Purge Volume (E + J)	51	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#8	

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
1-25-12/1206	0	462.68	17.72	6.74	408.5	7.36	180	0.78	1.58 L/min
1300	18	462.67	18.60	7.80	250.0	9.31	128	0.90	
1344	36	462.67	18.57	7.82	327.7	8.82	135	0.72	
1403	41	462.71	18.43	7.82	310.5	8.84	140	0.55	1.0 L/min
1422	46	462.71	18.43	7.83	309.0	9.07	145	0.60	
1441	51	462.71	18.43	7.82	297.7	8.96	148	0.37	

Values Prior to Sampling

1441	51	462.71	18.43	7.82	297.7	8.96	148	0.37	1.0 L/min

Field Alkalinity Result 118 Mg/L as CaCO3 Sample ID: GW0404

No Bubbles present

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.: 106026
Site / SWMU No.: 106
Date: 3/26/12
Weather: Sunny
Time: 08:15
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 3-26-12

WELL OBSERVATIONS

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

Notes: BH VOC's Ø ea, Set pump @ 476'

CALCULATIONS

(A) Depth to Well Bottom	491	ft
(B) Pre-Purge Depth to Water	466.36	ft
(C) Water Column Height (A-B)	24.64	ft
(D) Casing Factor 4"=0.65 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	16.01	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)	19.64	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	23.6	gal
(K) Min Purge Volume (E + J)	40	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R 22831	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: Ca 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
3/26/12 0946	Ø	466.36	19.07	7.82	649.6	8.38	-20	11.4	1.06 L/m
1115 ~~1146~~ AT	25	466.42	18.23	7.50	572.6	8.66	0.13	5.16	
1133	30	466.43	19.02	7.50	572.1	8.64	0.13	ER 1.48	
1151	35	466.41	19.03	7.51	579.7	8.73	0.13	1.89	
1209	40	466.41	19.04	7.51	572.3	8.73	0.13	1.12	

Values Prior to Sampling

1209	40	466.41	19.04	7.51	572.3	8.73	0.13	1.12	1.06 L/m

Field Alkalinity Result 84 mg/L as $CaCO_3$ Sample ID: GW0405

Bubbles ~~Yes~~ ~~No~~ None

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
Site / SWMU No.: 106
Weather: cloudy
Field Crew: AT, TN
Review Signature:

Well ID No.: 106029
Date: 2/9/12
Time: 0820
Crew Signature: Antonio Jolle
Date Review: D. Eldred 2-9-2012

WELL OBSERVATIONS

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

Notes: Vents ø leaks, set pump @ 460'

CALCULATIONS

(A) Depth to Well Bottom	475.77 ft	(J) Filter Pack Volume (H x I)	16.02 gal
(B) Pre-Purge Depth to Water	455.35 ft	(K) Min Purge Volume (E + J)	37 gal
(C) Water Column Height (A-B)	20.42 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	Parameter Meter: Insitu 9500	R22214
(E) One Well Casing Volume (C x D):	20.8 gal	Turbidity Meter: Hach	2821
(F) Depth to Top of Screen	450.77 ft	Pump: Portable Bennett	on file
(G) Depth to Bottom of Screen	470.33 ft	Field Alkalinity: La Motte	346777
(H) Saturated Filter Pack Length (G –F, or B)	14.98 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
2/9/12 0951	ø	455.35	16.32	6.89	689.2	8.75	204	1.52	1.60 L/m
1038	20	455.39	18.26	7.72	688.0	8.83	160	1.26	TN
1056	25	455.32	18.16	7.75	689.5	8.91	157	0.97	1.0 L/m
1114	30	455.31	18.18	7.76	691.9	8.79	156	0.53	
1122	37	455.30	18.26	7.76	678.9	9.23	156	0.82	
Values Prior to Sampling									
1122	37	455.30	18.26	7.76	678.9	9.23	156	0.82	1.0 L/m

Field Alkalinity Result 86 mg/L as $CaCO_3$ Sample ID: GW0406

no Bubbles

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.: 106030
Site / SWMU No.: 106
Date: 2/9/12
Weather: Sunny
Time: 12:45
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/10/12

WELL OBSERVATIONS

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

Notes: VOCs ○ in WB, set pump @ 476'

CALCULATIONS

(A) Depth to Well Bottom	489.9	ft
(B) Pre-Purge Depth to Water	455.36	ft
(C) Water Column Height (A-B)	34.64	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	35.3	gal
(F) Depth to Top of Screen	469.5 ~~484.5~~ AT	ft
(G) Depth to Bottom of Screen	484.5 ~~469.5~~ AT	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	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: LaMotte	3467 ~~444~~	

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
1235	Ø	455.36	17.37	7.58	539.9	10.17	210	0.97	1.6 L/min
1322	20	455.33	18.25	7.82	551.0	12.12	179	1.03	
1346	30	455.32	18.26	7.83	542.4	11.99	175	0.93	
1358	35	455.32	18.23	7.83	542.4	11.99	175	0.89	
1416	40	455.31	18.23	7.83	542.4	11.99	175	1.20	1.0 L/m
1434	45	455.29	18.12	7.83	551.1	10.77	171	0.87	
1457	51	455.30	18.14	7.83	559.6	10.64	170	0.77	

Values Prior to Sampling

1457	51	455.30	18.14	7.83	559.6	10.64	170	0.77	1.0 L/m

Field Alkalinity Result ~~86~~ TN 80 mg/L as $CaCO_3$
Sample ID: BW 0407
No Bubbles

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TN
Review Signature:

Well ID No.: 106031
Date: 2/8/12
Time: 0830
Crew Signature: Antonio Trujillo
Date Review: 2-9-2012

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOCs @ in WB Set pump @ 502'

CALCULATIONS

(A) Depth to Well Bottom	514.94	ft
(B) Pre-Purge Depth to Water	455.73	ft
(C) Water Column Height (A-B)	59.21	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	60.39	gal
(F) Depth to Top of Screen	495.47	ft
(G) Depth to Bottom of Screen	509.54	ft
(H) Saturated Filter Pack Length (G -F, or B)	14.07	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	15.05	gal
(K) Min Purge Volume (E + J)	75	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: LaMotte	3467 #7	

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
2/8/12 1020	0	455.73	12.36	6.99	477.9	9.63	176	2.60	1.60 L/m
1131	30	455.73	12.36	6.99	477.9	9.63	179	1.55	
1218	50	455.66	18.34	7.70	467.7	16.65	151	2.09	
1248	60	455.64	18.30	7.69	466.4	16.57	153	1.21	
1300	65	455.58	18.09	7.73	463.8	13.02	151	1.31	1.0 L/m
1318	70	455.56	18.06	7.71	463.3	14.98	153	1.11	
1336	75	455.56	18.12	7.22	465.3	14.20	154	1.17	

Values Prior to Sampling

1336	75	455.56	18.12	7.22	465.3	14.20	154	1.17	1.0 L/m

Field Alkalinity Result 102 Mg/L as CaCO3 Sample ID: GW0408

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.: 106032
Site / SWMU No.: 106
Date: 1/30/12
Weather: Sunny
Time: 1400
Field Crew: AT, TN.
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 1-31-12

WELL OBSERVATIONS

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

Notes: VOC's Ø in WB, Set pump @ 463'

CALCULATIONS

(A) Depth to Well Bottom	480.5 ft
(B) Pre-Purge Depth to Water	460.96 ft
(C) Water Column Height (A-B)	19.54 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	19.93 gal
(F) Depth to Top of Screen	456 ft
(G) Depth to Bottom of Screen	475.75 ft
(H) Saturated Filter Pack Length (G –F, or B)	14.79 ft
(I) Casing/~~Borehole~~ Factor 4/10 = 1.2, 5/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	15.83 gal
(K) Min Purge Volume (E + J)	35.75 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: 9500 Insitu	R222[illegible]
Turbidity Meter: HAch	2821
Pump: Grundfos Bennett	on file
Field Alkalinity: La Motte	3467 #7

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
1/30/12 1453	0	460.96	18.84	7.63	370.7	8.43	204	0.82	1.70 L/m
1538	20	460.96	18.80	7.84	373.0	8.36	194	2.56	0.96 L/m
1556	25	460.95	18.86	7.87	376.0	8.22	193	2.66	
1614	30	460.95	18.80	7.87	377.7	8.29	192	1.87	
1636	36	460.95	18.84	7.88	378.3	8.32	191	1.58	

Values Prior to Sampling

1636	36	460.95	18.84	7.88	378.3	8.32	191	1.58	0.96 L/m

Field Alkalinity Result 92 Mg/L as CaCO3 **Sample ID:** GW0409

light Bubbles GW0409 MS, GW0409 MSD

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: LAFB - BFF
Well ID No.: 106033
Site / SWMU No.: 106
Date: 1/24/12
Weather: Cloudy
Time: 11:00
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 1-29-12

WELL OBSERVATIONS

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

Notes: VOCs @ in WB, set pump @ 485'

CALCULATIONS

(A) Depth to Well Bottom	496.6	ft
(B) Pre-Purge Depth to Water	461.31	ft
(C) Water Column Height (A-B)	35.29	ft
(D) Casing Factor: 4"=0.65 5"=1.02		
(E) One Well Casing Volume (C x D):	36	gal
(F) Depth to Top of Screen	477	ft
(G) Depth to Bottom of Screen	492	ft
(H) Saturated Filter Pack Length (G –F, or B)	15	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,		

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	52	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: 9500 Insitu	R22214R	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: Lamotte	3467 #7	

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
1/24/12 1143	~~0 20 AT~~	461.31	17.30	6.88	701.5	9.16	179	8.63	1.08 L/m
1304	~~20 30 AT~~	461.28	18.24	7.62	708.8	9.99	162	5.35	
1339	~~30 AT 35 40~~	461.25	18.41	7.65	713.6	9.85	153	4.29	
1414	~~40 AT 40 40~~	461.23	18.07	7.64	706.2	10.02	155	1.49	
1434	~~45 AT 45 50~~	461.23	18.10	7.65	706.9	9.87	160	1.42	
1452	50 82	461.25	18.13	7.64	714.2	9.86	159	0.89	
1459	52	461.25	18.56	7.65	714.8	9.72	158	0.65	
Values Prior to Sampling									
1459	52	461.25	18.56	7.65	714.8	9.72	158	0.65	1.08 L/m

Field Alkalinity Result 116 Mg/L as CaCO3 Sample ID: GW0410

Bubbles none present

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.: 106034
Site / SWMU No.: 106
Date: 1/27/12
Weather: Sunny
Time: 0815
Field Crew: AT, TN
Crew Signature: Antonio Tafoya
Review Signature: [illegible]
Date Review: 1-27-12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	522	ft	(J) Filter Pack Volume (H x I)	16.05	gal
(B) Pre-Purge Depth to Water	462.15	ft	(K) Min Purge Volume (E + J)	77	gal
(C) Water Column Height (A-B)	59.85	ft	EQUIPMENT / MODEL	ID NUMBER	
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Parameter Meter: Insitu 9500	R22214	
(E) One Well Casing Volume (C x D):	61.04	gal	Turbidity Meter: Hach	2821	
(F) Depth to Top of Screen	502	ft	Pump: Portable Bennett	on file	
(G) Depth to Bottom of Screen	517	ft	Field Alkalinity: La Motte	3467-H7	
(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
1/27/12 0928	Ø	462.15	17.86	7.40	726.5	13.90	217	1.60	1.52 L/m
1018	20	462.13	18.24	7.59	693.6	14.42	183	1.66	
1108	40	462.14	18.25	7.61	693.7	15.37	177	1.68	
1208	60	462.14	18.42	7.65	681.1	14.83	177	1.35	
1216	65	462.15	18.38	7.67	679.8	11.88	177	1.30	1.0 L/m
1234	70	462.15	18.26	7.67	682.7	11.74	179	.99	
1301	77	462.15	18.49	7.66	691.3	11.77	179	1.24	
Values Prior to Sampling									
1301	77	462.15	18.49	7.66	691.3	11.77	179	1.24	1.02 L/m

Field Alkalinity Result AT ~~120~~ 112 Mg/L as CaCO3 Light Bubbles
Sample ID: GW0411

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.: 106035
Site / SWMU No.: 106
Date: 2/13/12
Weather: Cloudy
Time: 0800
Field Crew: AT, TN
Crew Signature: Antonio Jill
Review Signature:
Date Review: [signature] 2-13-12

WELL OBSERVATIONS

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

Notes: VOCs Ø unuB

CALCULATIONS

(A) Depth to Well Bottom	487	ft
(B) Pre-Purge Depth to Water	465.92	ft
(C) Water Column Height (A-B)	21.08	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	21.5	gal
(F) Depth to Top of Screen	452	ft
(G) Depth to Bottom of Screen	482	ft
(H) Saturated Filter Pack Length (G –F, or B)	16.08	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)	39	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: LaMotte	3467#7	

PURGING INFORMATION

Description first water purged: light Brown, 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
2/13/12 0845	Ø	465.92	17.27	7.57	421.0	8.28	183	0.92	2.76 L/m
0919	25	466.04	18.37	7.69	469.0	9.06	95	0.66	1.0 L/m
0937	30	465.95	18.37	7.69	465.4	9.00	96	0.44	
0955	35	465.95	18.37	7.69	465.4	9.00	96	0.35	
1010	39	465.95	18.37	7.69	465.4	9.00	96	0.34	
Values Prior to Sampling									
1010	39	465.95	18.37	7.69	465.4	9.00	96	0.34	1.0 L/m

Field Alkalinity Result 142 mg/L as CaCO3 Sample ID: GW0412
NO Bubbles

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
Site / SWMU No.: 106
Weather: Cloudy
Field Crew: AT, JN
Review Signature:

Well ID No.: 106036
Date: 2/13/12
Time: 1400
Crew Signature: [signature]
Date Review: [signature] 2-14-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	501.8	ft
(B) Pre-Purge Depth to Water	465.62	ft
(C) Water Column Height (A-B)	36.18	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	37	gal
(F) Depth to Top of Screen	481.8	ft
(G) Depth to Bottom of Screen	496.8	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: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennet	on file	
Field Alkalinity: La Motte	3467 #7	

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
2/13/12 1404	Ø	465.62	16.52	7.84	510.6	9.41	129	0.71	3.66 L/m
1425	20	465.84	18.64	7.69	557.0	9.94	46	6.82	
1446	40	465.84	18.56	7.70	509.5	10.23	70	2.82	
1504	45	465.62	17.28	7.74	500.6	8.05	86	2.61	1.00 L/min
1522	50	465.60	15.97	7.76	498.3	8.22	98	2.33	
1533	53	465.62	15.92	7.76	499.8	8.20	101	2.28	
Values Prior to Sampling									
1533	53	465.62	15.92	7.76	499.8	8.20	101	2.28	1.0 L/m

Field Alkalinity Result 140 mg/L as CaCO3 light Bubbles Sample ID: GW0413

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.: 106037
Site / SWMU No.: 106
Date: 2/13/12
Weather: Cloudy
Time: 1100
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature:
Date Review: [illegible] 12-14-2012

WELL OBSERVATIONS

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

Notes: VOC'S Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	527	ft
(B) Pre-Purge Depth to Water	465.92	ft
(C) Water Column Height (A-B)	61.08	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	62.3	gal
(F) Depth to Top of Screen	509	ft
(G) Depth to Bottom of Screen	522	ft
(H) Saturated Filter Pack Length (G-F or B)	13	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	13.91	gal
(K) Min Purge Volume (E + J)	76	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennet	on file	
Field Alkalinity: La Motte	3467 #7	

PURGING INFORMATION

Description first water purged: Light Brown

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
2/13/12 1111	Ø	465.92	9.25	8.11	311.2	8.01	142	9.99	3.64 L/m
1132	20	NM	18.69	7.73	343.1	15.30	103	3.08	
1153	40	465.98	18.69	7.73	343.1	15.30	108	1.46	
1214	60	465.92	18.81	7.76	342.6	15.67	134	0.94	
1232	65	465.87	18.81	7.76	340.7	15.28	133	0.77	1.0 L/m
1250	70	465.86	18.81	7.76	340.7	15.28	133	0.56	
1313	76	465.85	17.53	7.83	338.1	10.55	137	0.45	
Values Prior to Sampling									
1313	76	465.85	17.53	7.83	338.1	10.55	137	0.45	1.0 L/m

Field Alkalinity Result 132 mg/L as $CaCO_3$ Sample ID: GW 0414

No Bubbles

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.: 106038
Site / SWMU No.: 106
Date: 2-9-12
Weather: Sunny windy 40's
Time: ~~0823~~ ~~1327~~ ~~86~~ 1326
Field Crew: DA DM
Crew Signature: DMA
Review Signature: [signature]
Date Review: 2/10/12

WELL OBSERVATIONS

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

Notes: VOCs 0.4 in BH

CALCULATIONS

(A) Depth to Well Bottom	513	ft
(B) Pre-Purge Depth to Water	494.82 ~~493.64~~	ft
(C) Water Column Height (A-B)	18.18	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	18.55	gal
(F) Depth to Top of Screen	478	ft
(G) Depth to Bottom of Screen	508	ft
(H) Saturated Filter Pack Length (G –F, or B)	13.18	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	14.11	gal
(K) Min Purge Volume (E + J)	33	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Ion Site 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	3467#8	

