APPENDIX A

STANDARD GROUNDWATER FORMS

ADMIN RECORD
SW-A-003290

1/8

Form PRO 113A

Revision 0

U S DEPARTMENT OF ENERGY
ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

DATE.	
SHEET	OF

FIELD ACTIVITY DAILY LOG

PROJECT NO

RFETS PROJECT GROUNDWATER SAMPLING PROGRAM

FIELD ACTIVITY SUBJECT

DESCRIPTION OF DAILY ACTIVITIES AND EVENTS

Air Monitoring Ins _____ Water Level Ind _____ Field Parameter Kit: _____ Solomat No _____

VISITORS ON SITE	OKAY (OK)	SUPPORTING DOCUMENTS
		A. DATE-
		B DATE-
		C WELL ID -
WEATHER CONDITIONS		D DATE-
		OTHER

A. PRO 105A WATER LEVEL MEASUREMENT B. AIR MONITORING

C PRO 113B PRO 113C, and/or PRO.113D SAMPLE COLLECTION LOG(S)

D· PRO 113E, WELL STATUS LOG

SAMPLING TEAM PERSONNEL

SIGNATURE OF PREPARER DATE.

U S DEPARTMENT OF ENERGY ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE FORM PRO 113B
Side 1 of 2 GROUNDWATER SAMPLE COLLECTION LOG REVISION 0

PROJECT NAME _____ DATE(S) _____
PROJECT CHARGED _____ SUB-CONTRACTOR _____
SAMPLE NUMBER _____ TEAM LEADER _____
LOCATION CODE _____ MEMBER (S) _____
PID _____ ANALYTE CODE _____
N NUMBER _____ EVENT NUMBER _____
QA/QC _____ Date _____ ☐ 1 Day Well ☐ 2 Day Well ☐ 3 Day Well

Equipment Type	Equipment Identification	Standard Used Lot Number	Temp (°C)	Equipment Reading	Reading Acceptable?	Date	Time
Conductivity							
pH Meter							
Turbidity Meter							

Air Monitoring	Background	Well Bore	Headspace	Other_____	Instrument	Comment
Day 1						
Day 2						
Day 3						

Purge Method - Type Used ☐Peristaltic Pump ☐Bailer (☐Teflon ☐SS) ☐Other _____

PURGE VOLUME CALCULATION - DATUM TOP OF WELL CASING (TOWC) Date _____

Well Casing Inside Diameter (in) = _____(ID) Unit Casing Volume (Gal/Foot) = _____(UV)
Depth to Water (Ft) = _____(WD)
Measured Total Depth _____(MTD) + Probe End (Feet)_____ = Total Depth (Feet) _____(TD)
TD _____ - WD _____ = Initial Water Column (Feet) _____(IC)
UV _____ X IC _____ = Initial Water Volume (Gallons) _____(IV)
3 X IV = Purge Volume (Gallons) _____(PV)
(Check Calculations Before Starting Purge) Checked By (initials) _____

PURGED VOLUMES AND FIELD WATER QUALITY MEASUREMENTS

Time (24-hour)	Volume Purged (Gallons or ml)	Temp (°C)	pH (SU)	Specific Conductance ☐ms/cm or ☐ µs/cm	Turbidity ☐FTU ☐ NTU	Water Description	
						Color	Odor
	Initial						

Does the well dewater? ☐ Yes ☐ No If Yes perform recharge rate calculation If No Enter Purge Volume and Sample Well
Actual Purged Volume = _____ Units Gallons or ml _

RECHARGE RATE CALCULATION

0 9 X (IC) _____ = _____(90% of Initial Water Column)
10 Minute Water Level Recovery Start Time _____ End Time _____
TD _____ - (10 Minute Water Depth _____)(X3) = _____Estimated 30 Minute Recharge (ER)
Is ER less than 90% of IC? ☐ Yes ☐ No If yes purge is completed If no continue with purge sequence

Is water level above top of screen? ☐ Yes ☐ No If yes continue with the following calculation
Depth to Top of Screen _____ - 2 Ft = Screen Depth _____(SD)
TD _____ - SD _____ = Adjusted Water Column _____(AC)
0 9 X AC _____ = 90% of AC
ER less than 90% of AC? ☐Yes ☐ No If yes purge is completed If no continue with purge sequence

Depth to Water Before Sampling (2nd visit)_____ Wtr Col _____ %Rchrg _____ Date_____ Time_____
Depth to Water Before Sampling (3rd visit) _____ Wtr Col _____ %Rchrg _____ Date_____ Time_____

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ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
GROUNDWATER SAMPLE COLLECTION LOG

FORM PRO 113B
REVISION 0

SAMPLE NUMBER _____ LOCATION CODE _____ DATE(S) _____ _____ _____
RIN NUMBER _____ EVENT NUMBER _____
Sample Method - Type Used ☐ Peristaltic Pump ☐ Bailer (☐ Teflon ☐ SS) ☐ Other _____

pH Offscale ☐ Yes ☐ No Offscale pH = _____
YES - At _____ pH Total Alkalinity = _____ x 10= _____ ppm
If NO - At _____ pH, Total Alkalinity (full range) = _____ ppm