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
2-9-12 1332	0	494.82	14.69	7.96	319.2	8.60	148	0.81	2.2 L/min
1350	10	494.83	18.38	7.79	341.1	9.39	80	1.95	
1404	18	494.85	18.38	7.79	338.1	9.40	92	0.97	
1423	23	494.83	17.80	7.79	338.2	9.21	104	0.82	1.0 L/min
1442	28	494.83	17.75	7.80	338.3	9.20	114	0.54	
1501	33	494.83	17.80	7.80	338.0	9.24	119	0.63	
Values Prior to Sampling									
1501	33	494.83	17.80	7.80	338.0	9.24	119	0.63	1.0 L/min

Field Alkalinity Result 128 mg/Las CaCO3 Sample ID: GW0415

Bubbles None

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.: 106039
Site / SWMU No.: 106
Date: 2-9-12
Weather: Sunny 40's
Time: 1110
Field Crew: DA/DM
Crew Signature: [signature]
Review Signature:
Date Review: [signature] 2-9-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in BH

CALCULATIONS

(A) Depth to Well Bottom	528.25 ft
(B) Pre-Purge Depth to Water	494.36 ft
(C) Water Column Height (A-B)	33.89 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	34.57 gal
(F) Depth to Top of Screen	508.25 ft
(G) Depth to Bottom of Screen	523.25 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: Un Site 9500	R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#8

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
2-9-12 1117	Ø	494.36	15.17	7.99	305.5	8.43	165	0.63	2.64L/min
1150	20	494.38	18.63	7.73	305.5	ER	149	2.68	
1209	36	494.39	17.87	7.73	304.8	8.34	151	2.39	
1228	41	494.38	17.82	7.74	306.7	8.46	153	1.26	1.0L/min
1247	46	494.37	17.91	7.74	307.4	8.51	154	1.14	
1306	51	494.36	17.88	7.75	305.0	8.51	156	0.20	
Values Prior to Sampling									
1306	51	494.36	17.88	7.75	305.0	8.51	156	0.20	1.0L/min

Field Alkalinity Result 108mg/Las Ca.Co3 Sample ID: GW0416

Bubbles few small bubbles

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.: 106040
Site / SWMU No.: 106
Date: 2-9-12
Weather: Partly Cloudy 40's
Time: 0823
Field Crew: DA, DM
Crew Signature: [signature]
Review Signature:
Date Review: [signature] 2-9-2012

WELL OBSERVATIONS

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

Notes: VOCs 0.6 in BH

CALCULATIONS

(A) Depth to Well Bottom	550.55 ft
(B) Pre-Purge Depth to Water	493.64 ft
(C) Water Column Height (A-B)	56.91 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	58.10 gal
(F) Depth to Top of Screen	530.55 ft
(G) Depth to Bottom of Screen	545.55 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)	75 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#8

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
2-9-12 0838	Ø	493.64	15.96	7.60	302.1	8.03	203	0.43	3.16 L/min ~~1.58~~ L/min
0914	30	493.64	18.81	7.73	302.7	15.41	189	0.93	
0950	60	493.66	18.79	7.74	304.7	14.91	179	0.85	
1009	65	493.66	17.95	7.73	304.3	10.65	178	1.59	1.0 L/min
1028	70	493.65	17.85	7.74	305.4	ER 10.56	176	0.79	
1047	75	493.65	17.87	7.76	304.7	ER 10.70	175	0.59	
Values Prior to Sampling									
1047	75	493.65	17.87	7.76	304.7	ER 10.70	175	0.59	1.0 L/min

Field Alkalinity Result 124 mg/L as $CaCO_3$ Sample ID: GW0417

Bubbles lots of tiny bubbles

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, Pulk ... Facility Spill

Project Name: KAFB-BFF
Site / SWMU No.: 106
Weather: ~~Sunny~~ Cloudy 40's
Field Crew: DA
Review Signature: [signature]

W... No.: 106042
Date: 2-2-12
Time: 1301
Crew Signature: [signature]
Date Reviewed: 2/3/12

WELL OBSERVATIONS

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

Notes: VOCs 2.1 in BH

CALCULATIONS

(A) Depth to Well Bottom	488.53 ft	... Volume (H x I)	15.55 gal
(B) Pre-Purge Depth to Water	468.84 ft	... Volume (E + J)	36 gal
(C) Water Column Height (A-B)	19.69 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65, 5"=1.02	1.02	Parameter Meter: In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	20.1 gal	Pump Meter: HACH 2100P	02818
(F) Depth to Top of Screen	469 ft	Pump: bennett dedicated	on file
(G) Depth to Bottom of Screen	483.53 ft	Field Facility: La Motte	3467#8
(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		

PURGING INFORMATION

Description first water purged:

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Conc (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
2-2-12 1322	0	468.84	18.40	7.47	526.5	7.79	214	1.12	3.2 L/min
1335	11	468.86	18.64	7.51	477.8	7.42	14	0.98	
1347	21	468.88	18.56	7.51	478.1	7.91	33	0.81	
1406	26	468.87	18.37	7.52	490.0	7.66	54	0.72	1.0 L/min
1425	31	468.86	18.36	7.52	487.1	7.38	69	0.69	
1444	36	468.85	18.28	7.52	486.1	7.30	74	0.65	
Values Prior to Sampling									
1444	36	468.85	18.28	7.52	486.1	7.30	74	0.65	1.0 L/min

Field Alkalinity Result 124 mg/L as $CaCO_3$ **Sample ID:** GW0419

Bubbles None

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 Fuel Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106043
Site / SWMU No.: 106
Date: 2-2-12
Weather: Sunny 40s
Time: 0816
Field Crew: DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2-2-12

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No
Notes: VOCs 04 in BH

CALCULATIONS

(A) Depth to Well Bottom	562.53 ft	(J) Filter Pack Volume (H x I)	15.55	gal
(B) Pre-Purge Depth to Water	469.18 ft	(K) Min Purge Volume (E + J)	111	gal
(C) Water Column Height (A-B)	93.35 ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65, 5"=1.02	1.02	Parameter Meter: In Situ 9500	R72831	
(E) One Well Casing Volume (C x D):	95.22 gal	Turbidity Meter: HACH 2100P	02818	
(F) Depth to Top of Screen	543 ft	Pump: Dedicated bennett	on file	
(G) Depth to Bottom of Screen	557.53 ft	Field Alkalinity: La Motte	346448	
(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			

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
2-2-12 0858	0	469.18	16.92	7.73	341.0	8.07	211	0.54	3.0 L/min
0948	40	469.21	18.84	9.67	372.0	ER	137	0.61	
1033	76	469.22	18.86	7.70	366.7	ER	132	0.63	
1058	96	469.23	18.91	7.69	369.5	ER	132	0.65	
1117	101	469.21	18.42	7.70	370.7	9.38	136	0.51	1.0 L/min
1136	106	469.20	18.44	7.71	366.5	9.37	140	0.54	
1155	111	469.20	18.40	7.72	371.2	9.35	143	0.42	
		~~469.00~~							~~2.0 L/min~~
Values Prior to Sampling									
1155	111	469.20	18.40	7.72	371.2	9.35	143	0.42	1.0 L/min

Field Alkalinity Result 112 mg/L as CaCO3 **Sample ID:** GW0420-0421

Bubbles lots of fine heading bubbles

Note: For calculations, additional casing factors (D) and casing/borehole factor (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 Fuel Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106027
Site / SWMU No.: 106
Date: 1-31-12
Weather: Sunny 50°s
Time: 1049
Field Crew: DA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 1-31-12

WELL OBSERVATION

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

Notes: VOCs 3.7 in BH

CALCULATIONS

(A) Depth to Well Bottom	506.0 ft	(J) Filter Pack Volume (H x I)	13.78 gal
(B) Pre-Purge Depth to Water	489.52 ft	(K) Min Purge Volume (E + J)	25 gal
(C) Water Column Height (A-B)	16.48 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor 4"=0.65 5"=1.02	0.65	Parameter Meter In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	10.72 gal	Turbidity Meter HACH 2100P	02818
(F) Depth to Top of Screen	481.0 ft	Pump dedicated bennett	on file
(G) Depth to Bottom of Screen	501.0 ft	Field Alkalinity La Motte	3467#8
(H) Saturated Filter Pack Length (G –F, or B)	11.48 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
1-31-12 1104	Ø	489.52	17.74	7.49	331.1	6.43	1.0	18.0	1.6 L/min
1128	10	489.54	18.83	7.75	323.2	6.64	75	0.57	
1147	15	489.53	18.63	7.73	325.5	6.57	94	0.86	1.0 L/min
1206	20	489.52	18.72	7.76	321.1	6.48	105	0.71	
1225	25	489.52	18.78	7.75	322.7	6.47	113	0.64	
Values Prior to Sampling									
1225	25	489.52	18.78	7.75	322.7	6.47	113	0.64	L/min

Field Alkalinity Result 124 mg / Lar CaCO3 Sample ID: GW0422

Bubbles none present

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 Fuel Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106044
Site / SWMU No.: 106
Date: 1-31-12
Weather: Sunny 40s 50s
Time: 0817
Field Crew: OA
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2-1-12

WELL OBSERVATIONS

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

Notes: VOCs 57.0 in BH, Ø in BZ

CALCULATIONS

(A) Depth to Well Bottom	519.23 ft	(J) Filter Pack Volume (H x I)	16.05 gal	
(B) Pre-Purge Depth to Water	489.57 ft	(K) Min. Purge Volume (E + J)	47 gal	
(C) Water Column Height (A-B)	29.66 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):	30.26 gal	YSI Sondes 9500	R77631	
(F) Depth to Top of Screen	504.23 ft	Turbidity Meter		
(G) Depth to Bottom of Screen	519.23 ft	HACH 2100P	07818	
(H) Saturated Filter Pack Length (G –F, or B)	15 ft	Pump		
(I) Casing/Borehole Factor 4/10 = 1.2, (6/10 = 1.07), _____	1.07	dedicated bennett	on file	
		Field Assembly		
		La Motte	346778	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-31-12 0846	Ø	489.57	13.99	7.03	286.6	7.98	187	0.44	2.9 L/min
0917	20	489.59	18.78	7.74	283.5	8.35	48	0.68	
0928	32	489.60	18.80	7.75	278.0	8.74	70	0.51	
0947	37	489.59	18.20	7.75	289.0	7.25	98	0.49	1.0 L/min
1006	47	489.58	18.07	7.75	291.6	7.15	110	0.44	
1025	47	489.58	18.07	7.74	282.9	7.08	119	0.85	

Values Prior to Sampling

1025	47	489.58	18.07	7.74	282.9	7.08	119	0.85	L/min

Field Alkalinity Result 116 mg/L as CaCO3 **Sample ID:** GW0473

Bubbles No bubbles

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
Site / SWMU No.: 106
Weather: Sunny 40s + 50s
Field Crew: DA
Review Signature: [illegible]

Well ID No.: 106045
Date: 1-30-12
Time: 0849
Crew Signature: [illegible]
Date Review: 1-30-12

WELL OBSERVATIONS

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

Notes: VOCs ∅ in BH

CALCULATIONS

(A) Depth to Well Bottom	548	ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	489.40	ft	(K) Min Purge Volume (E + J)	76 gal
(C) Water Column Height (A-B)	58.6	ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Parameter Meter: In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	59.78	gal	Turbidity Meter: HACH 2100P	02818
(F) Depth to Top of Screen	528.3	ft	Pump: dedicated bennett	on file
(G) Depth to Bottom of Screen	543.3	ft	Field Alkalinity: La Motte	3467#8
(H) Saturated Filter Pack Length (G –F, or B)	15	ft		
(I) Casing/Borehole Factor 4/10 = 1.2, (6/10 = 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
1-30-12 0917	0	489.40	14.13	7.32	288.7	8.68	200	0.74	3.4L/min
0951	30	489.43	19.08	7.79	283.0	4.79	150	0.56	
1013	50	489.45	19.12	7.79	281.6	4.99	139	0.49	
1025	61	489.46	19.10	7.81	281.3	5.31	135	0.51	
1044	66	489.44	18.58	7.79	279.9	3.69	138	0.81	1.0L/min
1103	71	489.43	18.62	7.80	283.9	3.95	140	0.67	
1122	76	489.41	18.61	7.81	292.7	3.81	141	0.59	
Values Prior to Sampling									
1122	76	489.41	18.61	7.81	292.7	3.81	141	0.59	1.0L/min

Field Alkalinity Result 116 mg/L as CaCO3 Sample ID: GW0424

Bubbles ~~none present~~ DA

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*

~~observed~~ 140705

No bubbles DA

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 50°s
Field Crew: DM, DA
Review Signature:

Well ID No.: KAFB-106046
Date: 2-8-12
Time: 1328
Crew Signature: Daniel Medina
Date Review: 2-9-2012

WELL OBSERVATIONS

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

Notes: VOC's Ø ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	515	ft
(B) Pre-Purge Depth to Water	495.02	ft
(C) Water Column Height (A-B)	19.98	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	20.38	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)	14.98	ft
(I) Casing/Borehole Factor 4/10 = 1.2, (5/10 = 1.07)		

(J) Filter Pack Volume (H x I)	16.03	gal
(K) Min Purge Volume (E + J)	37	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#8	

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
2-8-12/1340	0	495.02	17.05	7.64	425.3	7.36	56	1.65	2.4 L/min
1358	11	495.02	18.98	7.77	332.5	8.03	72	1.40	
1416	22	495.04	19.05	7.80	333.5	7.90	83	1.32	
1435	27	495.03	18.72	7.76	335.8	7.56	91	1.11	1.0 L/min
1454	32	495.03	18.86	7.76	339.0	7.51	95	1.20	
1513	37	495.02	18.85	7.75	341.5	7.49	100	1.18	

Values Prior to Sampling

1513	37	495.02	18.85	7.75	341.5	7.49	100	1.18	1.0 L/min

Field Alkalinity Result 128 Mg/L as $CaCO_3$ Sample ID: GW0425

Bubbles None

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
Site / SWMU No.: 106
Weather: Sunny 50's
Field Crew: DM, DA
Review Signature:

Well ID No.: KAFB-106047
Date: 2-8-12
Time: 1102
Crew Signature: Daniel Medina
Date Review: 2-9-2012

WELL OBSERVATIONS

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

Notes: VOC's 0.5 ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	532	ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	495.30	ft	(K) Min Purge Volume (E + J)	54 gal
(C) Water Column Height (A-B)	36.7	ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Parameter Meter In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	37.43	gal		
(F) Depth to Top of Screen	512	ft	Turbidity Meter Hach 2100P	02818
(G) Depth to Bottom of Screen	527	ft		
(H) Saturated Filter Pack Length (G-F, or B)	15	ft	Pump Dedicated Bennette	On File
(I) Casing/Borehole Factor 4/10 = 1.2, (6/10 = 1.07)	1.07		Field Alkalinity La Motte	3467#8

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
2-8-12/1113	0	495.30	17.96	7.89	334.3	7.90	167	1.71	3.48L/min
1135	20	495.27	19.25	7.38	327.6	3.36	-8	2.98	
1156	39	495.27	19.29	7.42	323.0	4.91	-63	5.92	
1215	44	495.32	19.12	7.42	321.3	3.94	-48	6.93	1.0L/min
1234	49	495.33	19.03	7.43	320.1	4.20	-30	5.02	
1253	54	495.32	19.02	7.44	318.4	4.52	-13	3.64	
Values Prior to Sampling									
1253	54	495.32	19.02	7.44	318.4	4.52	-13	3.64	1.0L/min

Field Alkalinity Result 130 Mg/L as $CaCO_3$ Sample ID: GW0426

Bubbles lots of tiny bubbles

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.: KAFB- 106048
Site / SWMU No.: 106
Date: 2-8-12
Weather: Sunny 40's
Time: 0811
Field Crew: DM, DA.
Crew Signature: Daniel Medina
Review Signature:
Date Review: 2/8/12

WELL OBSERVATIONS

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

Notes: VOC's 0.7 ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	555.5	ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	494.96	ft	(K) Min Purge Volume (E + J)	78 gal
(C) Water Column Height (A-B)	60.54	ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	1.02		Parameter Meter: In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	61.75	gal	Turbidity Meter: Hach 2100P	02818
(F) Depth to Top of Screen	535.5	ft	Pump: Dedicated Bennette	On File
(G) Depth to Bottom of Screen	550.5	ft	Field Alkalinity: La Motte	3467#8
(H) Saturated Filter Pack Length (G - F or B)	15.	ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 8/10 = 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
2-8-12/0833	0	494.96	18.42	7.20	302.3	7.72	192	1.92	3.62L/min
0908	33	494.97	19.24	7.71	299.9	11.76	190	0.70	
0940	63	494.96	19.28	7.75	299.0	12.68	183	0.91	
0959	68	494.94	18.86	7.74	296.9	10.90	181	0.64	1.0L/min
1018	73	494.92	18.85	7.73	300.1	12.09	180	0.65	
1037	78	494.92	18.85	7.75	299.9	11.83	179	0.72	
Values Prior to Sampling									
1037	78	494.92	18.85	7.75	299.9	11.83	179	0.72	1.0L/min

Field Alkalinity Result 109 Mg/L as $CaCO_3$ Sample ID: GW0427

Bubbles: None Present

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 Fuel Facility Spill

Project Name: KAFB-BFF
Well ID No.: KAFB-106049
Site / SWMU No.: 106
Date: 1-24-12
Weather: Sunny
Time: 1157
Field Crew: DM, DR
Crew Signature: Daniel Mech
Review Signature: [signature]
Date Reviewed: 1-24-12

WELL OBSERVATIONS

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

Notes: VOC's 0.1 ppm in BH. BZ 0

CALCULATIONS

(A) Depth to Well Bottom	480.68 ft		(J) Total Casing Volume (H x I)	22.0 gal
(B) Pre-Purge Depth to Water	461.61 ft		(K) Total Purge Volume (E + J)	42 gal
(C) Water Column Height (A-B)	19.07 ft		EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Pump / Meter: In Situ 9500	P22831
(E) One Well Casing Volume (C x D):	19.45 gal		Turbidity Meter: HACH 2100P	02818
(F) Depth to Top of Screen	456.24 ft		Pump: Dedicated Bennette	On File
(G) Depth to Bottom of Screen	476.8 ft		Filter Pack: La Motte	3467 #8
(H) Saturated Filter Pack Length (G –F, or B)	20.56 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	Specific Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-24-12 / 1218	0	461.61	16.47	7.60	1143	7.86	140	0.71	2.4 L/min
1233	9	461.61	16.47	7.60	806.9	9.51	101	6.43	
1248	18	461.63	18.35	7.67	814.4	9.41	119	3.68	
1303	27	461.63	18.34	7.67	839.4	9.28	126	2.57	
1322	32	461.62	18.01	7.68	810.2	9.24	134	1.50	1.0 L/min
1341	37	461.62	17.95	7.68	806.5	9.20	138	1.12	
1400	42	461.70	17.96	7.68	803.8	9.15	141	0.66	

Values Prior to Sampling

1400	42	461.70	17.96	7.68	803.8	9.15	141	0.66	1.0 L/min

Field Alkalinity Result 116 Mg/L as CaCO3 **Sample ID:** GW0428

Bubbles None present

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: DM, DA
Review Signature: [signature]

Well ID No.: KAFB-106050
Date: 1-25-12
Time: 0809
Crew Signature: Daniel Medina
Date Review: 1-26-12

WELL OBSERVATIONS

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

Notes: VOC'S 4.1 ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	494.75 ft
(B) Pre-Purge Depth to Water	461.09 ft
(C) Water Column Height (A-B)	33.66 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	34.33 gal
(F) Depth to Top of Screen	475.58 ft
(G) Depth to Bottom of Screen	489.35 ft
(H) Saturated Filter Pack Length (G -F, or B)	13.77 ft
(I) Casing/~~Borehole Factor~~ 4/10 = 1.2, 5/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	14.73 gal
(K) Min Purge Volume (E + J)	50 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: Hach 2100P	02818
Pump: Dedicated Bennette	On File
Field Alkalinity: La Motte	3467 #8

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
1-25-12/0835	0	461.07	15.91	6.65	515.1	8.06	233	2.84	2.8 L/min
0903	20	461.09	18.24	7.71	514.4	13.07	119	1.56	
0924	35	461.10	18.34	7.72	511.4	13.10	134	0.95	
0943	40	461.10	17.46	7.71	521.1	11.01	148	0.84	1.0 L/min
1002	45	461.12	17.62	7.72	489.4	10.94	155	0.81	
1021	50	461.10	17.51	7.73	447.7	10.99	161	0.79	

Values Prior to Sampling

1021	50	461.10	17.51	7.73	447.7	10.99	161	0.79	1.0 L/min

Field Alkalinity Result 123 Mg/L as $CaCO_3$ Sample ID: GW0429

Bubbles ~~noted~~ none present

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
Site / SWMU No.: 106
Weather: Cloudy, Snow, 30s
Field Crew: DA/DM
Review Signature: [signature]

Well ID No.: 106051
Date: 1-24-12
Time: 0822
Crew Signature: [signature]
Date Reviewed: 1-24-12

WELL OBSERVATIONS

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

Notes: VOCs 0.2 in BH & 0 in BZ

CALCULATIONS

(A) Depth to Well Bottom	521.22 ft
(B) Pre-Purge Depth to Water	461.09 ft
(C) Water Column Height (A-B)	60.13 ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02
(E) One Well Casing Volume (C x D):	61.34 gal
(F) Depth to Top of Screen	502.05 ft
(G) Depth to Bottom of Screen	515.82 ft
(H) Saturated Filter Pack Length (G –F, or B)	13.77 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	14.74 gal
(K) Purge Volume (E + J)	77 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R72831
Turbidity Meter: HACH 2100P	07818
Pump: dedicated	on file
Field Alkalinity: La Motte	3467 #8

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Sp. Cond. (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1-24-12 0855	0	461.09	17.51	7.21	398.4	7.38	196	0.60	2.68L/min
0938	30	461.08	18.42	7.77	361.8	10.22	117	0.47	
1007	50	461.08	18.42	7.77	395.6	10.03	119	0.67	
1024	62	461.10	18.44	7.77	396.9	9.89	119	0.45	
1043	67	461.09	18.02	7.77	377.1	7.98	123	0.46	1.0L/min
1102	72	461.09	18.03	7.77	361.5	8.23	127	0.64	
1121	77	461.10	17.98	7.77	370.7	8.19	130	0.71	
Values Prior to Sampling									
1121	77	461.10	17.98	7.77	370.7	8.19	130	0.71	1.0L/min

Field Alkalinity Result 130 mg/L as $CaCO_3$ Sample ID: GW0430

Bubbles slight effervescence

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
Site / SWMU No.: 106
Weather: Cloudy
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106052
Date: 2/15/12
Time: 0830
Crew Signature: Antonio Trujillo
Date Review: 2-15-2012

WELL OBSERVATIONS

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

Notes: Vocs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	484.80 ft
(B) Pre-Purge Depth to Water	463.48 ft
(C) Water Column Height (A-B)	21.22 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	21.6 gal
(F) Depth to Top of Screen	450.35 ft
(G) Depth to Bottom of Screen	479.63 ~~450.35~~ ft
(H) Saturated Filter Pack Length (G –F, or B)	~~479.63~~ AT 16.05 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	AT ~~17.17~~ 1.07

(J) Filter Pack Volume (H x I)	17.17 gal
(K) Min Purge Volume (E + J)	39 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Dedicated Bennett	on file
Field Alkalinity: Ca Mott	3467#7

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
2/15/12 0912	Ø	463.58	15.75	6.62	418.2	8.13	8.13	9.99	3.44 L/m
0940	25	463.57	18.05	7.68	411.0	9.60	9.60	3.50	
0958	30	463.51	17.79	7.72	407.3	9.20	144	1.41	1.0 L/m
1016	35	463.51	18.21	7.73	~~40~~ 406.2	9.14	147	1.36	
1031	39	463.51	18.19	7.73	407.5	9.14	148	0.72	

Values Prior to Sampling

1031	39	463.51	18.19	7.73	407.5	9.14	148	0.72	1.0 L/m

Field Alkalinity Result 112 mg/L as $CaCO_3$ Sample ID: GW0431
no Bubbles

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, JN
Review Signature: [signature]

Well ID No.: 106053
Date: 2/15/12
Time: 1105
Crew Signature: [signature]
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	498.43 ft
(B) Pre-Purge Depth to Water	463.36 ft
(C) Water Column Height (A-B)	35.07 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	479.26 ft
(G) Depth to Bottom of Screen	493.03 ft
(H) Saturated Filter Pack Length (G - F, or B)	13.77 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)	51 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Dedicated Bennett	on file
Field Alkalinity: CaMotte	3467 #7

PURGING INFORMATION

Description first water purged: Light Brown

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
2/15/12 1118	Ø	463.36	16.83	6.86	369.4	8.41	119	9.99	3.64 L/m
1139	20	463.45	18.28	7.69	366.7	12.43	102	7.23	
1155	35	463.47	18.30	7.73	368.5	12.63	109	1.13	
1213	40	463.36	17.70	7.72	369.7	9.97	119	0.73	1.00 L/min
1231	45	463.36	17.43	7.75	375.1	9.91	123	0.65	
1253	51	463.34	17.25	7.76	370.6	9.98	129	0.55	
Values Prior to Sampling									
1253	51	463.34	17.25	7.76	370.6	9.98	129	0.55	1.0 L/m

Field Alkalinity Result 123 mg/L as CaCO3 Sample ID: GW0432
Yes Bubbles GW0433

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106054
Date: 2/15/12
Time: 1345
Crew Signature: [signature]
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in GB

CALCULATIONS

(A) Depth to Well Bottom	524	ft
(B) Pre-Purge Depth to Water	463.01	ft
(C) Water Column Height (A-B)	60.99	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	62.2	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)	78.05	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	3467 #7	
Field Alkalinity: La Motte	3467 #7	

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
2/15/12 1401	Ø	463.01	16.31	7.22	335.2	8.69	153	9.99	3.68 L/min
1432	30	463.05	18.33	7.75	363.2	8.46	86	1.87	
1442	50	463.05	18.34	7.78	364.1	8.71	91	1.21	
1452	60	463.05	18.31	7.77	366.6	8.77	94	1.03	
1510	65	463.01	~~14.97~~ 17.77	7.58	373.7	6.98	103	0.90	1.00 L/min
1528	70	463.01	17.09	7.81	376.5	6.82	108	0.96	
1558	78	463.01	17.09	7.81	376.5	6.82	108	1.05	
Values Prior to Sampling									
1558	78	463.01	17.09	7.81	376.5	6.82	108	1.05	

Field Alkalinity Result 100 mg/L as CaCO3 Sample ID: GW0434

heavy Bubbles

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
Site / SWMU No.: 106
Weather: sunny
Field Crew: AT, TW
Review Signature: [signature]

Well ID No.: 106055
Date: 1/31/12
Time: 1300
Crew Signature: [signature]
Date Review: 2-1-12

WELL OBSERVATIONS

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

Notes: VOCs ∅ in WB, Set pump @ 475'

CALCULATIONS

(A) Depth to Well Bottom	490.26 ft
(B) Pre-Purge Depth to Water	469.85 ft
(C) Water Column Height (A-B)	20.40 ft
(D) Casing Factor: 4"=0.65 6"=1.02	1.02
(E) One Well Casing Volume (C x D):	20.8 gal
(F) Depth to Top of Screen	465.82 ft
(G) Depth to Bottom of Screen	484.82 ft
(H) Saturated Filter Pack Length (G –F, or B)	14.97 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	16.01 gal
(K) Min Purge Volume (E + J)	37 gal
EQUIPMENT / MODEL	ID NUMBER
Parameter Meter: Insitu 9500	R 22214
Turbidity Meter: Hach	2821
Pump: Portable Bennett	on file
Field Alkalinity: Ca Mott	3467#7

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
1/31/12 1336	∅	469.85	18.39	7.35	339.4	7.22	230	1.60	1.68 L/m
1410	15	469.91	18.52	7.89	341.7	9.07	252	2.89	
1428	25	469.89	18.21	7.91	343.2	9.06	243	2.61	~~1.0 L/m~~
1446	30	469.88	18.15	7.93	337.8	9.07	229	2.99	1.0 L/m
1513	37	469.88	18.14	7.93	340.7	9.10	219	1.63	

Values Prior to Sampling

1513	37	469.88	18.14	7.93	340.7	9.10	219	1.63	1.0 L/m

Field Alkalinity Result 143 mg/L as $CaCO_3$ Sample ID: ~~GW0436~~ AT

NO Bubbles GW 0435

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.: 106057
Site / SWMU No.: 106
Date: 1/31/12
Weather: Sunny
Time: 0815
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 1-31-12

WELL OBSERVATIONS

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

Notes: VOC'S Ø in W3, Set pump @ 493'

CALCULATIONS

(A) Depth to Well Bottom	505.34	ft
(B) Pre-Purge Depth to Water	470.27	ft
(C) Water Column Height (A-B)	35.08	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	499.94	ft
(G) Depth to Bottom of Screen	486.17	ft
(H) Saturated Filter Pack Length (G –F, or B)	13.77	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)	51	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	3821	
Pump: Portable Bennett	on file	
Field Alkalinity: La Motte	3467 #7	

PURGING INFORMATION

Description first water purged: Clear

Date and / or Time	Gallons Removed	Depth to Ground-water (Ft)	Temp (°C)	pH	Spec Cond (µS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)	Comment
1/31/12 0921	Ø	470.27	14.55	7.03	396.8	8.10	282	1.87	1.44 L/min
1014	20	470.20	18.56	7.58	363.1	9.81	239	1.89	
1040	30	470.21	18.47	7.86	360.6	9.85	234	1.95	
1058	35	470.22	18.57	7.84	360.8	9.62	233	1.85	
1116	40	470.26	18.37	7.90	359.1	9.41	231	1.26	1.00 L/min
1134	45	470.26	18.40	7.92	359.0	9.37	230	1.15	
1156	51	470.24	18.42	7.91	360.8	9.52	230	1.11	

Values Prior to Sampling

1156	51	470.24	18.42	7.91	360.8	9.52	230	1.11	1.0 L/m

Field Alkalinity Result 140 mg/L as $CaCO_3$ **Sample ID:** GW0435

light Bubbles

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

Site / SWMU No.: 106

Weather: Sunny

Field Crew: AT, TN

Review Signature: [signature]

Well ID No.: 106058

Date: 1/30/12

Time: 0845

Crew Signature: [signature]

Date Review: 1-30-12

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -

Locked: Yes - No

Well ID Mark: Yes - No

Notes: VOCs Ø in WB, Set pump @ 517'

CALCULATIONS

(A) Depth to Well Bottom	530.34	ft
(B) Pre-Purge Depth to Water	472.39	ft
(C) Water Column Height (A-B)	57.95	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	59.10	gal
(F) Depth to Top of Screen	511.17	ft
(G) Depth to Bottom of Screen	524.94	ft
(H) Saturated Filter Pack Length (G –F, or B)	13.77	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	14.73	gal
(K) Min Purge Volume (E + J)	74	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Remote	on file	
Field Alkalinity: La Motte	3467 #7	

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
1/30/12 0932	Ø	470.50	14.05	7.14	335.9	12.17	278	0.94	1.50 L/m
1021	20	470.68	18.39	7.84	302.0	16.42	250	1.25	
1110	40	470.68	18.47	7.88	304.0	16.44	229	0.68	
1159	60	470.71	18.42	7.91	301.5	16.25	221	0.72	
1218	65	470.81	17.92	7.91	304.6	12.36	222	0.64	0.96
1236	70	470.80	17.85	7.92	302.5	12.16	219	0.60	
1251	74	470.81	18.02	7.94	303.4	12.14	217	0.71	

Values Prior to Sampling

1251	74	470.81	18.02	7.94	303.4	12.14	217	0.71	0.96 L/m

Field Alkalinity Result 101 mg/L as CaCO3 light Bubbles

Sample ID: GW0437

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
Site / SWMU No.: 106
Weather: Sunny 50's
Field Crew: DM, DH
Review Signature: [signature]

Well ID No.: KAFB-106059
Date: 2-23-12
Time: ~~0737~~ am 1042
Crew Signature: Daniel Medina
Date Review: 2/23/2012

WELL OBSERVATIONS

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

Notes: VOC's 2,160 ppm in BH. BZ 1.4 ppm

CALCULATIONS

(A) Depth to Well Bottom	508.4	ft
(B) Pre-Purge Depth to Water	486.53	ft
(C) Water Column Height (A-B)	21.87	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	22.31	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)	16.87	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	18.05	gal
(K) Min Purge Volume (E + J)	41	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#9	

PURGING INFORMATION

Description first water purged: Strong odor and 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
2-23-12/1059	0	486.53	18.40	7.23	675.8	3.32	-36	21.7	2.80L/min
1117	13	486.57	19.36	7.19	580.4	0.19	-153	4.73	
1135	26	486.56	19.34	7.23	529.0	0.81	-127	7.59	
1154	31	486.59	19.36	7.23	525.8	1.00	-105	6.09	1.0L/min
1213	36	486.59	19.32	7.23	532.9	0.89	-98	4.69	
1232	41	486.58	19.42	7.23	526.8	0.90	-92	3.74	

Values Prior to Sampling

1232	41	486.58	19.42	7.23	526.8	0.90	-92	3.74	1.0L/min

Field Alkalinity Result 208 Mg/L as $CaCO_3$ Sample ID: GW0438

Bubbles None

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
Site / SWMU No.: 106
Weather: Sunny 40's
Field Crew: DM, DH
Review Signature: [signature]

Well ID No.: KAFB-106060
Date: 2-23-12
Time: 0737
Crew Signature: Daniel Medina
Date Review: 2/23/2012

WELL OBSERVATIONS

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

Notes: VOC's 0.3 ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	523 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	486.75 ft	(K) Min Purge Volume (E + J)	54 gal
(C) Water Column Height (A-B)	36.25 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65, 5"=1.02	1.02	Parameter Meter: In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	36.98 gal	Turbidity Meter: Hach 2100P	02818
(F) Depth to Top of Screen	503 ft	Pump: Dedicated Bennette	On File
(G) Depth to Bottom of Screen	518 ft	Field Alkalinity: La Motte	3467#9
(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
2-23-12/0748	0	486.75	15.45	7.23	328.6	8.16	189	0.60	3.24 L/min
0812	20	486.76	19.05	7.73	348.8	13.98	182	0.31	
0835	39	486.76	19.09	7.75	348.7	14.08	180	0.34	
0854	44	486.75	18.48	7.75	347.7	11.04	179	0.42	1.04 L/min
0913	49	486.75	18.40	7.76	346.8	11.06	178	0.25	
0932	54	486.78	18.45	7.76	345.3	10.99	179	0.11	
Values Prior to Sampling									
0932	54	486.78	18.45	7.76	345.3	10.99	179	0.11	1.04 L/min

Field Alkalinity Result 126 Mg/L as CaCO3 Sample ID: GW0439 REG, MS, MSD.