Date	Time (24-hr)	Temp (°C)	pH (SU)	Specific Conductance mS/Cm or µS/Cm	Turbidity (FTU or NTU)	Color	Odor	Initials

Analysis	Container	Preserve	Filter	Line Item	Bottled	Date	Time	Lab	Shipping Date
Rad Screen	120 ml Poly	No Pres		OS01A002					
VOA 524 2	40 ml AG	4°C		SS01B009					
BNA	1 L AG	4°C							
Pest/PCB	1 L AG	4°C							
TDS, SO_4, F	1 L Poly	4°C		SS06B034 SS06B037 SS06B018					
TDS SO_4	1 L Poly	4°C		SS06B034 SS06B037					
TDS	1 L Poly	4°C		SS06B034					
NO_3/NO_2	250 ml Poly	H_2SO_4/4°C		SS06B022					
Diss Metals	1 L Poly	HNO_3/4°C	Filter	SS06B007					
Metals	1 L Poly	HNO_3/4°C		SS06B001					
TOC	250 ml AG	H_2SO_4/4°C							
COD	250 ml AG	H_2SO_4/4°C							
Ortho-Phosph	250 ml Poly	4°C	Filter						
Cyanide	1 L Poly	NaOH/4°C							
α/β/U	1 L Poly	HNO_3	Filter						
α/β/U/Sr/Cs	1 Gal Poly	HNO_3	Filter						
a/b/U/Sr/Cs/Ra	1 Gal Poly	HNO_3	Filter						
Sr/Cs/Ra	1 Gal Poly	HNO_3	Filter						
Pu 239/240, Am 241	1 Gal Poly	HNO_3		RC01B012 RC01B007					
Pu	1 Gal Poly	HNO_3							
Am	1 Gal Poly	HNO_3							
Tritium (H_3)	100 ml AG	No Pres.		RC02B001					
Diss U-ISO	1 L Poly	HNO_3	Filter	RC01B017					
Sr 89-90	1 L Poly	HNO_3	Filter	RC05B001					

Comments _____

Completed By _____ Date _____

Checked By _____ Date _____
Print Name Signature

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
SAMPLE COLLECTION LOG FOR DEDICATED PUMP SYSTEM

Sample # _____ Date _____
Location Code _____ Time _____
Project Charge # _____ Sample Team Member _____
Grid _____ Member(s) _____
Access Restrictions _____ RIN _____ EVENT _____ Analyte Code _____
QA/QC _____ Date _____ Contractor _____

Purge Calculations Pump Depth = _____ Water Depth = _____

Pump Pressure = $\frac{\text{Pump Depth}}{2}$ - $\frac{\text{Water Depth}}{2}$ + 15 = _____ *

*Pressure settings usually lower

Purge Volume = Pump Volume (300 ml) + Sample Cup Volume (200 ml) +Tubing Volume (10 ml/ft), Tubing = ____ft
Purge Volume (1x) = 300 ml + 200 ml + _____ ml = _____ ml total

Air Monitoring	Background	Well Bore	Headspace	Comments,
Mini-Rae #				

Pump Settings Purge

Pres.(psi)	Fill Time	Pump Time	Enhncd Fill	Vent Time	Start Time	Stop Time	Color	Odor	Vol Collect.

Total Purged Volume = _____

Water Quality Measurements Purge and Sample

Pres (psi)	Time	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Volume	Water Depth

Pump Settings Sampling

Pres (psi)	Fill Time	Pump Time	Enhncd Fill	Vent Time	Start Time	Stop Time	Volume	Water Depth

Checked by _____ Date _____

S

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

U S DEPARTMENT OF ENERGY

Form PRO 113C (Rev 0)

Side 2 of 2

GROUNDWATER SAMPLE COLLECTION LOG FOR DEDICATED PUMP SYSTEM

SAMPLE NUMBER _____ LOCATION CODES _____ DATE. _____

RIN NUMBER _____ EVENT NUMBER: _____

Sample Method. Marschalk Pump ☐ Other ☐ _____

pH Offscale ☐Yes ☐No pH Offscale reading = _____

If YES - At _____ pH Total Alkalinity = _____ x 10 = _____ ppm

If NO - At _____ pH Total Alkalinity (full range) = _____ ppm

Date	Time 24-hr	Temp (°C)	pH (SU)	Specific Conductance (µs/cm or ma/cm)	Turbidity (NTU)	Color	Odor	Initials