Bubbles tiny bubbles

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
Site / SWMU No.: 106
Weather: Sunny 50°s
Field Crew: DA, DM
Review Signature: [signature]

Well ID No.: 106061
Date: 2-27-12
Time: 1050
Crew Signature: [signature]
Date Review: 2/02/12

WELL OBSERVATIONS

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

Notes: VOCs 2.9 in BH

CALCULATIONS

(A) Depth to Well Bottom	593.2 ft
(B) Pre-Purge Depth to Water	486.73 ft
(C) Water Column Height (A-B)	106.47 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	108.60 gal
(F) Depth to Top of Screen	573.2 ft
(G) Depth to Bottom of Screen	588.2 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 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: YSI 9500	R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennitt on file	
Field Alkalinity: LaMotte	3467#9

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
2-27-12 1102	0	486.73	17.23	8.01	263.7	7.87	-40	0.24	3.0L/min
1151	40	486.75	19.21	7.83	261.7	4.99	6	0.92	
1240	80	486.77	19.25	7.83	262.1	4.92	28	0.66	
1317	110	486.78	19.34	7.83	262.0	4.33	41	1.37	
1336	115	486.76	19.23	7.84	261.7	4.46	41	1.13	1.0L/min
1355	120	486.75	18.70	7.86	262.3	4.10	44	2.18	
1414	125	486.74	18.29	7.86	261.6	4.31	48	3.99	

Values Prior to Sampling

1414	125	486.74	18.29	7.86	261.6	4.31	48	3.99	1.0L/min

Field Alkalinity Result 108 mg/L as $CaCO_3$ Sample ID: GW0440

Bubbles None

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
Site / SWMU No.: 106
Weather: Sunny 40's
Field Crew: DA
Review Signature:

Well ID No.: 106062
Date: ~~2-9-12~~ 2-10-12
Time: 1007
Crew Signature:
Date Review: 2/10/12

WELL OBSERVATIONS

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

Notes: VOCs Ø in BH

CALCULATIONS

(A) Depth to Well Bottom	~~595.78~~ 595.8 ft
(B) Pre-Purge Depth to Water	493.23 ft
(C) Water Column Height (A-B)	101.77 ft
(D) Casing Factor: 4"=0.65 6"=1.02	1.02
(E) One Well Casing Volume (C x D):	103.81 gal
(F) Depth to Top of Screen	575.78 ft
(G) Depth to Bottom of Screen	590.26 ft
(H) Saturated Filter Pack Length (G-F or B)	14.48 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	15.49 gal
(K) Min Purge Volume (E + J)	120 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R77831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467 #8

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
~~2-9-12~~ 2-10-12 / 1015	Ø	493.23	12.68	8.02	303.3	8.86	165	0.32	3.76 L/min
1051	35	493.25	19.31	7.75	297.7	6.40	184	0.76	
1127	70	493.23	19.31	7.72	297.2	6.34	184	0.55	
1205	105	493.21	19.37	7.73	297.2	6.28	181	0.51	
1222	110	493.25	18.70	7.71	297.0	4.09	181	0.68	1.0 L/min
1241	115	493.26	18.52	7.72	296.2	4.35	180	0.64	
1300	120	493.26	18.59	7.74	296.6	4.40	178	0.59	

Values Prior to Sampling

1300	120	493.26	18.59	7.74	296.6	4.40	178	0.59	1.0 L/min

Field Alkalinity Result 116 mg/L as $CaCO_3$ Sample ID: GW0441

Bubbles none present

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
Site / SWMU No.: 106
Weather: Sunny 30's
Field Crew: DA
Review Signature: [signature]

Well ID No.: 106063
Date: 2-10-12
Time: 0731
Crew Signature: [signature]
Date Review: 2/10/12

WELL OBSERVATIONS

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

Notes: VOCs ØIn BH

CALCULATIONS

(A) Depth to Well Bottom	525	ft
(B) Pre-Purge Depth to Water	494.13	ft
(C) Water Column Height (A-B)	30.87	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	31.49	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, (6/10 = 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: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	07818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	3467#9	

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
2-10-12/0747	0	494.13	10.54	7.23	380.3	8.82	202	1.18	3.0 L/min
0810	18	494.15	18.84	7.72	370.3	8.59	193	1.25	
0829	33	494.16	18.84	7.73	368.6	8.92	191	0.60	
0848	38	494.20	18.14	7.71	372.5	7.92	192	0.66	1.0 L/min
0907	43	494.19	18.14	7.71	374.1	7.59	190	0.38	
0926	48	494.18	18.21	7.72	372.6	7.75	189	0.35	

Values Prior to Sampling

0926	48	494.18	18.21	7.72	372.6	7.75	189	0.35	1.0 L/min

Field Alkalinity Result: 132 mg/L as CaCO3 Sample ID: GW0442 + GW0443

Bubbles few small bubbles

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
Site / SWMU No.: 106
Weather: sunny
Field Crew: TN, AT
Review Signature: [signature]

Well ID No.: 106064
Date: 2/17/12
Time: 0900
Crew Signature: [signature]
Date Review: 2/17/12

WELL OBSERVATIONS

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

Notes: VOC's 2000 ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	510	ft	(J) Filter Pack Volume (H x I)	12.75 gal
(B) Pre-Purge Depth to Water	493.08	ft	(K) Min Purge Volume (E + J)	30.00 gal
(C) Water Column Height (A-B)	16.92	ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02		Parameter Meter: Insitu 9500	R 22214
(E) One Well Casing Volume (C x D):	17.25	gal	Turbidity Meter: Hach	2821
(F) Depth to Top of Screen	484	ft	Pump: portable Bennett	on file
(G) Depth to Bottom of Screen	505	ft	Field Alkalinity: La Motte	3467
(H) Saturated Filter Pack Length (G -F, or B)	11.92	ft		
(I) Casing/~~Borehole~~ Factor 4/10 = 1.2, (5/10 = 1.07)	1.07			

PURGING INFORMATION

Description first water purged: clear with 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
2/17/12 935	0	493.08	17.53	7.21	461.0	3.07	-93	1.92	1.5 L/min
1000	10	493.11	18.01	7.39	454.8	2.02	-166	0.98	
1013	15	493.11	18.15	7.44	453.9	2.46	-161	1.14	
1031	20	493.09	17.77	7.46	454.1	2.67	-154	1.15	1.00 L/min
1049	25	493.09	17.79	7.48	454.2	2.93	-146	1.21	
1107	30	493.09	17.77	7.49	454.1	2.96	-144	1.39	
Values Prior to Sampling									
1107	30	493.09	17.77	7.49	454.1	2.96	-144	1.39	

Field Alkalinity Result 230 mg/L @ $CaCO_3$ Sample ID: GW0444

Nada Bubbles

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
Site / SWMU No.: 106
Weather: Cloudy, Windy
Field Crew: AT, TW
Review Signature: [signature]

Well ID No.: 106028
Date: 2/16/12
Time: 0800
Crew Signature: Antonio Jylle
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOC's 59 ppm in BH, Set pump @ 501'

CALCULATIONS

(A) Depth to Well Bottom	516	ft
(B) Pre-Purge Depth to Water	491.38	ft
(C) Water Column Height (A-B)	24.62	ft
(D) Casing Factor (4"=0.65) 5"=1.02	0.65	
(E) One Well Casing Volume (C x D):	16.00	gal
(F) Depth to Top of Screen	491	ft
(G) Depth to Bottom of Screen	511	ft
(H) Saturated Filter Pack Length (G –F, (or B))	19.62	ft
(I) Casing/Borehole Factor 4/10 = (1.2) 5/10 = 1.07, _____	1.2	

(J) Filter Pack Volume (H x I)	18.42	gal
(K) Min Purge Volume (E + J)	34	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Ins Au 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: Ca Mott	3467 #7	

PURGING INFORMATION

Description first water purged: Clear, Slight 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
2/16/12 0934	Ø	491.38	10.78	6.98	584.0	5.48	137	4.47	1.56 L/m
0958	10	491.32	17.89	7.52	610.9	1.48	-245	2.29	
1022	20	491.39	18.01	7.59	602.0	1.75	-231	2.26	
1040 ~~1037~~	25	491.37	17.32	7.62	591.7	2.08	-225	3.95	1.00 L/min
1058 ~~1055~~	30	491.38	17.35	7.64	589.4	2.24	-224	4.11	
1113 ~~1110~~	34	491.38	17.37	7.63	590.1	1.97	-229	4.14	
Values Prior to Sampling									
1113	34	491.38	17.37	7.63	590.1	1.97	-229	4.14	1.0 L/m

Field Alkalinity Result 190 Mg/L as CaCO3 Sample ID: GW0445

no Bubbles

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
Site / SWMU No.: 106
Weather: Sunny 40's
Field Crew: DM, DA
Review Signature: [illegible]

Well ID No.: KAFB-106065
Date: 2-15-12
Time: 1308
Crew Signature: Daniel Medina
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOC's Ø ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	528	ft
(B) Pre-Purge Depth to Water	491.16	ft
(C) Water Column Height (A-B)	36.84	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	37.58	gal
(F) Depth to Top of Screen	508	ft
(G) Depth to Bottom of Screen	523	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)	54	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#9	

PURGING INFORMATION

Description first water purged: Clear with some 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
2-15-12/1315	0	491.16	12.29	7.57	776.6	8.05	196	4.05	2.98L/min
1341	20	491.17	18.44	7.30	538.0	0.52	-142	3.24	
1406	39	491.16	18.53	7.33	534.3	0.56	-142	0.93	
1425	44	491.19	16.99	7.31	537.8	0.08	-151	0.67	1.0L/min
1444	49	491.20	16.65	7.31	538.5	0.12	-147	0.78	
1503	54	491.20	16.59	7.31	544.2	0.11	-146	0.65	
Values Prior to Sampling									
1503	54	491.20	16.59	7.31	544.2	0.11	-146	0.65	1.0L/min

Field Alkalinity Result 110 Mg/L as CaCO3 Sample ID: GW0446

Bubbles few small bubbles

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
Site / SWMU No.: 106
Weather: Sunny 30°'s
Field Crew: DM, DA
Review Signature: [illegible]

Well ID No.: KAFB-106066
Date: 2-15-12
Time: 0914
Crew Signature: Daniel Medina
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOC's Ø ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	595.8 ft
(B) Pre-Purge Depth to Water	491.30 ft
(C) Water Column Height (A-B)	104.5 ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02
(E) One Well Casing Volume (C x D):	106.60 gal
(F) Depth to Top of Screen	575.6 ft
(G) Depth to Bottom of Screen	590.6 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)	123 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: Hach 2100P	02818
Pump: Dedicated Bennette	On File
Field Alkalinity: La Motte	3467 #9

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
2-15-12/0930	0	491.30	11.97	7.12	282.7	8.94	210	0.67	3.2L/min
1012	36	491.32	18.63	7.62	285.7	16.04	221	2.25	
1054	72	491.34	18.77	7.65	285.0	16.71	205	1.06	
1136	108	491.33	18.89	7.64	285.4	17.32	192	1.68	
1155	113	491.36	19.35	7.65	284.2	11.10	191	0.81	1.0L/min
1214	118	491.35	18.28	7.66	285.2	11.63	189	1.11	
1233	123	491.36	18.29	7.68	284.3	10.69	187	1.00	
Values Prior to Sampling									
1233	123	491.36	18.29	7.68	284.3	10.69	187	1.00	1.0L/min

Field Alkalinity Result 116 Mg/L as $CaCO_3$ Sample ID: GW0447

Bubbles few bubbles

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.: 106067
Site / SWMU No.: 106
Date: 2/8/12
Weather: Sunny
Time: 1440
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature:
Date Review: [signature] 2-9-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	510	ft
(B) Pre-Purge Depth to Water	490.68	ft
(C) Water Column Height (A-B)	19.32	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	~~20.34~~ 19.7	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)	14.35	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	153	gal
(K) Min Purge Volume (E + J)	3.5	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: Lee Motz	3467 FF	

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
2/8/12 1502	Ø	490.68	17.07	7.60	463.4	7.17	153	1.37	2.80 L/m
1529	20	490.84	18.53	7.50	384.4	4.88	52	n/a	
1547	25	490.74	18.03	7.56	385.8	4.82	54	n/a	1.0 L/m
1605	30	490.73	18.06	7.57	384.8	4.94	72	n/a	
1623	35	490.75	17.97	7.57	383.5	4.91	84	n/a	

Values Prior to Sampling

1623	35	490.75	17.97	7.57	383.5	4.91	84	n/a	1.0 L/m

Field Alkalinity Result 132 Mg/L as $CaCO_3$ Sample ID: GW0448

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
Site / SWMU No.: 106
Weather: Sunny 50's
Field Crew: DM, DA
Review Signature:

Well ID No.: KAFB-106068
Date: 2-17-12
Time: 0757
Crew Signature: Daniel Medina
Date Review: 2/17/12

WELL OBSERVATIONS

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

Notes: VOC's 0.3 ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	600	ft
(B) Pre-Purge Depth to Water	490.13	ft
(C) Water Column Height (A-B)	109.87	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	112.07	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 15) DM	15 ~~104.87~~ DM	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)	129	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#9	

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
2-17-12/0835	0	490.13	15.64	7.00	275.9	8.10	200	6.48	3.2 L/min
0920	38	490.13	19.13	7.93	286.8	18.24	202	0.42	
1005	76	490.14	19.10	7.76	286.3	18.65	195	0.52	
1050	114	490.12	19.23	7.77	286.9	19.31	188	0.56	
1109	119	490.10	18.83	7.77	286.9	10.60	186	0.47	1.0 L/min
1128	124	490.10	18.81	7.78	287.5	10.96	183	0.46	
1147	129	490.12	18.79	7.78	287.1	10.75	180	0.42	
Values Prior to Sampling									
1147	129	490.12	18.79	7.78	287.1	10.75	180	0.42	1.0 L/min

Field Alkalinity Result 124 Mg/L as CaCO3 Sample ID: GW0449 - REG
GW0450 - FD

Bubbles
few small bubbles

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, JN
Review Signature: [illegible]

Well ID No.: 106069
Date: 2/21/22
Time: 0915
Crew Signature: Antonio Jyelo
Date Review: 9/21/22

WELL OBSERVATIONS

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

Notes: VOCs @ MWB, set pump @ 54'

CALCULATIONS

(A) Depth to Well Bottom	526	ft
(B) Pre-Purge Depth to Water	490.01	ft
(C) Water Column Height (A-B)	35.99	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	36.7	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	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: YSI, M 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Geotech Bennett	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
2/21/12 0948	Ø	490.01	12.87	6.89	358.7	7.62	222	5.13	1.62 L/m
1035	20	489.93	18.39	7.59	253.4	7.08	190	4.64	
1110	35	489.92	18.26	7.70	289.0	7.43	177	3.70	
1128	40	489.95	~~18.24~~	7.76	296.3	7.38	172	2.99	1.0 L/m
1146	45	489.92	17.66	7.74	238.3	7.39	169	2.46	
1216	53	489.92	17.92	7.78	300.5	7.20	166	2.69	
Values Prior to Sampling									
1216	53	489.92	17.92	7.78	300.5	7.20	166	2.69	1.0 L/m

Field Alkalinity Result 124 mg/L as $CaCO_3$ Sample ID: GW0451

Bubbles ☐ Yes ☒ No

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

Site / SWMU No.: 106

Weather: cloudy

Field Crew: AT, TN

Review Signature:

Well ID No.: 106070

Date: 2/6/12

Time: 0800

Crew Signature: Antonio Jylk

Date Review:

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -

Locked: Yes No

Well ID Mark: Yes - No

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	485	ft
(B) Pre-Purge Depth to Water	462.81	ft
(C) Water Column Height (A-B)	22.19	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	23	gal
(F) Depth to Top of Screen	460	ft
(G) Depth to Bottom of Screen	480	ft
(H) Saturated Filter Pack Length (G –F, or B)	17.19 ~~22~~ TN	ft
(I) Casing/~~Borehole~~ Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	18.3	gal
(K) Min Purge Volume (E + J)	41	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: dedicated Bennett	on file	
Field Alkalinity: Ca Motte	3467 #7	

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
2/6/12 0925	Ø	462.81	16.82	7.35	504.5	9.05	207	1.07	2.64 L/min
0939	10	462.91	18.47	7.46	407.2	3.35	44	9.99	
0954	20	462.91	18.47	7.48	410.4	2.95	47	n/a	
1001	25	462.91	18.48	7.48	412.4	2.79	46	9.34	
1019	30	462.84	18.37	7.54	414.8	2.87	62	6.36	1.00 L/min
1037	35	462.83	18.41	7.56	415.0	2.87	68	4.83	
1100	41	462.84	18.24	7.57	417.1	2.84	70	4.04	
Values Prior to Sampling									
1100	41	462.84	18.24	7.57	417.1	2.84	70	4.04	1.0 L/m

Field Alkalinity Result 155 Mg/L as CaCO3 Sample ID: GW0452

no Bubbles

GW 0452-MS

GW 0452-MSD

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.: 106071

Site / SWMU No.: 106

Date: 2/6/12

Weather: Cloudy

Time: 1230

Field Crew: AT, TN

Crew Signature: Anton Jeh

Review Signature: [illegible]

Date Review: 2/7/2012

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -

Locked: Yes - No

Well ID Mark: Yes - No

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	568	ft
(B) Pre-Purge Depth to Water	464.85	ft
(C) Water Column Height (A-B)	103.15	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	105.2	gal
(F) Depth to Top of Screen	548	ft
(G) Depth to Bottom of Screen	563	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)	16.08	gal
(K) Min Purge Volume (E + J)	121	gal
EQUIPMENT / MODEL	ID NUMBER	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: CaMotte	3467 #7	

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
2/6/12 1257	Ø	464.85	15.45	248	294.7	7.81	123	1.18	3.64 L/m
1328	30	464.88	18.85	7.73	286.9	9.85	120	2.96	
1359	60	464.87	16.90	7.79	289.2	10.88	125	2.91	
1430	90	464.86	18.89	7.79	290.3	11.35	130	2.53	
1446	105	464.85	18.90	7.81	288.7	11.57	132	0.97	
1504	110	464.77	18.19	7.86	286.2	7.09	132	0.76	1.0 L/min
1522	115	464.75	17.98	7.85	290.3	7.66	135	0.70	
1540	121	464.75	17.86	7.87	293.6	8.36	137	0.96	
Values Prior to Sampling									
1540	121	464.75	17.86	7.87	293.6	8.36	137	0.96	1.0 L/m

Field Alkalinity Result 85 mg/L as $CaCO_3$ Sample ID: GW 0453

Light Bubbles

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

Site / SWMU No.: 106

Weather: Sunny

Field Crew: AT, TN

Review Signature: [signature]

Well ID No.: 106072

Date: 2/7/12

Time: 0815

Crew Signature: [signature]

Date Review: 2/7/2012

WELL OBSERVATIONS

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

Notes: VOC's Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	500	ft
(B) Pre-Purge Depth to Water	463.40	ft
(C) Water Column Height (A-B)	36.6	ft
(D) Casing Factor: 4"=0.65, 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	37.3	gal
(F) Depth to Top of Screen	475	ft
(G) Depth to Bottom of Screen	495	ft
(H) Saturated Filter Pack Length (G – B, or B)	20	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	21.4	gal
(K) Min Purge Volume (E + J)	59	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: LaMotte	3467 #7	

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
2/7/12 1027	Ø	463.40	16.63	7.33	409.4	9.35	245	1.29	3.64 L/m
1058	30	463.55	18.54	7.42	364.6	5.54	39	1.25	
1108	40	463.55	18.58	7.44	364.4	5.44	40	0.92	
1113	45	463.55	18.60	7.47	367.5	5.45	41	0.79	
1118	50	463.41	18.60	7.54	367.7	4.54	43	1.01	1.08 L/m
1136	55	463.39	18.16	7.54	367.1	4.54	63	1.19	
1151 ~~1204~~	59	463.39	18.03	7.54	370.7	4.57	76	0.90	
Values Prior to Sampling									
1151 ~~1204~~	59	463.39	18.03	7.54	370.7	4.57	76	0.90	1.08 L/m

Field Alkalinity Result 150 mg/L as $CaCO_3$ Sample ID: GW0454

Bubbles Effervescent

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: 2/23/12
Weather: Sunny
Time: 0800
Field Crew: AT, JN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/23/2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	519.53	ft
(B) Pre-Purge Depth to Water	482.07	ft
(C) Water Column Height (A-B)	37.46	ft
(D) Casing Factor: 4"=0.65 (6"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	38.2	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)	15.54	gal
(K) Min Purge Volume (E + J)	54	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Geotechnical Benner	on file	
Field Alkalinity: LaMotte	3467FT	

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
2/23/12 0840	Ø	482.07	17.66	6.87	315.1	8.19	235	1.75	3.4 L/m
0902	20	482.18	17.66	6.87	315.1	8.19	235	1.95	
0924	40	482.17	17.66	6.87	315.1	8.19	235	1.55	
0942	45	482.09	17.66	6.87	315.1	8.19	235	0.95	0.96 L/m
1000	50	482.08	18.22	7.64	406.4	9.88	119	0.54	
1015	54	482.08	18.20	7.67	409.0	10.06	123	0.65	

Values Prior to Sampling

1015	54	482.08	18.20	7.67	409.0	10.06	123	0.65	0.96 L/m

Field Alkalinity Result 142 mg/L as $CaCO_3$ Sample ID: GW0455

Bubbles ☒ YES ☐ NO

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106074
Date: 2/23/12
Time: 1100
Crew Signature: [signature]
Date Review: 2/28/12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	589.93 ft
(B) Pre-Purge Depth to Water	482.83 ft
(C) Water Column Height (A-B)	107.1 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	109 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)	123 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	1222214
Turbidity Meter: Hach	2821
Pump: Dedicated Bennett	on file
Field Alkalinity: Carmotte	3467 #7

PURGING INFORMATION

Description first water purged: Crystal 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
2/23/12 1117	Ø	482.83	17.04	7.26	265.5	7.85	157	0.46	3.48 L/m
1201	40	482.87	18.87	7.86	267.8	4.61	111	1.18	
1245	80	482.85	18.90	7.88	265.4	4.46	112	1.08	
1318	110	482.84	18.91	7.85	265.4	4.58	115	0.74	
1336	115	482.79	18.36	7.85	265.5	3.75	120	0.79	0.96 L/m
1354	120	482.79	18.31	7.85	267.5	3.77	122	0.80	
1405	123	482.78	18.28	7.84	267.0	3.82	124	0.78	
Values Prior to Sampling									
1405	123	482.78	18.28	7.84	267.0	3.82	124	0.78	0.96 L/m

Field Alkalinity Result 118 mg/L as CaCO3 Sample ID: GW 0456

Bubbles ☒ Yes ☐ No

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.: 106075
Site / SWMU No.: 106
Date: 2/22/12
Weather: Sunny
Time: 0915
Field Crew: AT TN
Crew Signature: Antonio Japle
Review Signature: [signature]
Date Review: 2/22/12

WELL OBSERVATIONS

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

Notes: VOC'S Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	505	ft
(B) Pre-Purge Depth to Water	483.07	ft
(C) Water Column Height (A-B)	21.93	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	22.3	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)	16.93	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	18.1	gal
(K) Min Purge Volume (E + J)	40	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R222214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: Cal Mobile	34167 #7	

PURGING INFORMATION

Description first water purged: Clear, slight 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
2/22/12 0950	Ø	483.07	16.65	7.19	415.4	7.63	238	0.75	2.2 L/min
1033	25	483.15	18.47	7.49	362.9	1.86	150	1.43	
1061	30	483.09	18.16	7.52	363.7	1.75	152	0.75	1.00 L/min
1109	35	483.08	18.47	7.55	364.3	1.75	150	0.77	
1127	40	483.08	18.54	7.55	366.9	1.71	149	0.79	
Values Prior to Sampling									
1127	40	483.08	18.54	7.55	366.9	1.71	149	0.79	1.0 L/min

Field Alkalinity Result 142 Mg/L as CaCO3 Sample ID: GW 0457

Bubbles ☐ YES ☒ NO

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

Site / SWMU No.: 106

Weather: Sunny

Field Crew: AT, TM

Review Signature: [signature]

Well ID No.: 106076

Date: 3/27/12

Time: 07:30

Crew Signature: Antonio [signature]

Date Review: 3/27/2012

WELL OBSERVATIONS

Protective Casing / Vault: (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark (Yes) - No

Notes: VOCs 14.1 ppm in BH Jet pump @ 484'

CALCULATIONS

(A) Depth to Well Bottom	505	ft
(B) Pre-Purge Depth to Water	486.44	ft
(C) Water Column Height (A-B)	18.56	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	18.9 ~~14.58~~ AT	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))	13.56	ft
(I) Casing/Borehole Factor 4/10 = 1.2 (5/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	14.5	gal
(K) Min Purge Volume (E + J)	33	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22831	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: Ca Mate	3467	

PURGING INFORMATION

Description first water purged: dark grey w/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
3/27/12 0916 ~~0848~~ AT	Ø	486.44	16.92	7.09	943.9	2.30	-113	15.7	~~1.0 L/m~~ AT 1.22 L/m
1018	20	486.62	19.30	7.02	846.1	0.21	-186	4.58	
1036	25	486.58	19.16	7.04	832.9	0.28	-184	1.55	0.96 L/m
1054	30	486.60	19.15	7.05	813.1	0.35	-186	1.25	
1105	33	486.60	19.06	6.99	818.6	0.38	-178	1.46	

Values Prior to Sampling

1105	33	486.60	19.06	6.99	818.6	0.38	-178	1.46	0.96 L/m

Field Alkalinity Result 344 mg/L as CaCO3 Sample ID: GW0458

NO Bubbles

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.: 106077
Site / SWMU No.: 106
Date: 2/28/12
Weather: Cloudy, windy
Time: 0830
Field Crew: ATTA
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/28/2012

WELL OBSERVATIONS

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

Notes: VOC's in uB, set pump @ 511'

CALCULATIONS

(A) Depth to Well Bottom	524	ft
(B) Pre-Purge Depth to Water	487.26	ft
(C) Water Column Height (A-B)	36.74	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	37.5	gal
(F) Depth to Top of Screen	504	ft
(G) Depth to Bottom of Screen	519	ft
(H) Saturated Filter Pack Length (G - E, 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)	54	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insite 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	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
2/28/12 0906	0	487.26	14.82	7.31	3255	8.02	197	3.69	1.60 L/m
0953	20	487.25	18.54	7.75	325.7	10.10	168	5.06	
1029	35	487.22	18.55	7.96	266.6	10.36	161	2.67	
1041	40	487.24	18.47	7.96	267.1	10.27	161	2.39	
1059	45	487.32	17.82	7.95	268.2	9.94	160	1.87	0.58 L/m
1117	50	487.32	17.78	7.96	269.4	10.49	159	1.98	
1132	54	487.32	17.99	7.97	270.5	9.86	158	1.67	
Values Prior to Sampling									
1132	54	487.32	17.99	7.97	270.5	9.86	158	1.67	0.98 L/m

Field Alkalinity Result 105 Mg/L as CaCO3 Sample ID: GW0459

no Bubbles GW 0460

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

Site / SWMU No.: 106

Weather: sunny + windy

Field Crew: TN

Review Signature: [signature]

Well ID No.: KAFB 106078

Date: 2/27/12

Time: 09.00

Crew Signature: [signature]

Date Review: 9/28/2012

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -

Locked: (Yes) - No

Well ID Mark: (Yes) - No

Notes: VOC's Ø in WB Set pump @ 580'

CALCULATIONS

(A) Depth to Well Bottom	593.5	ft
(B) Pre-Purge Depth to Water	486.74	ft
(C) Water Column Height (A-B)	106.76	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	108.90	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)	124.95	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: InSitu 9500	R 22214	
Turbidity Meter: Hach 2100P	2821	
Pump: portable Bennett	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
2/27/12 944	0	486.74	16.93	7.15	235.4	4.09	241	11.0	1.48 L/min
1126	40	486.62	18.77	7.86	229.3	8.35	179	8.37	
1308	80	486.54	18.95	7.87	234.2	8.54	167	6.78	
1425	110	485.83	19.01	7.86	233.7	9.38	164	6.37	
1443	115	486.13	18.83	7.85	235.2	8.34	163	5.02	1.00 L/min
1501	120	485.81	18.83	7.91	234.6	10.04	161	4.72	
1519	125	486.21	18.86	7.89	233.3	9.03	162	6.25	
Values Prior to Sampling									
1519	125	486.21	18.86	7.89	233.3	9.03	162	6.25	1.00 L/min

Field Alkalinity Result 108 mg/L $CaCO_3$

Sample ID: GW0461

Bubbles None

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.: 106079
Site / SWMU No.: 106
Date: ~~2-20-12~~ 2-21-12
Weather: Sunny 50's
Time: 1309
Field Crew: DA, DM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/22/12

WELL OBSERVATIONS

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

Notes: VOCs 1.3 in BH

CALCULATIONS

(A) Depth to Well Bottom	509.46 ft
(B) Pre-Purge Depth to Water	491.85 ft
(C) Water Column Height (A-B)	17.61 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	17.97 gal
(F) Depth to Top of Screen	483.92 ft
(G) Depth to Bottom of Screen	503.92 ft
(H) Saturated Filter Pack Length (G –F, or B)	12.07 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07

(J) Filter Pack Volume (H x I)	12.92 gal
(K) Min Purge Volume (E + J)	31 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett on file	
Field Alkalinity: La Motte	3467 #9

PURGING INFORMATION

Description first water purged: Clear, Some 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
2-21-12 1346	0	491.85	17.11	7.23	769.7	5.52	168	0.93	2.2 L/min
1400	8	491.86	18.92	6.79	1093	0.07	-144	1.56	
1414	16	491.87	18.92	6.79	1092	0.04	-148	1.63	
1433	21	491.85	18.45	6.79	1096	0.08	-145	1.51	1.0 L/min
1452	26	491.85	18.45	6.79	1093	0.06	-147	1.31	
1511	31	491.85	18.58	6.79	1097	0.04	-148	1.36	

Values Prior to Sampling

1511	31	491.85	18.58	6.79	1097	0.04	-148	1.36	1.0 L/min

Field Alkalinity Result 242 mg/L as $CaCO_3$ Sample ID: GW0462

Bubbles lots of small bubbles

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.: 106080
Site / SWMU No.: 106
Date: 2-22-12
Weather: Sunny 40s
Time: 0816
Field Crew: DA, DN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/22/12

WELL OBSERVATIONS

Protective Casing / Vault: Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No
Notes: VOCs 0.6 in BH

CALCULATIONS

(A) Depth to Well Bottom	523.30 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	490.46 ft	(K) Min Purge Volume (E + J)	50 gal
(C) Water Column Height (A-B)	32.84 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	Parameter Meter: In Situ 9500	R27831
(E) One Well Casing Volume (C x D):	33.50 gal	Turbidity Meter: HACH 2100P	02818
(F) Depth to Top of Screen	504.40 ft	Pump: dedicated bennitt on file	
(G) Depth to Bottom of Screen	519.40 ft	Field Alkalinity: La Motte	3467#9
(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 strong 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
2-22-12 0838	0	490.46	10.56	7.12	860.4	8.53	214	3.08	2.8L/min
0905	20	490.47	18.86	6.80	1005	0.43	-143	0.87	
0926	35	490.49	18.92	6.81	1006	0.38	-147	1.19	
0945	40	490.48	18.08	6.82	1005	0.12	-152	1.25	1.0L/min
1004	45	490.47	18.03	6.83	1006	0.10	-151	1.31	
1023	50	490.47	18.27	6.83	1006	0.07	-155	1.45	
Values Prior to Sampling									
1023	50	490.47	18.27	6.83	1006	0.07	-155	1.45	1.0L/min

Field Alkalinity Result 248 mg/L as CaCO3 Sample ID: GW0463
Bubbles None

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.: 106081
Site / SWMU No.: 106
Date: ~~2-20-12~~ 2/21/12 DLO
Weather: Sunny 40s
Time: 0916
Field Crew: DA, DM
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/21/12

WELL OBSERVATIONS

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

Notes: VOCs 0.4 in BH

CALCULATIONS

(A) Depth to Well Bottom	594.76 ft
(B) Pre-Purge Depth to Water	491.64 ft
(C) Water Column Height (A-B)	103.12 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	105.19 gal
(F) Depth to Top of Screen	575.59 ft
(G) Depth to Bottom of Screen	589.39 ft
(H) Saturated Filter Pack Length (G –F, or B)	13.8 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07

(J) Filter Pack Volume (H x I)	14.77 gal
(K) Min Purge Volume (E + J)	120 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	Ø R22831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#9

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
DO 2-20-12 0929	Ø	491.64	14.65	6.92	282.6	8.63	211	0.53	3.08L/min
DLO 1012	35	491.66	19.07	7.80	275.3	3.71	136	0.48	
1055	70	491.67	19.20	7.78	274.9	4.02	132	0.24	
1138	105	491.68	19.16	7.79	279.9	4.20	134	0.36	
1157	110	491.66	18.36	7.82	274.3	4.25	135	0.28	1.0L/min
1216	115	491.65	18.09	7.82	273.6	4.30	137	0.33	
1235	120	491.65	18.12	7.84	274.1	4.21	136	0.27	
Values Prior to Sampling									
1235	120	491.65	18.12	7.84	274.1	4.21	136	0.27	1.0L/min

Field Alkalinity Result 112 mg/L as $CaCO_3$ Sample ID: GW0464

Bubbles None

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.: KAFB-106082
Site / SWMU No.: 106
Date: 1-26-12
Weather: Sunny 50's
Time: 1428
Field Crew: DM, DA
Crew Signature: Daniel Medina
Review Signature: [signature]
Date Review: 1-27-12

WELL OBSERVATIONS

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

Notes: VOC's 2.2ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	497.3	ft
(B) Pre-Purge Depth to Water	498.77	ft
(C) Water Column Height (A-B)	18.53	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	18.91	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)	13.23	ft
(I) Casing/Borehole Factor 4/10 = 1.2 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	14.16	gal
(K) Min Purge Volume (E + J)	34	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#8	

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
1-26-12/1439	0	478.77	16.85	8.03	489.6	7.52	42	0.55	3.0 L/min
1451	10	478.79	18.76	7.62	481.8	0.08	-161	3.51	
1502	19	478.80	18.76	7.62	483.6	0.05	-173	1.95	
1521	24	478.78	18.23	7.82	485.4	0.13	-176	1.44	1.0 L/min
1540	29	478.77	18.08	7.63	485.2	0.12	-176	1.53	
1559	34	478.77	18.06	7.62	48.	0.09	-178	1.23	
Values Prior to Sampling									
1559	34	478.77	18.06	7.62	483.3	0.09	-178	1.23	1.0 L/min

Field Alkalinity Result ~~8~~ 128 Mg/L as CaCO3 Sample ID: GW0465

Bubbles None present

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
Site / SWMU No.: 106
Weather: Sunny 50s
Field Crew: DM, DA
Review Signature: [signature]

Well ID No.: KAFB-106083
Date: 1-26-12
Time: ~~1420~~ 1157
Crew Signature: Daniel Medina
Date Review: 1-26-2012

WELL OBSERVATIONS

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

Notes: VOC's 0-5 ppm in BH.