Analysis	Container	Preserve	Filter	Line Item	Bottled	Date	Time	Lab	Shipping Date
Rad Screen	120 ml Poly	No Pres.		OS01A002					
VOA 524 2	40 ml AG	4°C		SS01B009					
BNA	1 L AG	4°C							
Pest/PCB	1 L AG	4°C							
TDS SO_4, F	1 L Poly	4°C		SS06B034 SS06B037 SS06B018					
TDS, SO_4	1 L Poly	4°C		SS06B034 SS06B037					
TDS	1 L Poly	4°C		SS06B034					
NO_3/NO_2 as N	250 ml Poly	H_2SO_4/4°C		SS06B022					
Diss Metals*	1 L Poly	HNO_3/4°C	Filter	SS05B007					
Metals**	1 L Poly	HNO_3/4°C		SS05B001					
TOC	250 ml AG	H_2SO_4/4°C							
COD	250 ml AG	H_2SO_4/4°C							
Ortho-Phosph	250 ml Poly	4°C	Filter						
Cyanide	1 L Poly	NaOH/4°C							
α/β/U	1 L Poly	HNO_3	Filter						
α/β/U/Sr/Cs	1 Gal Poly	HNO_3	Filter						
a/b/U/Sr/Cs/Ra	1 Gal Poly	HNO_3	Filter						
Sr/Cs/Ra	1 Gal Poly	HNO_3	Filter						
Pu 239/240, Am 241	1 Gal Poly	HNO_3		RC01B012 RC01B007					
Pu	1 Gal Poly	HNO_3							
Am	1 Gal Poly	HNO_3							
Tritium (H_3)	100 ml AG	No Pres.		RC02B001					
Diss U-ISO	1 L Poly	HNO_3	Filter	RC01B017					
Sr 89-90	1 L Poly	HNO_3	Filter	RC06B001					

*For Turbid Pump Wells **For Normal Clear Pump Wells

Comments _____

Completed By _____ Date _____

Checked By _____ Date. _____

Print Name Signature

U S DEPARTMENT
OF ENERGY

Form PRO 113 D
Revision 0

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
FIELD QC
GROUND WATER SAMPLE COLLECTION LOG

PROJECT NAME		DATE
PROJECT CHARGED		SUB-CONTRACTOR
SAMPLE NUMBER		SAMPLE TEAM LEAD
LOCATION CODE		MEMBER(S)
RIN NUMBER		EVENT NUMBER
QA/QC	DATE	ANALYTE CODE

SAMPLE PARAMETER MEASUREMENTS

TEMP (°C)	pH (SU)	CONDUCTIVITY (mS/cm)	TURBIDITY (FTU or NTU)*	DATE	TIME	INITIAL

* Hach = FTU/Solomat = NTU

	DUPLICATE
	EQUIP. RINSE
	FIELD BLANK
	TRIP BLANK
	MS
	MSD

ANALYSIS	VOLUME	PRESERVATIVE	FILTER	LINE ITEM CODE	BOTTLE #	DATE	TIME	LAB	SHIP DATE
Rad Screen	120 ML POLY	None		OS01A002					
VOA	(GL) 3 X40	4°C		SS01B009					
TDS SO4 F	1 liter	4°C		SS06B034 SS06B037 SS06B018					
TDS SO4	1 liter	4°C		SS06B034 SS06B037					
TDS	1 liter	4°C		SS06B034					
Nitrate/Nitrite	250 ml	4°C / H_2SO_4		SS06B022					
Dissolved Metals	1 liter	4°C / HNO_3	filter	SS05B007					
Total Metals	1 liter	4°C / HNO_3		SS05B001					
PU/AM	1 gallon	HNO3		RC01B012 RC01B007					
Tritium	(GL) 100 mL	None		RC02B001					
U-Isotope	1 liter	HNO_3	filter	RC01B017					
Total Sr	1 liter	HNO_3	filter	RC05B001					
OTHER									
OTHER									

OMMENTS

Completed by (Pnnt Name)	Signature	Date
Checked by (Print Name)	Signature	Date

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WELL STATUS FORM

RIN # _____
DATE _____

TEAM MEMBER (1) _____
TEAM MEMBER. (2.) _____
ALTERNATE MEMBER (3) _____

		ANALYSIS	VOA	RAD SCREEN	U-ISO	DISS METAL	NITRATE /NITRITE	TDS SO_4, F	TDS SO_4	TDS	Pu/Am	TRIT	Sr 89/90	Total Metals			
		VOLUME	(3) 40 ml	120ml	1 LITER	1 LITER	250 ml	1 LITER	1 LITER	1 LITER	1 GALL. (2.5L)	100 ml	1 LITER	1 Liter			
		PRES	HCl	NONE	HNO_3	HNO_3	H_2SO_4	NONE	NONE	NONE	HNO_3	NONE	HNO_3	HNO_3			
		FILTER	NO	NO	YES	YES	NO	NO	NO	NO	NO	NO	YES	NO			
		TEMP	4°C			4°C	4°C	4°C	4°C	4°C				4°C			
WELL #	PURGE DATE	EVENT #															

X_1= day one X_2= day two X_3= day three X_4= day four X_5= day five X_6=day six

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