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	478.81 ft	(K) Min Purge Volume (E + J)	54 gal
(C) Water Column Height (A-B)	36.84 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: In Situ 9500	R22831
(E) One Well Casing Volume (C x D):	37.57 gal	Turbidity Meter: Hach 2100P	02818
(F) Depth to Top of Screen	495.45 ft	Pump: Dedicated Bennette	On File
(G) Depth to Bottom of Screen	510.45 ft	Field Alkalinity: La Motte	3467#8
(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
1-26-12/1207	0	478.81	16.62	8.00	477.5	7.76	153	0.33	3.08L/min
1232	20	478.83	18.83	7.36	558.1	3.46	5	0.96	
1255	39	478.85	18.96	7.42	561.3	4.01	-33	0.85	
1314	44	478.83	18.60	7.42	560.1	3.58	-27	0.91	1.04/min
1333	49	478.82	18.55	7.42	562.8	3.21	-28	1.07	
1352	54	478.82	18.37	7.43	590.9	3.22	-25	0.74	
Values Prior to Sampling									
1352	54	478.82	18.37	7.43	590.9	3.22	-25	0.74	1.04/min

Field Alkalinity Result 86 Mg/L as $CaCO_3$ Sample ID: GW0466
Bubbles GW0467

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*

some air present
∴ pin head size

140705

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 50s
Field Crew: DA, DM
Review Signature: [signature]

Well ID No.: KAFB-106084
Date: 1-26-12
Time: 0822
Crew Signature: Daniel Medina
Date Review: 1-26-12

WELL OBSERVATIONS

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

Notes: VOC's 0.3 ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	585.75 ft
(B) Pre-Purge Depth to Water	478.21 ft
(C) Water Column Height (A-B)	107.54 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	109.69 gal
(F) Depth to Top of Screen	566 ft
(G) Depth to Bottom of Screen	581 ft
(H) Saturated Filter Pack Length (G -F, or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 6/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	126 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: Hach 2100P	02818
Pump: Dedicated Bennette	On File
Field Alkalinity: La Motte	3467 #8

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
1-26-12 0840	0	478.21	15.91	7.49	297.2	8.02	187	0.97	3.6L/min
0921	40	478.24	19.14	7.81	296.2	12.22	183	0.27	
1003	80	478.26	19.19	7.80	295.4	11.34	173	0.25	
1035	111	478.26	19.22	7.76	298.7	11.86	172	0.49	
1054	116	478.24	18.78	7.76	310.1	7.99	173	0.26	1.0L/min
1113	121	478.23	18.70	7.76	306.8	8.04	173	0.55	
1132	126	478.22	18.66	7.78	287.6	7.68	172	0.24	
							~~179~~		

Values Prior to Sampling

1132	126	478.22	18.66	7.78	287.6	7.68	172	0.24	1.0L/min

Field Alkalinity Result 116 Mg/L as CaCO3 Sample ID: GW0468

Bubbles - some bubbles present

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
Site / SWMU No.: 106
Weather: Cloudy 40°'s
Field Crew: DM, DA
Review Signature: [illegible]

Well ID No.: KAFB-106085
Date: 2-16-12
Time: 1236
Crew Signature: Daniel Medina
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOC's Ø ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	481.5 ft
(B) Pre-Purge Depth to Water	460.70 ft
(C) Water Column Height (A-B)	20.8 ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02
(E) One Well Casing Volume (C x D):	21.22 gal
(F) Depth to Top of Screen	446.5 ft
(G) Depth to Bottom of Screen	476.5 ft
(H) Saturated Filter Pack Length (G –F, or (B))	15.8 ft
(I) Casing/Borehole Factor 4/10 = 1.2 (5/10 = 1.07)	1.07

(J) Filter Pack Volume (H x I)	16.91 gal
(K) Min Purge Volume (E + J)	39 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: Hach 2100P	02818
Pump: Dedicated Brunette	On File
Field Alkalinity: La Motte	3467#9

PURGING INFORMATION

Description first water purged: Clear Some odor present

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
2-16-12/1243	0	460.70	17.48	7.74	515.0	7.66	122	0.57	.3 L/min
1259	12	460.70	18.91	7.39	530.1	0.11	-19	1.95	
1315	24	460.72	18.91	7.38	536.1	0.06	-44	1.68	
1334	29	460.73	18.74	7.37	536.9	0.14	-46	0.73	1.0 L/min
1353	34	460.71	18.73	7.38	536.3	0.13	-48	0.63	
1412	39	460.72	18.68	7.38	540.0	0.11	-56	0.48	

Values Prior to Sampling

1412	39	460.72	18.68	7.38	540.0	0.11	-56	0.48	1.0 L/min

Field Alkalinity Result 145 Mg/L as CaCO3 Sample ID: GW0469

Bubbles none present

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
Site / SWMU No.: 106
Weather: Partly Cloudy 40's
Field Crew: DM, DA
Review Signature: [signature]

Well ID No.: KAFB-106086
Date: 2-16-12
Time: 1000
Crew Signature: Daniel Medina
Date Review: 2-16-2012

WELL OBSERVATIONS

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

Notes: VOC's ~~0.0ppm~~ 0.1 ppm in BH.

CALCULATIONS

(A) Depth to Well Bottom	496	ft
(B) Pre-Purge Depth to Water	461.10	ft
(C) Water Column Height (A-B)	34.9	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	35.60	gal
(F) Depth to Top of Screen	476	ft
(G) Depth to Bottom of Screen	491	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)	52	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467#9	

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
2-16-12/1016	0	461.10	15.92	7.08	409.3	8.11	150	1.02	3.5L/min
1038	20	461.13	18.88	7.53	381.4	7.50	157	0.88	
1057	37	461.12	18.89	7.52	382.4	7.48	133	0.88	
1116	42	461.17	18.43	7.54	383.6	6.30	115	0.36	1.0L/min
1135	47	461.17	18.32	7.53	386.6	5.92	111	0.22	
1154	52	461.16	18.33	7.54	386.1	5.88	106	0.47	

Values Prior to Sampling

1154	52	461.16	18.33	7.54	386.1	5.88	106	0.47	1.0L/min

Field Alkalinity Result 110. Mg/L as Ca CO_3 Sample ID: GW0470 REG, MS, MSD

Bubbles none present

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
Site / SWMU No.: 106
Weather: sunny 40's
Field Crew: TN, PO
Review Signature: [signature]

Well ID No.: KAFB-106087
Date: 2-14-12
Time: 1330
Crew Signature: [signature]
Date Review: 2-15-2012

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOC's 0 ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	487	ft
(B) Pre-Purge Depth to Water	459.89	ft
(C) Water Column Height (A-B)	27.11	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	27.65	gal
(F) Depth to Top of Screen	452	ft
(G) Depth to Bottom of Screen	482	ft
(H) Saturated Filter Pack Length (G –F, or B)	22.11	ft
(I) Casing/~~Borehole~~ Factor 4/10 = 1.2, (5/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	23.66	gal
(K) Min Purge Volume (E + J)	51.31	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: InSitu 9500	R22831	
Turbidity Meter: Hach 2100P	02818	
Pump: Dedicated Bennette	On File	
Field Alkalinity: La Motte	3467 #9	

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
1342	0	459.89	18.72	7.48	271.9	7.48	196	2.13	3.6 gal/min
1403	20	459.96	19.25	7.76	271.3	22.72	196	1.01	
1414	30	459.96	19.23	7.81	270.9	22.80	191	0.75	
1420	35	459.95	19.23	7.80	271.4	22.13	188	0.73	
1438	40	459.88	18.92	7.78	271.6	11.66	187	0.76	1.00 gal/min
1456	45	459.88	18.80	7.77	272.7	11.84	186	0.47	
1522	52	459.88	18.67	7.78	271.7	11.83	185	0.67	
Values Prior to Sampling									
1522	52	459.88	18.67	7.78	271.7	11.83	185	0.67	1.00 gal/min

Field Alkalinity Result 120 Mg/L as $CaCO_3$ Sample ID: GW0471

Bubbles

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106088
Date: 1/26/12
Time: 0800
Crew Signature: [signature]
Date Review: 1-26-12

WELL OBSERVATIONS

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

Notes: VOCs ∅ in WB

CALCULATIONS

(A) Depth to Well Bottom	485	ft
(B) Pre-Purge Depth to Water	468.47	ft
(C) Water Column Height (A-B)	16.53	ft
(D) Casing Factor: 4"=0.65 (8"=1.02)		
(E) One Well Casing Volume (C x D):	16.86	gal
(F) Depth to Top of Screen	460	ft
(G) Depth to Bottom of Screen	480	ft
(H) Saturated Filter Pack Length (G –F, or B)	11.53	ft
(I) Casing/Borehole Factor 4/10 = 1.2, (8/10 = 1.07)	12.33	

(J) Filter Pack Volume (H x I)	12.33	gal
(K) Min Purge Volume (E + J)	29	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: 9500 Insitu	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: La Motte	3467 #7	

PURGING INFORMATION

Description first water purged: light Brown

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
1/26/12 0836	0	468.47	16.66	6.64	369.3	4.66	21	96.5	2.64 L/m
0850	10	468.53	18.42	7.57	370.8	2.89	13	8.48	
0904	20	468.53	18.46	7.63	382.7	2.86	25	2.71	1.0 L/m
0922	25	468.46	18.12	7.67	383.6	2.77	36	1.40	
0937	29	468.46	18.03	7.68	382.9	2.89	49	0.94	
Values Prior to Sampling									
0937	29	468.46	18.03	7.68	382.9	2.89	49	0.94	1.0 L/m

Field Alkalinity Result 144 Mg/L as $CaCO_3$ Sample ID: GW0472

no Bubbles none present

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TH
Review Signature: [signature]

Well ID No.: 106089
Date: 1/26/12
Time: 1445
Crew Signature: [signature]
Date Review: 1-27-2012

WELL OBSERVATIONS

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

Notes: Voes @ in WB

CALCULATIONS

(A) Depth to Well Bottom	501.5	ft
(B) Pre-Purge Depth to Water	468.12	ft
(C) Water Column Height (A-B)	33.38	ft
(D) Casing Factor: 4"=0.65 (5"=1.02)		
(E) One Well Casing Volume (C x D):	34	gal
(F) Depth to Top of Screen	496.5	ft
(G) Depth to Bottom of Screen	481.5	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)	50	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter 9500 Insitu	R22214	
Turbidity Meter Hach	2821	
Pump Redlatch	Bennett	
Field Alkalinity Cole Parmer	346777	

PURGING INFORMATION

Description first water purged: Light brown

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
1/26/12 1456	0	468.12	16.71	7.14	352.7	8.97	68	1.31	4.0 L/m
1517	20	468.22	18.01	7.66	347.9	10.16	86	4.46	
1526	30	468.21	18.63	7.64	346.7	10.60	90	1.08	
1531	35	468.21	18.62	7.66	348.4	10.32	91	.86	
1544	40	468.10	18.03	7.69	346.9	8.34	101	1.98	1.0 L/min
1607	45	468.10	17.93	7.71	352.7	8.89	108	1.18	
1625	50	468.10	17.80	7.72	350.4	8.88	113	.73	
Values Prior to Sampling									
1625	50	468.10	17.80	7.72	350.4	8.88	113	.73	1.0 L/m

Field Alkalinity Result 146 Mg/L as CaCO3 Sample ID: GW0873

Bubbles GW0874 High effervescence

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: AT, TN
Review Signature: [signature]

Well ID No.: 106090
Date: 1/26/12
Time: 1044
Crew Signature: [signature]
Date Review: 1-26-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	575 ft
(B) Pre-Purge Depth to Water	467.05 ft
(C) Water Column Height (A-B)	107.95 ft
(D) Casing Factor: 4"=0.65, 5"=1.02	
(E) One Well Casing Volume (C x D):	113 gal
(F) Depth to Top of Screen	555 ft
(G) Depth to Bottom of Screen	570 ft
(H) Saturated Filter Pack Length (G –F, or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	129.3 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Dedicated Bennett	on file
Field Alkalinity: La Motte	3967 #7

PURGING INFORMATION

Description first water purged: light brown

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
1/26/12 1059	0	467.05	18.26	7.22	295.2	11.54	117	1.19	3.68 L/m
1030	30	467.09	19.01	7.67	295.3	14.52	102	3.40	
1201	60	467.09	18.89	7.70	299.2	16.28	115	5.06	
1232	90	467.06	18.99	7.68	299.5	16.52	122	3.51	
1253	110	467.05	16.99	7.69	298.7	17.03	125	3.43	
1311 ~~1311~~ AT	115	466.95	18.41	7.77	290.9	10.47	129	0.98	.8 L/m High Effervescence
1329 ~~1329~~ AT	120	466.95	17.83	7.76	292.4	10.54	133	0.94	
1403 ~~1403~~ AT	129	466.90	17.22	7.78	294.1	10.68	138	0.94	
Values Prior to Sampling									
1403	129	466.90	17.22	7.78	294.1	10.68	138	0.94	

Field Alkalinity Result 120 mg/L as CaCO3 Sample ID: GW0475

Bubbles light effervescence

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.: KAFB106091
Site / SWMU No.: 106
Date: 2/20/12
Weather: sunny windy 30's
Time: 1330
Field Crew: AT, TN
Crew Signature: TC Naff
Review Signature: TC
Date Review: 2/21/12

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOCs ∅ in BH

CALCULATIONS

(A) Depth to Well Bottom	(TD) 479.00 ~~458.16~~ ft	(J) Filter Pack Volume (H x I)	16.94 gal
(B) Pre-Purge Depth to Water	458.16 ft	(K) Min Purge Volume (E + J)	39 gal
(C) Water Column Height (A-B)	20.84 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter InSitu 9500	R22214
(E) One Well Casing Volume (C x D):	21.25 gal	Turbidity Meter Hach	2100P
(F) Depth to Top of Screen	454 ft	Pump dedicated Bennett	on file
(G) Depth to Bottom of Screen	474 ft	Field Alkalinity LaMotte	3467 #7
(H) Saturated Filter Pack Length (G –F, or B)	15.84 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 8/10 = 1.07	1.07		

PURGING INFORMATION

Description first water purged: clear, slight 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
2/20/12 1358	0	458.16	14.25	7.41	417.4	7.22	160	1.13	2.68 L/m
1412	10	458.22	18.62	7.73	341.1	9.22	141	0.72	
1426	20	458.23	18.66	7.73	355.2	8.69	140	0.61	
1433	25	458.23	18.65	7.73	365.2	8.35	139	0.54	
1451	30	458.19	18.99	7.78	364.0	7.72	138	0.45	1.02 L/m
1509	35	458.18	18.98	7.78	363.8	7.64	139	0.65	
1527	39	458.18	18.16	7.78	370.3	7.71	141	0.47	
Values Prior to Sampling									
1527	39	458.18	18.16	7.78	370.3	7.71	141	0.47	1.02 L/m

Field Alkalinity Result 144 mg/L $CaCO_3$
Sample ID: GW0476
Bubbles used not

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.: 106092
Site / SWMU No.: 806
Date: 2/21/12
Weather: Sunny
Time: 1345
Field Crew: AT, TN
Crew Signature: Antonio Jolle
Review Signature: [signature]
Date Review: 2/22/12

WELL OBSERVATIONS

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

Notes: VOC's Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	493.68	ft
(B) Pre-Purge Depth to Water	458.30	ft
(C) Water Column Height (A-B)	35.38	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	36 487 AT	gal
(F) Depth to Top of Screen	474	ft
(G) Depth to Bottom of Screen	487	ft
(H) Saturated Filter Pack Length (G –F, or B)	13	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	1.07	

(J) Filter Pack Volume (H x I)	13.91	gal
(K) Min Purge Volume (E + J)	50	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: La Motte	3467 #7	

PURGING INFORMATION

Description first water purged: Clear, slight 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
2/21/12 1410	Ø	458.30	18.26	7.53	414.2	8.30	192	~~11.5~~ 11.5	3.60 L/m
1431	20	458.38	18.61	7.48	435.9	1.77	65	2.09	
1447	35	458.38	18.59	7.56	434.0	3.32	73	0.97	
1505	40	458.32	18.35	7.62	436.2	4.60	104	0.89	1.0 L/m
1523	45	458.31	18.47	7.59	439.0	3.58	107	0.72	
1541	50	458.31	17.54	7.59	442.2	3.51	113	0.72	
Values Prior to Sampling									
1541	50	458.31	17.54	7.59	442.2	3.51	113	0.72	1.0 L/m

Field Alkalinity Result 124 mg/L as CaCO3 Sample ID: GW0477

Bubbles ☒ YES ☐ NO Slight effervescence

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.: 106093
Site / SWMU No.: 106
Date: 2/20/12
Weather: Sunny windy
Time: 0815
Field Crew: AT, JN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/20/12

WELL OBSERVATIONS

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

Notes: VOCs ∅ in UB

CALCULATIONS

(A) Depth to Well Bottom	563.23	ft
(B) Pre-Purge Depth to Water	458.34	ft
(C) Water Column Height (A-B)	104.89	ft
(D) Casing Factor: 4"=0.65 5"=1.03	1.02	
(E) One Well Casing Volume (C x D):	107	gal
(F) Depth to Top of Screen	544	ft
(G) Depth to Bottom of Screen	557	ft
(H) Saturated Filter Pack Length (G-F, or B)	13	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	13.92	gal
(K) Min Purge Volume (E + J)	121	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Dedicated Bennett	on file	
Field Alkalinity: La Motte	3467 #4	

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
2/20/12 0914	∅	458.34	17.97	7.07	281.2	7.76	182	1.17	3.2 L/m
1001	40	458.44	18.64	7.75	272.8	14.66	139	0.84	
1048	80	458.45	18.81	7.81	273.2	15.53	141	0.50	
1118	105	458.45	18.82	7.83	273.5	15.80	141	0.64	
1136	110	458.33	16.90	7.88	276.2	10.19	144	0.71	1.0 L/m
1154	115	458.35	16.19	7.74	271.9	11.46	152	0.64	
1217	121	458.33	16.19	7.74	271.9	11.46	152	0.54	
Values Prior to Sampling									
1217	121	458.33	16.19	7.74	271.9	11.46	152	0.54	1.0 L/m

Field Alkalinity Result 121 mg/L as CaCO3 Sample ID: GW0478

Bubbles ☒ yes # no High Effervescent

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.: 106094
Site / SWMU No.: 106
Date: 2/7/12
Weather: Cloudy
Time: 1315
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/8/12

WELL OBSERVATIONS

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

Notes: VOC's in WB Set pump @ 474'

CALCULATIONS

(A) Depth to Well Bottom	509.2	ft
(B) Pre-Purge Depth to Water	487.79	ft
(C) Water Column Height (A-B)	21.41	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	22.43	gal
(F) Depth to Top of Screen	484.2	ft
(G) Depth to Bottom of Screen	504.2	ft
(H) Saturated Filter Pack Length (G – F, or B)	16.41	ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	1.07	

(J) Filter Pack Volume (H x I)	17.48	gal
(K) Min Purge Volume (E + J)	40	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Aach	2821	
Pump: dedicated Bennett	on file	
Field Alkalinity: LaMotte	3467-#7	

PURGING INFORMATION

Description first water purged: light Grey, has an 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
2/7/12 1356	0	487.79	15.42	7.28	323.1	5.00	151	8.98	1.76 L/m
1439	20	487.81	18.73	7.50	377.1	3.18	-183	6.77	
1450	25	487.83	18.69	7.54	386.5	3.58	-183	5.19	
1508	30	487.81	18.46	7.52	392.9	3.14	-184	4.24	1.0 L/m
1526	35	487.81	18.55	7.54	398.6	3.59	-178	4.16	
1544	40	487.81	18.56	7.55	397.4	3.68	-175	4.48	
Values Prior to Sampling									
1544	40	487.81	18.56	7.55	397.4	3.68	-175	4.48	1.0 L/m

Field Alkalinity Result 164 mg/L as $CaCO_3$ Sample ID: GW0479

light Bubbles

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.: 106095
Site / SWMU No.: 106
Date: 2/10/12
Weather: Sunny
Time: 0800
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/10/12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB, set pump @ 510'

CALCULATIONS

(A) Depth to Well Bottom	523.75 ft
(B) Pre-Purge Depth to Water	487.34 ft
(C) Water Column Height (A-B)	36.41 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	37.13 gal
(F) Depth to Top of Screen	503.75 ft
(G) Depth to Bottom of Screen	518.75 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)	53.18 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Portable Bennett	on file
Field Alkalinity: LaMotte	3467 #7

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
2/10/12 0925	Ø	487.34	15.29	7.04	314.2	7.80	203	1.76	1.60L/m
1012	20	487.32	18.82	7.71	290.6	11.92	164	3.18	
1059	40	487.33	18.78	7.68	296.1	11.86	160	2.64	
1117	45	487.31	18.48	7.67	299.6	11.03	159	2.56	1.0L/m
1135	50	487.30	18.65	7.67	295.5	11.17	160	2.12	
1147	53	487.29	18.70	7.67	297.9	10.86	159	1.61	
Values Prior to Sampling									
1147	53	487.29	18.70	7.67	297.9	10.86	159	1.61	1.0L/m

Field Alkalinity Result 129 mg/L as CaCO3 Sample ID: GW0480

No Bubbles

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.: 106096
Site / SWMU No.: 106
Date: 2/14/12
Weather: Cloudy
Time: 0800
Field Crew: AT, TN
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2-15-2012

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB, set pump @ 583

CALCULATIONS

(A) Depth to Well Bottom	596.3	ft
(B) Pre-Purge Depth to Water	487.50	ft
(C) Water Column Height (A-B)	108.8	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	111	gal
(F) Depth to Top of Screen	576.3	ft
(G) Depth to Bottom of Screen	591.3	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	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22214	
Turbidity Meter: Hach	2821	
Pump: Portable Kennett	on file	
Field Alkalinity: La Motte	3467 #7	

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
2/14/12 0927	Ø	487.50	13.30	7.22	274.6	6.50	224	2.78	1.56 L/m
1104	40	487.41	18.60	7.32	275.0	11.73	165	1.25	
1241	80	487.35	18.66	7.83	272.7	12.56	163	1.06	
1353	110	487.32	18.79	7.85	273.4	13.45	156	1.34	
1411	115	487.31	18.30	7.83	273.5	12.42	156	1.13	1.0 L/m
1429	120	487.30	18.43	7.79	270.9	12.59	163	1.00	
1456	127	487.31	18.41	7.88	273.0	12.67	162	1.05	
Values Prior to Sampling									
1456	127	487.31	18.41	7.88	273.0	12.67	162	1.05	1.0 L/m

Field Alkalinity Result 111 Mg/L as CaCO3 Sample ID: GW0481

light Bubbles

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.: 106013
Site / SWMU No.: 106
Date: 3/27/12
Weather: Sunny
Time: 1220
Field Crew: MT, TO
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 3/27/2012

WELL OBSERVATIONS

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

Notes: VOC's ∅ in BH, Set pump @ 498'

CALCULATIONS

(A) Depth to Well Bottom	516.5	ft
(B) Pre-Purge Depth to Water	492.42	ft
(C) Water Column Height (A-B)	24.08	ft
(D) Casing Factor: 4"=0.65 5"=1.02	.65	
(E) One Well Casing Volume (C x D):	15.7	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)	19.08	ft
(I) Casing/~~Borehole~~ Factor 4'10 = 1.2 5/10 = 1.07	1.07	

(J) Filter Pack Volume (H x I)	20.4	gal
(K) Min Purge Volume (E + J)	36	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 4500	R22831	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: Ca Mott	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
3/27/12 1252	∅	492.42	21.33	7.46	311.9	8.96	36	16.3	1.60 L/m
1329	20	492.45	19.27	7.69	315.3	7.00	71	6.75	
1347	25	492.43	19.27	7.72	319.0	6.80	68	5.39	1.16 L/m
1405	30	492.42	19.26	7.74	320.3	6.79	78	3.33	
1427	36	492.42	19.26	7.75	319.6	6.71	83	2.63	
Values Prior to Sampling									
1427	36	492.42	19.26	7.75	319.6	6.71	83	2.63	1.16 L/m

Field Alkalinity Result 116 mg/L as $CaCO_3$ Sample ID: GW0482

NO Bubbles

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.: 106097
Site / SWMU No.: 106
Date: 2-7-12
Weather: Sunny 40s
Time: 1106
Field Crew: DA
Crew Signature: [signature]
Review Signature:
Date Review:

WELL OBSERVATIONS

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

Notes: VOCs in BH

CALCULATIONS

(A) Depth to Well Bottom	526	ft
(B) Pre-Purge Depth to Water	490.16	ft
(C) Water Column Height (A-B)	35.84	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	36.56	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	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: Dedicated Bennett	on file	
Field Alkalinity: La Motte	346748	

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
2-7-12 1113	0	490.16	16.32	7.63	408.3	8.06	181	0.76	3.12L/min
1138	20	490.18	18.85	7.80	288.9	8.35	35	0.84	
1200	38	490.20	18.94	7.81	296.0	8.66	68	0.84	
1219	43	490.19	18.71	7.81	295.9	6.89	85	0.61	1.0L/min
1238	48	490.18	18.57	7.80	297.9	7.07	101	0.73	
1257	53	490.17	18.50	7.82	303.0	7.12	110	0.81	
Values Prior to Sampling									
1257	53	490.17	18.50	7.82	303.0	7.12	110	0.81	1.0L/min

Field Alkalinity Result 116 mg/L as $CaCO_3$ Sample ID: GW0483

Bubbles Lots of pin head size bubbles

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: 7-2-12
Weather: Sunny 30s
Time: 0759
Field Crew: NA
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 8/9/2012

WELL OBSERVATIONS

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

Notes: VOCs 4.4 in BH

CALCULATIONS

(A) Depth to Well Bottom	551.1	ft
(B) Pre-Purge Depth to Water	490.31	ft
(C) Water Column Height (A-B)	60.79	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	62.1	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)	79	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In Situ 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	346748	

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 3.4
7-2-12 0828	0	490.31	17.64	6.89	265.4	7.81	212	0.66	4 min
0906	34	490.33	18.88	7.84	260.8	7.84	192	0.52	
0940	64	490.35	18.89	7.84	259.9	ER	186	0.45	
0959 ~~0959~~	69	490.34	18.29	7.84	257.6	10.19?	184	0.49	1.0L/min
~~09~~ 1018	74	490.32	18.05	7.85	258.7	ER	182	0.26	
1037	79	490.32	18.20	7.87	260.5	ER	181	0.46	

Values Prior to Sampling

1037	79	490.32	18.20	7.87	260.5	ER	181	0.46	1.0L/min

Field Alkalinity Result 108 mg/L as CaCO3 Sample ID: GW0484 & GW0485

Bubbles pin head size bubbles present.

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
Site / SWMU No.: 106
Weather: Sunny 50s
Field Crew: DAV
Review Signature: [illegible]

Well ID No.: 106004
Date: 2-29-12
Time: 1108
Crew Signature: [illegible]
Date Review: 2-29-2012

WELL OBSERVATIONS

Protective Casing / Vault - Intact - Damaged
Locked: Yes - No
Well ID Mark: Yes - No
Notes: VOCs ∅ in BH

CALCULATIONS

(A) Depth to Well Bottom	510 ft	(J) Filter Pack Volume (H x I)	26.1 gal
(B) Pre-Purge Depth to Water	487.28 ft	(K) Min Purge Volume (E + J)	41 gal
(C) Water Column Height (A-B)	22.72 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 6"=1.02	0.65	Parameter Meter: YSI Sita 9500	R22831
(E) One Well Casing Volume (C x D):	14.77 gal	Turbidity Meter: HACH 2100P	02818
(F) Depth to Top of Screen	484 ft	Pump: dedicated bennett	on file
(G) Depth to Bottom of Screen	509 ft	Field Alkalinity: La Motte	5467#9
(H) Saturated Filter Pack Length (G - F, or B)	21.72 ft		
(I) Casing/Borehole Factor 4/10 = 1.2 5/10 = 1.07, _____	1.2		

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
2-29-12 1127	∅	487.28	17.58	8.04	487.4	7.70	144	3.19	2.2 L/min
1155	16	487.30	18.73	7.68	461.7	8.97	157	1.18	
1212	26	487.31	18.87	7.68	470.9	9.11	160	0.98	
1231	31	487.30	18.61	7.65	483.2	8.36	164	0.74	
1250	36	487.29	18.64	7.66	485.5	8.31	166	0.61	
1309	41	487.29	18.70	7.65	485.2	8.38	164	0.73	
Values Prior to Sampling									
1309	41	487.29	18.70	7.65	485.2	8.38	164	0.73	2 L/min

Field Alkalinity Result 108 mg/L as CaCO3 Sample ID: GW0486
Bubbles None

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.: 106099
Site / SWMU No.: 106
Date: 2-29-12
Weather: Sunny 40s
Time: 0756
Field Crew: DA
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 2/29/2012

WELL OBSERVATIONS

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

Notes: 100.50 in BH

CALCULATIONS

(A) Depth to Well Bottom	521	ft	(J) Filter Pack Volume (H x I)	16.05	gal
(B) Pre-Purge Depth to Water	484.37	ft	(K) Min Purge Volume (E + J)	54	gal
(C) Water Column Height (A-B)	36.63	ft	**EQUIPMENT / MODEL**	**ID NUMBER**	
(D) Casing Factor: 4"=0.65 5"=1.02	1.02		Parameter Meter: Sonde 9500	R72831	
(E) One Well Casing Volume (C x D):	37.37	gal	Turbidity Meter: HACH 2100P	02818	
(F) Depth to Top of Screen	501	ft	Pump: dedicated bennett	on file	
(G) Depth to Bottom of Screen	516	ft	Field Alkalinity: La Motte	346749	
(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:

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
2-29-12 0833	0	484.37	15.57	6.83	427.5	7.93	213	0.73	2.2 gal/min
0907	20	484.39	17.95	7.39	411.6	7.39	182	0.81	
0939	39	484.40	18.90	7.77	391.1	9.16	153	0.69	
0958	44	484.39	18.46	7.75	399.9	7.99	158	0.56	1.0 L/min
1017	49	484.38	18.40	7.76	421.3	8.11	161	0.87	
1036	54	484.38	18.36	7.77	411.3	8.00	163	0.62	
Values Prior to Sampling									
1036	54	484.38	18.36	7.77	411.3	8.00	163	0.62	1.0 L/min

Field Alkalinity Result 118 mg/L as $CaCO_3$ Sample ID: GW0487

Bubbles some tiny bubbles

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
Site / SWMU No.: 106
Weather: Windy 30s
Field Crew: DA
Review Signature:

Well ID No.: 106100
Date: 2-28-12
Time: 0836
Crew Signature:
Date Review: 2/28/2012

WELL OBSERVATIONS

Protective Casing / Vault: - (Intact) - Damaged -
Locked: (Yes) - No
Well ID Mark: (Yes) - No
Notes: VOCs ∅ in BH

CALCULATIONS

(A) Depth to Well Bottom	546	ft
(B) Pre-Purge Depth to Water	484.06	ft
(C) Water Column Height (A-B)	61.94	ft
(D) Casing Factor: 4"=0.65 (8"=1.02)	1.02	
(E) One Well Casing Volume (C x D):	63.18	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, (8/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	80	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: In-Situ 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: La Motte	34674 9	

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
2-28-12 0905	0	484.06	16.04	7.00	333.6	7.62	180	5.26	2.2 L/min
1006	35	484.08	18.63	7.78	325.5	ER	134	2.14	
1058	65	484.11	18.77	7.83	324.3	ER	134	1.89	
1117	70	484.09	18.26	7.80	325.3	ER	135	1.51	1.0 L/min
1136	75	484.08	18.36	7.81	316.7	ER	136	1.18	
1155	80	484.07	18.13	7.81	331.3	ER	138	1.39	
Values Prior to Sampling									
1155	80	484.07	18.13	7.81	331.3	ER	138	1.39	1.0 L/min

Field Alkalinity Result 124 mg/L as $CaCO_3$ Sample ID: GW0488

Bubbles Rate of tiny bubbler

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.: 106003
Site / SWMU No.: 106
Date: 2-6-17
Weather: Sunny 50s
Time: 1146
Field Crew: DA
Crew Signature: [signature]
Review Signature:
Date Review:

WELL OBSERVATIONS

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

Notes: VOCs 0.1 in BH. Casing lid needs welding.

CALCULATIONS

(A) Depth to Well Bottom	503.00 ft	(J) Filter Pack Volume (H x I)	22.98 gal
(B) Pre-Purge Depth to Water	481.85 ft	(K) Min Purge Volume (E + J)	37 gal
(C) Water Column Height (A-B)	21.15 ft	**EQUIPMENT / MODEL**	**ID NUMBER**
(D) Casing Factor: 4"=0.65 5"=1.02	.65	Parameter Meter: YSI 556	R72831
(E) One Well Casing Volume (C x D):	13.75 gal	Turbidity Meter: HACH 2100P	07818
(F) Depth to Top of Screen	476 ft	Pump: dedicated bennett	on file
(G) Depth to Bottom of Screen	501 ft	Field Alkalinity: La Motte	346748
(H) Saturated Filter Pack Length (G -F, or B)	19.15 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
2-6-17 1205	0	481.85	16.23	8.10	760.1	8.16	168	1.27	2.12 L/min
1227	12	481.87	18.69	7.75	777.0	7.83	162	0.67	
1245	22	481.89	18.65	7.74	785.8	7.83	162	0.59	
1304	27	481.87	18.53	7.75	787.7	7.83	163	0.41	1.0 L/min
1323	32	481.86	18.27	7.75	788.5	7.82	166	0.57	
1342	37	481.86	18.33	7.75	789.3	7.88	167	0.73	
Values Prior to Sampling									
1342	37	481.86	18.33	7.75	789.3	7.88	167	0.73	1.0 L/min

Field Alkalinity Result 84 mg/L as $CaCO_3$ Sample ID: GW0489

Bubbles none

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.: 106101
Site / SWMU No.: 106
Date: 2-7-12
Weather: Sunny 40's
Time: 1439
Field Crew: DA DM
Crew Signature: DMA
Review Signature: [signature]
Date Review: 2/8/12

WELL OBSERVATIONS

Protective Casing / Vault: - Intact - Damaged -
Locked: Yes - No
Well ID Mark: Yes - No
Notes: VOCs Ø in BH

CALCULATIONS

(A) Depth to Well Bottom	515.06	ft
(B) Pre-Purge Depth to Water	482.91	ft
(C) Water Column Height (A-B)	32.15	ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02	
(E) One Well Casing Volume (C x D):	32.80	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)	16.35	gal
(K) Min Purge Volume (E + J)	50	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Hydrolite 9500	R22831	
Turbidity Meter: HACH 2100P	02818	
Pump: dedicated bennett	on file	
Field Alkalinity: LaMotte	3467#8	

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
2-7-12 1451	Ø	482.91	16.81	7.89	796.7	7.92	131	1.14	4.0 L/min
1510	20	482.94	18.91	7.74	736.2	9.74	117	1.19	
1524	35	482.96	18.91	7.72	718.4	9.92	132	0.50	
1543	40	482.94	18.19	7.73	716.1	8.21	140	0.66	1.0 L/min
1602	45	482.92	18.08	7.73	730.7	8.32	146	0.60	
1621	50	482.92	18.12	7.73	722.1	8.34	151	0.54	
Values Prior to Sampling									
1621	50	482.92	18.12	7.73	722.1	8.34	151	0.54	1.0 L/min

Field Alkalinity Result 104 mg/Las. $CaCO_3$ Sample ID: GW0490, 0490MS + 0490MSD

Bubbles None

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: 2-6-12
Weather: Partly cloudy 40°
Time: 0825
Field Crew: DA, DM
Crew Signature: [illegible]
Review Signature:
Date Review:

WELL OBSERVATIONS

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

Notes: VOCs ND in BH

CALCULATIONS

(A) Depth to Well Bottom	541.21 ~~534.84~~ ft
(B) Pre-Purge Depth to Water	482.09 ft
(C) Water Column Height (A-B)	59.11 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	60.30 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 –F, or B)	13.76 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 8/10 = 1.07	1.07

(J) Filter Pack Volume (H x I)	14.73 gal
(K) Min Purge Volume (E + J)	76 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: YSI 556 MPS	R27831
Turbidity Meter: HACH 2100P	02818
Pump: dedicated bennett	on file
Field Alkalinity: La Motte	3467#8

PURGING INFORMATION

Description first water purged: 482.09 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
2-6-12 0903	Ø	~~534.84~~ 482.09	14.82	7.13	303.6	8.42	217	2.50	3.2 L/min
0940	31	482.11	18.88	7.81	286.1	4.87	182	1.13	
1016	61	482.13	18.95	7.83	286.3	4.90	177	1.06	
1035	66	482.11	18.19	7.85	285.9	4.86	175	0.26	1.0 L/min
1054	71	482.10	18.10	7.86	285.7	4.86	174	0.21	
1113	76	482.10	18.24	7.86	285.9	4.88	173	0.13	
Values Prior to Sampling									
1113	76	482.10	18.24	7.86	285.9	4.88	173	0.13	1.0 L/min

Field Alkalinity Result 108 mg/L as $CaCO_3$ Sample ID: GW0491 + GW0492

Bubbles None

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.: 106023
Site / SWMU No.: 106
Date: 1/25/12
Weather: Sunny
Time: 0800
Field Crew: AT, TN
Crew Signature: [illegible]
Review Signature: [illegible]
Date Review: 1-26-12

WELL OBSERVATIONS

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

Notes: Vocs Ø in WB

CALCULATIONS

(A) Depth to Well Bottom	503 ft	(J) Filter Pack Volume (H x I)	~~49.61~~ AT 30 gal
(B) Pre-Purge Depth to Water	472.82 ft	(K) Min Purge Volume (E + J)	49.61 gal
(C) Water Column Height (A-B)	30.18 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 5"=1.02	0.165	Parameter Meter: 9500 Insitu	R22214
(E) One Well Casing Volume (C x D):	19.61 gal	Turbidity Meter: HACH	2821
(F) Depth to Top of Screen	473 ft	Pump: dedicated	on file
(G) Depth to Bottom of Screen	498 ft	Field Alkalinity: LaMotte	3467 #7
(H) Saturated Filter Pack Length (G -F, or B)	25 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07, _____	30 1.2		

PURGING INFORMATION

Description first water purged: Dark Brown @ first, then cleared up

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
1/25/12 0915	Ø	472.82	14.79	7.03	310.4	9.05	10	206	~~.34 L/m~~ AT ~~.4 L/m~~ .4 L/m
1224	20	NM	17.43	7.88	306.4	8.53	136	.42	.54 L/m
1334	30	NM	16.92	7.88	313.4	8.47	146	1.51	
1444	40	NM	17.09	7.90	302.2	8.46	154	.46	
1519	45	NM	16.89	7.89	309.7	8.38	157	.43	
1547	49	NM	17.10	7.89	302.1	8.85	159	.41	
Values Prior to Sampling									
1547	49	NM	17.10	7.89	302.1	8.85	159	.41	.54 L/m

Field Alkalinity Result 121 mg/L as CaCO3 Sample ID: GW0493

NA bubbles none present

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
Site / SWMU No.: 106
Weather: Sunny
Field Crew: DM, DR
Review Signature: [illegible]

Well ID No.: KAFB-106103
Date: 1-27-12
Time: 1135
Crew Signature: Daniel Medina
Date Review: 1-27-12

WELL OBSERVATIONS

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

Notes: VOC'S 0.0 ppm in BH

CALCULATIONS

(A) Depth to Well Bottom	505.2 ft	(J) Filter Pack Volume (H x I)	16.05 gal
(B) Pre-Purge Depth to Water	473.35 ft	(K) Min Purge Volume (E + J)	49 gal
(C) Water Column Height (A-B)	31.85 ft	EQUIPMENT / MODEL	ID NUMBER
(D) Casing Factor: 4"=0.65 (5"=1.02)	1.02	Parameter Meter: In Situ 9500	R22851
(E) One Well Casing Volume (C x D):	32.49 gal	Turbidity Meter: Hach 2100P	02818
(F) Depth to Top of Screen	485 ft	Pump: Dedicated Bennette	On File
(G) Depth to Bottom of Screen	500 ft	Field Alkalinity: La Motte	3467 #8
(H) Saturated Filter Pack Length (G - F, or B)	15 ft		
(I) Casing/Borehole Factor 4/10 = 1.2, (6/10 = 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
1-27-12/1204	0	473.35	18.02	7.84	316.5	7.98	93	2.45	4.36 L/min
1219	17	473.36	18.93	7.84	313.1	8.66	83	1.21	
1234	34	473.37	18.95	7.83	314.0	8.66	90	0.32	
1253	39	473.40	18.20	7.81	307.6	7.52	101	0.63	1.0 L/min
1312	44	473.40	18.02	7.82	306.6	7.54	107	0.76	
1331	49	473.40	17.89	7.83	297.5	7.80	112	0.75	
Values Prior to Sampling									
1331	49	473.40	17.89	7.83	297.5	7.80	112	0.75	1.0 L/min

Field Alkalinity Result: 122 Mg/L as $CaCO_3$
Sample ID: GW0494
Bubbles: none present

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.: KAFB-106104
Site / SWMU No.: 106
Date: 1-27-12
Weather: Sunny
Time: 0824
Field Crew: DM, DR
Crew Signature: Daniel Medina
Review Signature: [signature]
Date Review: 1-27-12

WELL OBSERVATIONS

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

Notes: VOC's 0.0 ppm in BH. BZØ

CALCULATIONS

(A) Depth to Well Bottom	530 ft
(B) Pre-Purge Depth to Water	472.75 ft
(C) Water Column Height (A-B)	57.25 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	58.40 gal
(F) Depth to Top of Screen	510 ft
(G) Depth to Bottom of Screen	525 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)	~~74~~ 75 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: In Situ 9500	R22831
Turbidity Meter: Hach 2100P	02818
Pump: Dedicated Bennette	On File
Field Alkalinity: La Motte	3467#8

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
1-27-12/0859	0	472.75	17.11	7.22	315.2	10.17	144	4.27	3.88 l/min
0929	30	472.76	19.02	7.73	307.9	15.42	113	7.22	
0959	60	472.76	19.04	7.74	307.1	15.52	113	3.63	
1018	65	472.75	18.50	7.71	310.1	10.55	118	4.06	1.0 l/min
1037	70	472.73	18.39	7.71	308.8	10.63	122	3.32	
1056	75	472.71	18.20	7.72	305.6	10.87	126	2.44	
Values Prior to Sampling									
1056	75	472.71	18.20	7.72	305.6	10.87	126	2.44	1.0 l/min

Field Alkalinity Result 120 Mg/L as $CaCO_3$ Sample ID: GW0495

Bubbles ~~very~~ ~~[illegible]~~ DM Bubbly Fine DW

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

Very essential

Shaw Shaw Environmental, Inc.

GROUNDWATER PURGE LOG

Kirtland Air Force Base, Bulk Fuels Facility Spill

Project Name: KAFB-BFF
Well ID No.: 106105
Site / SWMU No.: 106
Date: 2/1/12
Weather: Sunny
Time: 1230
Field Crew: AT, TN
Crew Signature: Antonio Tyler
Review Signature: [illegible]
Date Review: 2/2/12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB, Set pump @ 491'

CALCULATIONS

(A) Depth to Well Bottom	504	ft
(B) Pre-Purge Depth to Water	467.65	ft
(C) Water Column Height (A-B)	36.35	ft
(D) Casing Factor: 4"=0.65 (6")=1.02	1.02	
(E) One Well Casing Volume (C x D):	37.07	gal
(F) Depth to Top of Screen	484	ft
(G) Depth to Bottom of Screen	499	ft
(H) Saturated Filter Pack Length (G –F, or B)	15	ft
(I) Casing/~~Borehole Factor~~ 4/10 = 1.2, (6/10 = 1.07)	1.07	

(J) Filter Pack Volume (H x I)	16.05	gal
(K) Min Purge Volume (E + J)	53.12	gal
EQUIPMENT / MODEL	**ID NUMBER**	
Parameter Meter: Insitu 9500	1222214	
Turbidity Meter: Hach	2821	
Pump: Portable Bennett	on file	
Field Alkalinity: La Motte	3467 #7	

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
2/1/12 1252	Ø	467.65	17.30	7.44	334.6	11.20	277	2.55	1.52 L/m
1342	20	467.59	18.57	7.90	336.0	12.14	216	2.51	
1407	30	467.55	18.62	7.90	339.7	12.78	208	2.08	
1409	35	467.57	18.57	7.89	336.1	12.55	204	1.23	
1437	40	467.55	18.45	7.89	333.8	11.74	202	1.26	1.00 L/min
1455	45	467.52	18.44	7.89	339.1	11.90	200	1.24	
~~1500~~ 1525	53	467.54	18.49	7.93	337.0	11.58	195	1.29	

Values Prior to Sampling

~~1500~~ 1525	53	467.54	18.49	7.93	337.0	11.58	195	1.29	1.0 L/m

Field Alkalinity Result 113 mg/L as $CaCO_3$ Sample ID: GW0496

light bubbles

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 106106
Site / SWMU No.: 106
Date: 2/1/12
Weather: Sunny
Time: 0815
Field Crew: TN, AT
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2-1-12

WELL OBSERVATIONS

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

Notes: VOCs 0 ppm in BH set pump @ 475.00 ft

CALCULATIONS

(A) Depth to Well Bottom	483.60 ft
(B) Pre-Purge Depth to Water	467.31 ft
(C) Water Column Height (A-B)	21.29 ft
(D) Casing Factor: 4"=0.65 5"=1.02	x 1.02
(E) One Well Casing Volume (C x D):	21.72 gal
(F) Depth to Top of Screen	453.60 ft
(G) Depth to Bottom of Screen	483.60 ft
(H) Saturated Filter Pack Length (G –F, or B)	16.30 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07,	x 1.07

(J) Filter Pack Volume (H x I)	17.44 gal
(K) Min Purge Volume (E + J)	39.16 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter In Situ	R 22214
Turbidity Meter Hach	2100P
Pump portable Bennett	on file
Field Alkalinity La Motte #7	3467#4

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
2/1/12 0915	Ø	467.31	11.38	6.93	378.2	9.73	325	2.10	1.60 L/m
1002	20	467.31	17.93	7.86	357.4	9.11	210	3.24	
1014	25	467.33	18.06	7.87	356.2	9.21	206	2.90	~~1.0~~ AT
1032	30	467.29	17.72	7.90	357.2	9.29	199	2.62	1.0 L/m
1050	35	467.30	17.68	7.90	361.4	9.22	195	2.34	
1105	39	467.29	17.73	7.89	360.2	9.16	192	1.93	
Values Prior to Sampling									
1105	39	467.29	17.73	7.89	360.2	9.16	192	1.93	1.0 L/m

Field Alkalinity Result 110 mg/L @ $CaCO_3$ Sample ID: GW 0497

light Bubbles

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-13FF
Well ID No.: 106107
Site / SWMU No.: 106
Date: 2/3/12
Weather: Cloudy
Time: 0830
Field Crew: AT, IN, DO
Crew Signature: [signature]
Review Signature: [signature]
Date Review: 2/8/12

WELL OBSERVATIONS

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

Notes: VOCs Ø in WB - Set pump @ 517'

CALCULATIONS

(A) Depth to Well Bottom	530.16 ft
(B) Pre-Purge Depth to Water	467.48 ft
(C) Water Column Height (A-B)	62.68 ft
(D) Casing Factor: 4"=0.65 5"=1.02	1.02
(E) One Well Casing Volume (C x D):	64 gal
(F) Depth to Top of Screen	510.16 ft
(G) Depth to Bottom of Screen	525.16 ft
(H) Saturated Filter Pack Length (G - F, or B)	15 ft
(I) Casing/Borehole Factor 4/10 = 1.2, 5/10 = 1.07	16.05

(J) Filter Pack Volume (H x I)	16.05 gal
(K) Min Purge Volume (E + J)	80 gal
EQUIPMENT / MODEL	**ID NUMBER**
Parameter Meter: Insitu 9500	R22214
Turbidity Meter: Hach	2821
Pump: Portable Bennett	on file
Field Alkalinity: La Motte	3467 #7

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
2/3/12 0905	Ø	467.48	15.17	7.39	305.0	13.80	268	2.49	1.64 L/m
0951	20	467.44	18.06	7.84	301.4	17.09	213	2.56	
1037	40	467.47	18.16	7.88	301.5	17.19	201	3.50	
1123	60	467.47	18.13	7.87	300.2	16.84	193	2.00	
1138	65	467.48	18.37	7.85	300.2	16.74	185	1.68	
1156	70	467.47	18.14	7.90	299.1	15.88	167	1.68	1.0 L/m
1214	75	467.46	17.76	7.87	300.7	15.28	165	1.55	
1232	80	467.47	17.93	7.92	302.5	14.54	159	1.60	
Values Prior to Sampling									
1232	80	467.47	17.93	7.92	302.5	14.54	159	1.60	1.0 L/m

Field Alkalinity Result 115 Mg/L as $CaCO_3$ Sample ID: GW0498

light Bubbles

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